

reledmac

Typeset scholarly editions with L^AT_EX*

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based on the original ledmac by

Peter Wilson

Herries Press

which was based on the original edmac, tabmac and edstanza by

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Abstract

The **reledmac** provides many tools in order to typeset scholarly editions. It is based on the **eledmac** package, which was based on the **ledmac** package, which was based on the **edmac** T_EX package.

It can be used in combination with **reledpar** in order to typeset two texts in parallel, like an original text and its translation in a modern language.

reledmac provides many tools and options. Normally, they are all documented in this file. Also provided is a help folder, “examples”. The folder contains additional examples (although not for every possible case). Examples starting with “1-” are for basic uses, those starting with “2-” are for advanced uses.

To report bugs or request a new feature, please go to ledmac GitHub page and click on “New Issue”: <https://github.com/maieul/ledmac/issues/>. You must create an account on github.com to access my page (maieul/ledmac). GitHub accounts are free for open-source users. You can post messages in English or in French (preferred).

You can subscribe to the **reledmac** mail list at:
<http://geekographie.maieul.net/146>

Contents

1 Introduction	12
1.1 Aim of the package	12
1.2 History	13
1.2.1 edmac	13
1.2.2 ledmac	14
1.2.3 eledmac	15

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1.2.4 <code>reledmac</code>	15
1.3 Bibliography	15
2 How the package works — the problem of the number of \LaTeX runs	15
3 Compatibility warning	15
4 Options	16
4.1 Specific features	16
4.2 Optimizing package performance	17
5 Text lines and paragraphs numbering	17
5.1 Text lines numbering	17
5.2 Paragraphs	18
5.2.1 Basics	18
5.2.2 Automatically producing <code>\pstart</code> ... <code>\pend</code>	19
5.2.3 Content before specific <code>\pstart</code> and after specific <code>\pend</code>	19
5.2.4 Content before every <code>\pstart</code> and after every <code>\pend</code>	19
5.2.5 Numbering paragraphs (<code>\pstart</code>)	20
5.2.6 Languages written in Right to Left	20
5.2.7 Memory limits	20
5.3 Lineation commands	21
5.3.1 Disabling lineation	21
5.3.2 Setting lineation start and step	22
5.3.3 Setting lineation reset	22
5.3.4 Setting line number margin	22
5.3.5 Other settings	23
5.4 Changing the line numbers	23
5.4.1 Sublineation	23
5.4.2 Locking lineation	23
5.4.3 Setting and changing line number	23
5.4.4 Line number style	24
5.4.5 Skipping and hiding number	24
5.5 Adding annotations to line numbers	25
5.5.1 Modifying annotation associated with a specific note	26
5.5.2 Changing the position of the annotation	26
5.5.3 Changing the macro in which annotations are wrapped	27
5.5.4 Not printing the second identical annotations	27
5.5.5 Separator between annotations	27
5.5.6 Annotations in the apparatus	28
5.6 Executing code at each line	28
5.7 Executing code at a specific line	28

6 Apparatus commands	28
6.1 Terminology	28
6.2 Critical notes	29
6.2.1 The lemma	29
6.2.2 Footnotes	29
6.2.3 Endnotes	30
6.2.4 Paragraph in critical apparatus	32
6.2.5 Change lemma and line number	32
6.2.6 Changing the names of commands for critical apparatus	33
6.3 Disambiguation of identical words in the apparatus	33
6.3.1 Basic use	33
6.3.2 Case setting	34
6.3.3 Notes about input encoding with UTF-8 processor	34
6.3.4 Notes about right-to-left texts	34
6.3.5 Use with <code>\lemma</code> command	34
6.3.6 Sameword for a group of words	36
6.3.7 Customizing	37
6.3.8 Problems with some macros	37
6.3.9 Automatic sameword annotation	38
6.4 Apparatus of manuscripts	38
6.4.1 Marking sections of text	39
6.4.2 Layout of the apparatus of manuscripts	39
6.4.3 Settings	40
6.5 Familiar notes	40
6.5.1 Basic use	40
6.5.2 Customizing mark	40
6.5.3 Separator for multiple footnotes	41
6.6 Printing the footnote mark without printing the footnote text	41
6.7 Changing series	41
6.7.1 Create a new series	41
6.7.2 Delete series	41
6.7.3 Series order	41
6.8 Position of critical and familiar footnotes	42
7 Apparatus customization	43
7.1 Notes arrangement in a series	43
7.2 Control line number printing	44
7.2.1 Print line number only at first time	44
7.2.2 Print line number annotation only the first time	44
7.2.3 Print page number only at first time	45
7.2.4 Arbitrary text before line number	46
7.2.5 Separator for line range	46
7.2.6 Abbreviate line range	46
7.2.7 Disable line number	47
7.2.8 Printing pstart number	47
7.2.9 Printing stanza number	47

7.2.10 Separator between line and subline numbers	47
7.2.11 Separator between page and line numbers	48
7.2.12 Space around number	48
7.2.13 Space around line symbol	48
7.2.14 Space in place of number	48
7.2.15 Boxing line number and line symbol	48
7.3 Arbitrary code around line number	49
7.4 Separator between the lemma and the note	50
7.4.1 For footnotes	50
7.4.2 For endnotes	50
7.5 Font style	50
7.5.1 For line number	50
7.5.2 For the lemma	51
7.5.3 For all notes	51
7.6 Wrapping notes	51
7.6.1 Wrapping lemmas	51
7.6.2 Wrapping contents	52
7.7 Indent of notes content	52
7.8 Arbitrary code at the beginning of notes	52
7.9 Arbitrary code before inserting note	52
7.10 Options for footnotes in columns	53
7.10.1 Alignment	53
7.10.2 Size of the columns	53
7.11 Options for paragraphed footnotes and notes grouped by line	53
7.11.1 Mark separation of notes	53
7.11.2 Ragged text	54
7.12 Options for block of notes	54
7.12.1 Grouping notes by line	54
7.12.2 Text before notes	54
7.12.3 Code before notes	54
7.12.4 Spacing	55
7.12.5 Rule	55
7.12.6 Maximum height	55
7.12.7 Width	56
7.13 Footnotes and the <code>reledpar</code> columns	56
7.14 Line number annotation	56
7.15 Endnotes in one paragraph	56
8 Fonts	56
9 Verse	57
9.1 Basic	57
9.2 Define stanza indents	57
9.3 Repeating stanza indents	58
9.4 Manual stanza indent	58
9.5 Stanza breaking	59

9.6 Hanging symbol	59
9.7 Long verse and page break	59
9.8 Content before/after verses	60
9.9 Numbering stanza	61
9.10 Various tools	61
9.11 Notes on empty lines	61
10 Grouping	61
11 Cross referencing	62
11.1 Basic use	62
11.2 Cross-referencing to a critical note	63
11.3 Cross-referencing which return a number in any case	63
11.3.1 Cross-referencing in order to define line number of a critical note	63
11.4 Not automatic cross-referencing	64
11.5 Normal \LaTeX cross-referencing	64
11.6 References to start and end lines	64
11.6.1 Reference to main text lines	64
11.6.2 References to lines that are commented on in the apparatus	65
11.6.3 Settings	65
11.6.4 Combining multiple references	67
11.7 Compatibility with <code>xr</code> package	67
12 Sidenotes	67
12.1 Basics	67
12.2 Setting	68
12.2.1 Width	68
12.2.2 Vertical position	68
12.2.3 Distance to the main text	68
12.2.4 Font	68
12.2.5 Separator between notes	68
13 Indexing	69
13.1 Basics	69
13.2 Use with <code>imakeidx</code> or <code>indextools</code>	69
13.3 Referring to critical notes	69
13.4 Separator between page and line numbers	70
13.5 Using <code>xindy</code>	70
13.6 Advanced setting	71
14 Glossary	71
14.1 Preamble setting	71
14.2 Commands	71
15 Tabular material	71

16 Sectioning commands	75
16.1 Sectioning commands without line numbers or critical notes	75
16.2 Sectioning commands with line numbering and critical notes	75
16.3 Optimization	76
17 Quotation environments	76
18 Page breaks	76
18.1 Control page breaking	76
18.2 Prevent page break in a long verses	77
19 Miscellaneous	77
19.1 Known and suspected limitations	78
19.1.1 Non-standard geometry	78
19.1.2 floatrow package compatibility	78
19.1.3 ‘No room for a new’	78
19.1.4 Marginal notes	78
19.1.5 Paragraph shape	78
19.1.6 Paragraphed footnotes	79
19.1.7 Use with other packages	79
19.2 Parallel typesetting	80
I Implementation overview	81
II Preliminaries	81
II.1 Links with original edmac	81
II.2 Package declaration	81
II.3 Package options	82
II.3.1 Options of reledpar	82
II.3.2 Options of reledmac	82
II.4 Loading packages	84
II.5 Compatibility with Lua \TeX	85
II.6 Boolean flags	85
II.7 Messages	86
II.8 Gobbling	93
II.9 Wrapping content	93
II.10 Miscellaneous commands	93
II.11 Prepare reledpar	94
II.12 Booleans provided by other optional packages which are required in any case	95
III Sectioning commands	95
IV List macros	100

V Line counting	101
V.1 Choosing the system of lineation	101
V.2 Line number margin	103
V.3 Line number initialization and increment	104
V.4 Line number locking	105
V.5 Line number style	106
V.6 Line number printing	107
V.7 Line number counters and lists	108
V.8 Line number locking counter	109
V.9 Line number associated to lemma	109
V.10 Reading the line-list file	113
V.11 Commands within the line-list file	115
V.12 Writing to the line-list file	128
VI Marking text for notes	136
VI.1 <code>\edtext</code> itself	137
VI.2 Substitute lemma	145
VI.3 Substitute line numbers	145
VI.4 Lemma disambiguation	147
VII Paragraph decomposition and reassembly	153
VII.1 Boxes, counters, <code>\pstart</code> and <code>\pend</code>	154
VII.2 Processing one line	160
VII.2.1 General process	160
VII.2.2 Process for “normal” line	161
VII.2.3 Process for line containing <code>\eledsection</code> command	163
VII.2.4 Hooks	164
VII.2.5 Sidenotes and marginal line number initialization	165
VIII Line and page number computation	166
VIII.1 Continuous line numbering between parallel typesetting and normal typesetting	169
IX Line number annotation	170
X Line number printing	172
XI Pstart number printing inside	177
XII Restoring footnotes and penalties	178
XII.1 Add insertions to the vertical list	178
XII.2 Penalties	180
XII.3 Printing leftover notes	181
XII.4 Text before notes	182

XIII Critical footnotes	184
XIII.1 Fonts	184
XIII.2 Individual note options	184
XIII.3 Notes language	185
XIII.4 General survey of the way we manage notes	186
XIII.5 General setup	186
XIII.6 Footnotes arrangement	187
XIII.6.1 User level macro	187
XIII.6.2 Normal footnote	187
XIII.6.3 Paragraphed footnotes	193
XIII.6.4 Columnar footnotes	200
XIII.7 Footnote paragraph indent	207
XIII.8 Footnote hanging indent	207
XIII.9 Critical notes presentation	208
XIII.9.1 Font tools	208
XIII.9.2 Pstart number in footnote	209
XIII.9.3 Lemma printing	209
XIII.9.4 Line number printing	210
XIII.9.5 Footnote grouped by line	221
XIV Familiar footnotes	222
XIV.1 Adjacent footnotes	222
XIV.2 Regular footnotes for numbered texts	224
XIV.3 Footnote formats	226
XIV.4 Footnote arrangement	226
XIV.4.1 User level macro	226
XIV.4.2 Normal footnotes	226
XIV.4.3 Two columns footnotes	232
XIV.4.4 Three columns footnotes	235
XIV.4.5 Paragraphed footnotes	237
XIV.5 Wrapping footnote marks in hyperlink	241
XV Code common to both critical and familiar footnote in normal arrangement	242
XVI Footnotes' width for two columns	243
XVII Footnotes' order	244
XVIII Footnotes' rule	244
XIX Specific skip for first series of footnotes	245
XIX.1 Overview	245
XIX.2 User level command	245
XIX.3 Internal commands	246

XX Endnotes	247
XX.1 Internal commands	247
XX.2 User level commands	251
XX.2.1 Inserting contents to endnotes	251
XX.2.2 Printing endnotes	252
XXI Generate series of notes	261
XXI.1 Test if series is still existing	261
XXI.2 Init specific to <code>reledpar</code>	261
XXI.3 For critical footnotes	262
XXI.3.1 Options	262
XXI.3.2 Create inserts, needed to add notes in foot	263
XXI.3.3 Create commands for critical apparatus, <code>\Afootnote</code> , <code>\Bfootnote</code> etc.	264
XXI.3.4 Set standard display	266
XXI.4 For familiar footnotes	266
XXI.4.1 Options	267
XXI.4.2 Create tools for familiar footnotes (<code>\footnoteX</code>)	267
XXI.5 The endnotes	270
XXI.5.1 The auxiliary file	270
XXI.5.2 The main macro	270
XXI.5.3 Tools	271
XXI.5.4 Internal commands	271
XXI.5.5 The options	272
XXI.6 Init standards series (A,B,C,D,E)	273
XXII Setting series display	274
XXII.1 Change series order	274
XXII.2 Test series order	274
XXII.2.1 Get the first series	274
XXII.3 Series setting	275
XXII.3.1 General way of working	275
XXII.3.2 Tools to set options	275
XXII.3.3 Tools to generate options commands	277
XXII.3.4 Options for critical notes	278
XXII.3.5 Options for familiar notes	280
XXII.3.6 Options for endnotes	281
XXII.4 Hooks for a particular footnote	282
XXII.5 Alias	284
XXIII Output routine	284
XXIII.1 Extra footnotes output	285
XXIII.2 Patching standard output's commands	288
XXIV Page numbering in parallel typesetting	290

XXV Cross referencing	292
XXV.1 Compatibility with xref	309
XXVI Sidenotes	309
XXVII Minipages and such	317
XXVIII Indexing	322
XXVIII.1 Looking on package order	322
XXVIII.2 Auxiliary macros for \edindex	323
XXVIII.3 Code specific to \edindexin critical footnotes	324
XXVIII.4 Analysis of command in indexed text	325
XXVIII.5 Code for the formatted index	325
XXVIII.6 Main code	326
XXVIII.7 Hyperlink	328
XXVIII.8 ‘innote’ and ‘notenumber’ option of indextols package	330
XXIX Glossaries	331
XXX Verse	334
XXX.1 Hanging symbol management	334
XXX.2 Using & character	335
XXX.3 Code category setting	335
XXX.4 Stanza count and indent	335
XXX.5 Numbering stanza	337
XXX.6 Stanza number in note	338
XXX.7 Main work	339
XXX.8 Restore catcode and penalties	342
XXXI Apparatus of Manuscripts	342
XXXI.1 User level macro	342
XXXI.2 Setting macro	343
XXXI.3 Counters and lists	344
XXXI.4 Auxiliary file macros	344
XXXI.5 Action macro	345
XXXI.6 Inserting footnote	351
XXXI.7 Other	351
XXXII Arrays and tables	352
XXXII.1 Preamble: macro as environment	352
XXXII.2 Tabular environments	355
XXXII.2.1 Disabling and restoring commands	355
XXXII.2.2 Counters, boxes and lengths	359
XXXII.2.3 Tabular typesetting	363
XXXII.2.4 Environments	374
XXXIII Quotation’s commands	374

XXXIV Section's title commands	376
XXXIV.1 Commands to disable some feature	376
XXXIV.2 General overview	376
XXXIV.3 <code>\beforeeledchapter</code> command	377
XXXIV.4 Auxiliary commands	377
XXXIV.5 Patching standard commands	378
XXXIV.6 Main code of <code>\eledxxx</code> commands	383
XXXIV.7 Macros written in the auxiliary file	386
XXXV Page breaking or no page breaking depending of specific lines	388
XXXVI Long verse: prevents being separated by a page break	390
XXXVII Tools for <code>hyperref</code> package	390
XXXVIII Compatibility with <code>eledmac</code>	391
Appendix A Things to do when changing versions	394
A.1 Migrating from <code>edmac</code> to <code>ledmac</code>	394
A.2 Migration from <code>ledmac</code> to <code>eledmac</code>	395
A.3 Migration to <code>eledmac</code> 1.5.1	396
A.4 Migration to <code>eledmac</code> 1.12.0	396
A.5 Migration to <code>eledmac</code> 17.1	397
A.6 Migration to <code>eledmac</code> 1.21.0	397
A.6.1 <code>\Xledsetnormalparstuff</code> and <code>\ledsetnormalparstuffX</code> . . .	397
A.6.2 Endnotes	397
A.7 Migration to <code>eledmac</code> 1.22.0	397
A.8 Migration to <code>eledmac</code> 1.23.0	397
A.9 Migration from <code>eledmac</code> to <code>reledmac</code>	398
A.9.1 Risk of 'no room for a new'	398
A.9.2 Multiple indices with memoir	398
A.9.3 Deprecated commands and options	398
A.9.4 <code>\renewcommand</code> replaced by <code>command</code>	399
A.9.5 Commands the names of which have been changed	399
A.9.6 Endnotes	401
A.9.7 Z Series	401
A.9.8 Internal commands	401
A.10 Migration to <code>reledmac</code> 2.1.0	401
A.11 Migration to <code>reledmac</code> 2.1.3	401
A.12 Migration to <code>reledmac</code> 2.3.0	401
A.13 Migration to <code>reledmac</code> 2.4.0	402
A.14 Migration to <code>reledmac</code> 2.5.0	402
A.15 Migration to <code>reledmac</code> 2.7.0	402
A.16 Migration to <code>reledmac</code> 2.7.2	402
A.17 Migration to <code>reledmac</code> 2.8.0	402
A.18 Migration to <code>reledmac</code> 2.13.1	402

A.19 Migration to <code>reledmac</code> 2.18.0	403
A.20 Migration to <code>reledmac</code> 2.21.0	403
A.21 Migration to <code>reledmac</code> 2.24.0	403
A.22 Migration to <code>reledmac</code> 2.26.0	403
A.23 Migration to <code>reledmac</code> 2.27.1	403
A.24 Migration to <code>reledmac</code> 2.30.0	403
A.25 Migration to <code>reledmac</code> 2.31.1	404
A.26 Migration to <code>reledmac</code> 2.32.7	404
Appendix B Auxiliary softwares	404
B.1 <i>samewords</i>	404
B.2 critical-keys for <i>Emacs</i>	404
B.3 critical-marks for <i>Emacs</i>	404
B.4 Import from TEI	404
B.5 Import from TEI	404
References	406
Index	406
Change History	458

1 Introduction

1.1 Aim of the package

The `reledmac` package, together with \LaTeX , provides several important facilities for formatting critical editions of texts in a traditional manner. Major features include:

- automatic stepped line numbering, by page, section or paragraph;
- sub-lineation within the main series of line numbers;
- variant readings automatically keyed to line numbers;
- caters to both prose and verse;
- multiple series of footnotes and endnotes;
- block or columnar formatting of the footnotes;
- simple tabular material may be line numbered;
- indexing keyed to page and line numbers.

`reledmac` allows the scholar engaged in preparing a critical edition to focus attention wholly on the task of creating the critical text and evaluating the variant readings, text-critical notes and testimonia. \LaTeX and `reledmac` will take care of the formatting and visual correlation of all the disparate types of information.

Apart from `reledmac` there are other \LaTeX packages for typesetting critical editions. However, the aim of `reledmac` is to provide an “all in one” and flexible tool in the field of critical editions.

Any suggestions for new features are welcome.

This manual contains a general description of how to use `reledmac`, followed by the complete source code and its extensive documentation (in sections I and following, enumerated with Roman numerals). It ends with a list of actions to do when migrating from one version to other, a change history and an index to the source code.

You do not need to read the source code for this package in order to use it; we provide this code primarily for reference, and many of our comments on it repeat material that is also found in earlier sections. But no documentation, however thorough, can cover every question that comes up and many can be answered quickly by consulting the code. On a first reading, we suggest that you read only the general documentation in sections 2, unless you are particularly interested in the innards of `reledmac`.

1.2 History

1.2.1 edmac

The original version of `edmac` was `TEXTED.TEX`, written by John Lavagnino in late 1987 and early 1988 for formatting critical editions of English plays.

John passed these macros on to Dominik Wujastyk who, in September–October 1988, added the footnote paragraphing mechanism, margin swapping and other changes to suit his own purposes, making the style more like that traditionally used for classical texts in Latin and Greek (e.g., the Oxford Classical Texts series). He also wrote some extra documentation and sent the files out to several people. This version of the macros was the first to be called `edmac`.

The present version was developed in the summer of 1990, with the intent of adding necessary features, streamlining and documenting the code, and further generalizing it to make it easily adaptable to the needs of editors in different disciplines. John did most of the general reworking and documentation, with the financial assistance of the Division of the Humanities and Social Sciences, California Institute of Technology. Dominik adapted the code to the conventions of Frank Mittelbach’s `doc` option, and added some documentation, multiple-column footnotes, cross-references, and crop marks.¹ A description by John and Dominik of this version of `edmac` was published as ‘An overview of `edmac`: a `PLAIN` \TeX format for critical editions’, *TUGboat* 11 (1990), pp. 623–643.

From 1991 through 1994, the macros continued to evolve, and were tested at a number of sites. We are very grateful to all the members of the (now defunct) `edmac@mailbase.ac.uk` discussion group who helped us with smoothing out the bugs and infelicities in the macros. Ron Whitney and our anonymous reviewer at the TUG were both of great help in ironing out last-minute wrinkles, while Ron made some important suggestions which may help to make future versions of `edmac` even more efficient. Wayne Sullivan, in particular, provided several important fixes and contributions, including adapting the Mittelbach/Schöpf ‘New Font Selection Scheme’ for use with

¹This version of the macros was used to format the Sanskrit text in volume I of *Metarules of Pāṇinian Grammar* by Dominik Wujastyk (Groningen: Forsten, 1993).

PLAIN T_EX and edmac. Another project Wayne has worked on is a DVI post-processor which works with an edmac that has been slightly modified to output \specials. This combination enables you to recover to some extent the text of each line as ASCII code, facilitating the creation of concordances, an *index verborum*, etc.

As of 1994, we were pleased to be able to say that edmac was being used for the real-life book production of several interesting editions, such as the Latin texts of Euclid's *Elements*,² an edition of the letters of Nicolaus Copernicus,³ Simon Bredon's *Arithmetica*,⁴ a Latin translation by Plato of Tivoli of an Arabic astrolabe text,⁵ a Latin translation of part II of the Arabic *Algebra* by Abū Kāmil Shujā' b. Aslam,⁶ the Latin *Rithmarchia* of Werinher von Tegernsee,⁷ a middle-Dutch romance epic on the Crusades,⁸ a seventeenth-century Hungarian politico-philosophical tract,⁹ an anonymous Latin compilation from Hungary entitled *Sermones Compilati in Studio Generali Quinqueecclesiensi in Regno Ungarie*,¹⁰ the collected letters and papers of Leibniz,¹¹ Theodosius's *Spherics*, the German *Algorismus* of Sacrobosco, the Sanskrit text of the *Kāśikāvṛtti* of Vāmana and Jayāditya,¹² and the English texts of Thomas Middleton's collected works.

1.2.2 ledmac

Version 1.0 of tabmac was released by Herbert Breger in October 1996. This added the capability for typesetting tabular material.

Version 0.01 of edstanza was released by Wayne Sullivan in June 1992, to help a colleague with typesetting Irish verse.

In March 2003 Peter Wilson started an attempt to port edmac from T_EX to L^AT_EX. The starting point was edmac version 3.16 as documented on 19 July 1994 (available from CTAN). In August 2003 the tabmac functions were added; the starting point for these being version 1.0 of October 1996. The edstanza (v0.01) functions were added in February 2004. Sidenotes and regular footnotes in numbered text were added in April 2004. This port was called ledmac (L^AT_EX edmac).

Since July 2011, ledmac is maintained by Maïeul Rouquette. It is increasingly powerful and flexible, but it also has become increasingly divergent from the original T_EX macro.

²Gerhard Brey used edmac in the production of Hubert L. L. Busard and Menso Folkerts, *Robert of Chester's (?) Redaction of Euclid's Elements, the so-called Adelard II Version*, 2 vols., (Basel, Boston, Berlin: Birkhäuser, 1992).

³Being prepared at the German Copernicus Research Institute, Munich.

⁴Being prepared by Menso Folkerts *et al.*, at the Institut für Geschichte der Naturwissenschaften in Munich.

⁵Richard Lorch, Gerhard Brey *et al.*, at the same Institute.

⁶Richard Lorch, 'Abū Kāmil on the Pentagon and Decagon' in *Vestigia Mathematica*, ed. M. Folkerts and J. P. Hogendijk (Amsterdam, Atlanta: Rodopi, 1993).

⁷Menso Folkerts, 'Die *Rithmarchia* des Werinher von Tegernsee', *ibid.*

⁸Geert H. M. Claassens, *De Middelnederlandse Kruisvaartromans*, (Amsterdam: Schipphower en Brinkman, 1993).

⁹Emil Hargittay, Csáky István: *Politica philosophiai Okoskodás-szerint való rendes életnek példája (1664–1674)* (Budapest: Argumentum Kiadó, 1992).

¹⁰Being produced, as was the previous book, by Gyula Mayer in Budapest.

¹¹Leibniz, *Sämtliche Schriften und Briefe*, series I, III, VII, being edited by Dr. H. Breger, Dr. N. Gädeke and others at the Leibniz-Archiv, Niedersächsische Landesbibliothek, Hannover. (see <http://www.nlb-hannover.de/Leibniz>)

¹²Being prepared at Poona and Lausanne Universities.

1.2.3 eledmac

Important changes were put in version 1.0, to make ledmac more easily extensible (see 7 p. 43). These changes can trigger small problems with the old customization. That is why a new name was selected: eledmac (extended ledmac).

To migrate from ledmac to eledmac, please read A.2 p. 395.

1.2.4 reledmac

eledmac has facilitated the creation of customized critical editions. However, the changes made to allow such customization were made in a non-systematic way. Many deprecated commands were kept and many technical ‘debts’ were accumulated, hindering the future evolution of the package.

For these reasons, Maïeul Rouquette decided on a spring cleaning of the code. As some commands name were changed, the resulting compatibility was broken (a little).

A new name was selected: reledmac (extended renewed eledmac). To migrate from eledmac to reledmac, please read A.9 p. 398.

1.3 Bibliography

A collaborative list of works edited with (r)(e)ledmac is available at https://www.zotero.org/groups/209265/critical_editions_typeset_with_edmac_ledmac_eledmac_and_reledmac/. Please add your own edition made with (r)(e)ledmac.

If you write a book or an article about (r)(e)ledmac, please add it on the collaborative bibliography on <https://www.zotero.org/groups/1024519/>.

2 How the package works — the problem of the number of \LaTeX runs

The reledmac package is a three-pass package like \LaTeX itself. Although your textual apparatus and line numbers will be printed on the first run, it takes two more compilations by \LaTeX to be sure that everything is correctly placed, and one more if you typeset right-to-left text with \XeLaTeX . If you make any subsequent changes altering the number of lines or notes, the input file may similarly require three passes to get everything to the right place. reledmac will tell you that you need to make more runs when it detects changes, but it does not expend the labor to check this thoroughly. If you have problems with a line or two misnumbered at the top of a page, try running \LaTeX once or twice more.

However, the best way to be sure that one has made the right number of runs is to use some of \LaTeX ’s run scripts like *latexmk*.

3 Compatibility warning

If you use other classes than `\article` or `\book`, or modify the layout with `geometry`, some settings should be made to have correct height for the blocks of notes.

Please read 7.12.6 p. 55.

If you use the Lua \TeX engine, you need Lua \TeX 1.1.0 or later. A file may mix *numbered* and *unnumbered* text.

Numbered text is printed with marginal line numbers and can include footnotes and endnotes that are referenced to those line numbers: this is how you will want to print the text that you are editing.

Unnumbered text is not printed with line numbers, and you can't use `reledmac`'s note commands with it: this is appropriate for introductions and other material added by the editor around the edited text.

4 Options

The package can be loaded with a number of global options which are listed here. There are two types of options: 1) options which provide specific features, and, 2) options which optimize the package's performance. It is advisable for you to read the relevant parts of the handbook, before reading about the first type of option (specific features), but you can look at the second type (package optimization) in your first reading of the manual.

4.1 Specific features

draft underlines lemmas in the main text.

auxdir `reledmac` generates auxiliary files. It could be useful to store them in a specific directory. You can set it using `auxdir=folder` option. Note the two following point:

1. \TeX is not able to create folder. You should create it yourself.
2. The option does not change the default \LaTeX auxiliary files (`.aux`, `.toc`, ...).

eledmac-compat help to migrate from `eledmac` to `reledmac` (see A.9.5 p. 399).

nopenalties must be called in some cases when using paragraphed endnotes (?? p. ??)

nopbinverse prevents page break within verse environment.

noquotation by default, the quotation environment is redefined within numbered text. You can disable this redefinition with `noquotation` (see 17 p. 76).

noresetlinenumannotation Does not reset the annotations to line number at each line. See 5.5 p. 25.

parapparatus by default, the apparatus cannot contain paragraph breaks; this option enables paragraphing inside the apparatus.

swcaseinsensitive make `\sameword` command case insensitive.

widthliketwocolumns set the width of the text printed in a single column to be the same as the width of the text printed in two parallel columns with `reledpar`. This is useful when alternating between normal and parallel typesetting.

xindy and **xindy+hyperref** select xindy as the index processor (13.5 p. 70).

4.2 Optimizing package performance

nocritical disables tools for critical footnotes (`\Afootnote`, `\Bfootnote` etc.). If you do not need critical footnotes, this option lets `reledmac` run faster. It will also preserve room for other packages.

noeledsec disables tools for `\eledsection` and related commands (16.2 p. 75).

noend disables tools for endnotes (`\Aendnote`, `\Bendnote` etc.). If you do not need endnotes, this option lets `reledmac` run faster. It will also preserve room for other packages.

nofamiliar disables tools for familiar footnotes (`\footnoteA`, `\footnoteB` etc.). If you do not need familiar footnotes, this option lets `reledmac` run faster. It will also preserve room for other packages.

noledgroup `reledmac` allows use of a series of critical notes and a new series of normal notes inside `minipage` and `ledgroup` environments (see 10 p. 61). However, such features use up computer memory, at the expense of other processing needs. So if you do not need this feature, use `noledgroup` option. This should make `reledmac` faster.

series `reledmac` defines five levels of notes: A, B, C, D, E. Using all these levels consumes memory space and processing speed. This is why, if your work does not require the entire A–E series, you can narrow down the available number of series. For example, if you only need A and B series, call the package with `series={A,B}` option.

5 Text lines and paragraphs numbering

5.1 Text lines numbering

`\beginnumbering` Each section of numbered text must be preceded by `\beginnumbering` and followed by `\endnumbering`, as in the following example.

```
\beginnumbering
Text
\endnumbering
```

The `\beginnumbering` macro resets the line number to zero, reads an auxiliary file called `<jobname>.nn` (where `<jobname>` is the name of the main input file for this job, and `nn` is 1 for the first numbered section, 2 for the second section, and so on), and then creates a new version of this auxiliary file to collect information during this run. The

first instance of `\beginnumbering` also opens a file called `\jobname\<series>end` to receive the text of the endnotes. `\endnumbering` closes the `\jobname.nn` file.

If the line numbering of a text is to be continuous from start to end, then the whole text will be typed between one pair of `\beginnumbering` and `\endnumbering` commands. But your text will most often contain chapter or other divisions marking sections that should be independently numbered, and these will be appropriate places to begin new numbered sections.

`reledmac` has to read and store in memory a certain amount of information about the entire section when it encounters a `\beginnumbering` command, so it speeds up the processing and reduces memory use when a text is divided into a larger number of sections (at the expense of multiplying the number of external files that are generated).

5.2 Paragraphs

5.2.1 Basics

`\pstart` Within a numbered section, each paragraph of numbered text must be marked using the `\pend` `\pstart` and `\pend` commands like this:

```
\pstart
Paragraph of text.
\pend
```

Text that appears within a numbered section but is not marked with `\pstart` and `\pend` will not be numbered.

The following example shows the proper section and paragraph markup and the kind of output that would typically be generated:

```
\beginnumbering
\pstart
This is a sample paragraph, with
lines numbered automatically.
\pend

\pstart
This paragraph too has its
lines automatically numbered.
\pend

The lines of this paragraph are
not numbered.

\pstart
And here the numbering begins
again.
\pend
\endnumbering
```

5.2.2 Automatically producing `\pstart ... \pend`

`\autopar` You can use `\autopar` to avoid the nuisance of this paragraph markup and still have every paragraph automatically numbered. The `\autopar` command needs to be called inside a `\beginnumbering... \endnumbering` structure, as follows:

```
\beginnumbering
\autopar

A paragraph of numbered text.

Another paragraph of numbered
text.

\endnumbering
```

`\autopar` fails, however, on paragraphs that start with a `{` or with any other command that starts a new group before it generates any text. Such paragraphs need to be started explicitly, before the new group is opened, using `\indent`, `\noindent`, or `\leavevmode`, or using `\pstart` itself.¹³

5.2.3 Content before specific `\pstart` and after specific `\pend`

Both `\pstart` and `\pend` can take an optional argument in brackets. Its content will be printed before the beginning of `\pstart` / after the end of `\pend` instead of the argument of `\AtEveryPstart` / `\AtEveryPend`.

Note that a `\noindent` will be automatically added before this argument, and, consequently, a `\parskip` will be inserted. You can use a second optional argument in brackets to avoid that `\noindent`.

```
\pstart[foo] % A \noindent will be inserted before foo.
\pstart[] [foo] % No \noindent before foo.
```

The second optional argument of `\pstart` / `\pend` replaces the argument of `\AtEveryPstart` / `\AtEveryPend`.

If you need to start a `\pstart` with brackets, or to add brackets after a `\pend`, just add a `\relax` between `\pstart ... \pend` and the brackets.

This feature is also useful when typesetting verses (see 9 p. 57) or `reledpar` (see 19.2 p. 80).

A `\noindent` is automatically added before this argument.

5.2.4 Content before every `\pstart` and after every `\pend`

`\AtEveryPstart` `\AtEveryPend` You can use both `\AtEveryPstart` and `\AtEveryPend`. Their arguments will be printed before every `\pstart` begins / after every `\pend` ends.

¹³For a detailed study of the reasons for this restriction, see Barbara Beeton, 'Initiation rites', *TUGboat* 12 (1991), pp. 257–258.

Note that a `\noindent` will be inserted before the argument, and, consequently, a `\parskip`. You can use the starred version of `\AtEveryPstart` and `\AtEveryPend` to avoid the `\noindent`.

`\AtStartEveryPstart`
`\AtEndEveryPend`

The argument of `\AtStartEveryPstart` / `\AtEndEveryPend` will be inserted at the beginning / the end of every `\pstart` / `\pend` in the same paragraph. For example, if you want each `\pstart` to start with a star, you can use:

```
\AtStartEveryPstart{*}
```

Instead of manually doing

```
\pstart * Real pstart content.\pend
```

5.2.5 Numbering paragraphs (`\pstart`)

`\numberpstarttrue`
`\numberpstartfalse`
`\thepstart`

It is possible to insert a number at every `\pstart` command; you must use the `\numberpstarttrue` command to have it. You can stop the numbering with `\numberpstartfalse`. You can redefine the command `\thepstart` to change style. You can change the value of the `pstart` number by using *after* `\beginnumbering`:

```
\setcounter{pstart}{value}
```

On each `\beginnumbering` the numbering restarts.

`\sidepstartnumtrue`

`\labelpstarttrue`

With the `\sidepstartnumtrue` command, the number of `\pstart` will be printed at the sides of the text. In this case, the line number will be not printed.

With the `\labelpstarttrue` command, a `\label` added just after a `\pstart` will refer to the number of this `pstart`.

5.2.6 Languages written in Right to Left

If you use languages written right to left with \LaTeX or \XeTeX , you must switch text direction *before* the `\pstart` command.

5.2.7 Memory limits

This paragraph is kept for history, but the problems described below should not appear with the most recent version of \LaTeX .

`\pausenumbering`
`\resumenumbering`

`reledmac` stores a lot of information about line numbers and footnotes in memory as it goes through a numbered section. But at the end of such a section, it empties its memory out, so to speak. If your text has a very long numbered section it is possible that your \LaTeX may reach its memory limit. There are two solutions to this.

The first solution is to get a larger \LaTeX with increased memory.

The second solution is to split your long section into several smaller ones. The trouble with this is that your line numbering will start again at zero with each new section. To avoid this problem, we provide `\pausenumbering` and `\resumenumbering` which are just like `\endnumbering ... \beginnumbering`, except that they arrange for

your line numbering to continue across the break. Use `\pausenumbering` only between numbered paragraphs:

```
\beginnumbering
\pstart
Paragraph of text.
\pend
\pausenumbering

\resumenumbering
\pstart
Another paragraph.
\pend
\endnumbering
```

We have defined these commands as two macros, in case you find it necessary to insert text between numbered sections without disturbing the line numbering. But if you are really just using these macros to save memory, you might as well type,

```
\newcommand{\memorybreak}{\pausenumbering\resumenumbering}
```

and type `\memorybreak` between the relevant `\pend` and `\pstart`.

5.3 Lineation commands

5.3.1 Disabling lineation

`\numberlinefalse` Line numbering can be disabled with `\numberlinefalse`. It can be enabled again with `\numberlinetrue`.

This feature must be used with caution.

- It should not be use if you have critical footnotes after `\numberlinefalse`.
- It could be used in the following cases:
 - You want only familiar footnotes, not critical footnotes;
 - You want only parallel typesetting (using `reledpar`) but no critical footnotes.
 - You disable, for a portion of text, line numbering
- It must not be used if:
 - You do not want to have the line number in the margins, but do want to use critical footnotes. In this case, set `\firstlinenum` to a big value, such as 100,000 (5.3.2 p. 22).
 - You want to freeze the line numbering for some line, but still keep critical footnotes. In this case, use `\startlock` (5.4.2 p. 23).

A successor to `reledmac` may disable this feature.

5.3.2 Setting lineation start and step

`\firstlinenum`
`\linenumincrement`

By default, `reledmac` numbers every 5th line. There are two counters that control this behaviour: `firstlinenum` and `linenumincrement`. They can be changed using `\firstlinenum{<num>}` and `\linenumincrement{<num>}`. `\firstlinenum` specifies the first line that will have a printed number, and `\linenumincrement` is the difference between successive numbered lines. For example, to start printing numbers at the first line and to have every other line numbered:

```
\firstlinenum{1} \linenumincrement{2}
```

`\firstsublinenum`
`\sublinenumincrement`
`\linenumberlist`

There are similar commands, `\firstsublinenum{<num>}` and `\sublinenumincrement{<num>}` for controlling sub-line numbering.

You can define `\linenumberlist` to specify a non-uniform distribution of printed line numbers. For example:

```
\gdef\linenumberlist{1,2,3,5,7,11,13,17,19,23,29}
```

to have numbers printed on prime-numbered lines only. There must be no spaces within the definition which consists of comma-separated integer numbers. The numbers can be in any order but it is easier to read if you put them in numerical order. Either omitting the definition of `\linenumberlist` or following the empty definition

```
\gdef\linenumberlist{}
```

the standard numbering sequence is applied. The standard sequence is that specified by the combination of the `firstlinenum`, `linenumincrement`, `firstsublinenum` and `linenumincrement` counter values.

5.3.3 Setting lineation reset

`\lineation`

Lines can be numbered either by page, by `pstart` or by section; you specify this using the `\lineation{<arg>}` macro, where `<arg>` is either `page`, `pstart` or `section`.

You may only use this command at places where numbering is not in effect; you can't change the lineation system within a section. You can change it between sections: they don't all have to use the same lineation system. The package's standard setting is `\lineation{section}`. If the lineation is by `pstart`, the `pstart` number will be printed before the line number in the notes.

5.3.4 Setting line number margin

`\linenummargin`

The command `\linenummargin{<location>}` specifies the margin where the line (or `pstart`) numbers will be printed. The permissible values for `<location>` are `left`, `right`, `inner`, or `outer`: for example, `\linenummargin{inner}`. The package's default setting is

```
\linenummargin{left}
```

to typeset the numbers in the left hand margin. You can change this whenever you're not in the middle of making a paragraph.

More precisely, the value of `\linenummargin` used is the value in effect at the `\pend` of a numbered paragraph. Apart from an initial setting for `\linenummargin`, only change `\linenummargin` after a `\pend`, whereupon it will apply to all following numbered paragraphs, until changed again (changing it between a `\pstart` and `\pend` pair will apply the change to all of the current paragraph).

5.3.5 Other settings

`\leftlinenum` `\rightlinenum` `\linenumsep` When a marginal line number is to be printed, there are many ways to display it. You can redefine `\leftlinenum` and `\rightlinenum` to change the way marginal line numbers are printed in the left and right margins respectively; the initial versions print the number in font `\numlabfont` (described below) at a distance `\linenumsep` (initially set to one pica) from the text.

5.4 Changing the line numbers

Normally, line numbering starts at 1 for the first line of a section and increments by one for each line thereafter. There are various common modifications of this system and the commands described here allow you to put such modifications into effect.

5.4.1 Sublineation

`\startsub` `\endsub` You insert the `\startsub` and `\endsub` commands in your text to turn sub-lineation on and off. For example, stage directions in plays are often numbered with sub-line numbers: as line 10.1, 10.2, 10.3, rather than as 11, 12, and 13. Titles and headings are sometimes numbered with sub-line numbers as well.

When sub-lineation is in effect, the line number counter is frozen and the sub-line counter advances instead. If one of these commands appears in the middle of a line, it doesn't take effect until the next line; in other words, a line is counted as a line or sub-line depending on what it started out as, even if it changes in the middle.

`\Xsublinesep` `\Xsublinesepside` You can change the separator between the line number and the subline number either by using `\Xsublinesep` without any optional argument (7.2.10 p. 47) or by using `\Xsublinesepside`. In the second case, it will change the separator only for line numbers in the margins, not in the footnotes.

5.4.2 Locking lineation

`\startlock` `\endlock` The `\startlock` command, used in running text, locks the line number at its current value, until you insert `\endlock`. It can tell for itself whether you are in a patch of line or sub-line numbering. One use for line-number locking is in printing poetry: there the line numbers should be those of verse lines rather than of printed lines, even when a verse line requires several printed lines. But in this case you may use the `\stanza` mechanism, see 9 p. 57.

`\lockdisp` When line-number locking is used, several printed lines may have the same line number, and you have to specify whether you want the number attached to the first printed line or the last, or whether you just want the number printed by them all, assuming that the settings of the previous parameters requires the display of a line number for this line. You specify your preference using `\lockdisp{<arg>}`; its argument is a word, either `first`, `last`, or `all`. The package initially sets this as `\lockdisp{first}`.

5.4.3 Setting and changing line number

`\setline` `\advanceline` In some cases you may want to modify the line numbers that are automatically cal-

culated: if you are printing only fragments of a work but want to print line numbers appropriate to a complete version, for example. The `\setline{<num>}` and `\advanceline{<num>}` commands may be used to change the current line's number (or the sub-line number, if sub-lineation is currently on). They change both the marginal line numbers and the line numbers passed to the notes. `\setline` takes one argument, the value to which you want the line number set; it must be 0 or greater. `\advanceline` takes one argument, an amount that should be added to the current line number; it may be positive or negative.

`\setlinenum` The `\setline` and `\advanceline` macros should only be used within a `\pstart... \pend` group. The `\setlinenum{<num>}` command can be used outside such a group, for example, between a `\pend` and a `\pstart`. It sets the line number to `<num>`. It has no effect if used within a `\pstart... \pend` group.

5.4.4 Line number style

`\linenumberstyle` Line numbers are normally printed as arabic numbers. You can use `\linenumberstyle{<style>}`
`\sublinenumberstyle` to change the numbering style. `<style>` must be one of:

`Alph` Uppercase letters (A ... Z).

`alph` Lowercase letters (a ... z).

`arabic` Arabic numerals (1, 2, ...)

`Roman` Uppercase Roman numerals (I, II, ...)

`roman` Lowercase Roman numerals (i, ii, ...)

Note that with the `Alph` or `alph` styles, 'numbers' must be between 1 and 26 inclusive.

Similarly `\sublinenumberstyle{<style>}` can be used to change the numbering style of sub-line numbers, which is normally arabic numerals.

5.4.5 Skipping and hiding number

`\skipnumbering` When inserted into a numbered line the macro `\skipnumbering` causes the numbering of that particular line to be skipped; that is, the line number is unchanged and no line number will be printed. Note that if you use it in `\stanza`, you must call it at the beginning of the verse.

`\hidenumbering` When inserted into a numbered line, the macro `\hidenumbering` causes the number for that particular line to be hidden; namely, no line number will print. Note that if you use it in `\stanza`, you must call it at the beginning of the verse.

`\hidenumberingonleftpage` `\hidenumberingonleftpage` is like `\hidenumbering`, but is applied only on left page. `\hidenumberingonrightpage` is applied on right page. They can be useful if the position of the line number is depending of the position of the page, but the position of marginal note is fixed.

5.5 Adding annotations to line numbers

You may want to have two or more numbers associated with a line of text. Consider, for example, the following cases:

- You want to split a line of verse into two parts depending upon some stylistic / rhythmic / linguistic convention.
- You want to add the line number used by a previous edition of the work.
- You want to typeset biblical text, and use division in verse.

In such instances, you must add the second number manually, as `reledmac` can't determine a general pattern for such numbering, which depends too heavily upon the edited text.¹⁴

`\linenumannotation` To resolve this issue, `reledmac` allows you to annotate line numbers using the following command:

```
\linenumannotation{<annotation>}
```

The annotation can contain any textual value (whether number, text, or other) such as the line number from the older edition. Here are some characteristics of line number annotation:

- An annotation is associated with a line of text. It is reset with each new line of text, unless you use the `noresetlinenumannotation` option of `reledmac`.
- It is printed alongside the line number in the margin.
- It is printed following the line number in critical footnotes and endnotes.
- And of particular interest: the annotation is printed in the critical note *only* when the `\edtext` is issued after the `\linenumannotation`.
- If two or more annotations are called before an `\edtext`, the last one is used in associated notes.
- If an annotation is called within an `\edtext`, it is printed as an annotation for the end of the lemma.

Here is an example, supposing we are on line 1:

```
\edtext{first lemma}
\linenumannotation{A}
\edtext{second lemma}{...}
\edtext{third%
  \linenumannotation{B}
  lemma}{...}
\edtext{fourth lemma}&
```

¹⁴However, you may create your own commands dealing with such patterns which will in turn call `reledmac` commands.

In the critical notes, the line number will be followed

- by nothing in the first lemma, as there is no annotation for this line;
- by “A” for the second lemma;
- by “A-B” for the third lemma, as it starts while annotation A is still in effect and it finishes after annotation B has already taken effect;
- by “B” for the fourth lemma.

5.5.1 Modifying annotation associated with a specific note

`\lineannot` The `\linenum` (6.2.5 p. 32) macro changes the line number passed to a note. The `\lineannot` macro does the same for the annotations. It takes one argument, containing the beginning and ending annotations separated by a pipe (`|`). As with `\linenum`, if one wishes to change some specific part of the annotation, one can use

```
\lineannot{|b}% to change the ending annotation
\lineannot{a|}% to change the beginning annotation
\lineannot{a|b}% to change both
\lineannot{\empty|}% to delete the beginning annotation
```

5.5.2 Changing the position of the annotation

By default, annotations are placed after line numbers in both margin and footnote.

To change this behaviour, one can use one of the following commands:

- `\Xlinenumannotationposition[⟨s⟩]{⟨v⟩}` changes the position in critical footnotes with `⟨s⟩` for the series of footnotes to which it applies, where `⟨s⟩` may be a comma-separated list of series. When `⟨s⟩` is empty, the change applies also to annotations at the sides of the page, alongside the line number.
- `\Xlinenumannotationpositionside{⟨v⟩}` changes the position at the sides of the page, alongside the line numbers.
Note that `\Xlinenumannotationposition` without any optional argument will override this setting.
- `\Xendlinenumannotationposition[⟨s⟩]{⟨v⟩}` changes the position in critical endnotes, `⟨s⟩` for the series of endnotes to which it applies, where `⟨s⟩` may once again be a comma-separated list of series.

In each of these three commands, `⟨v⟩` can be `after` or `before` to indicate position with regards to the line number.

`\Xlinenumannotationposition`
`\Xendlinenumannotationposition`

5.5.3 Changing the macro in which annotations are wrapped

By default, annotations are wrapped in the `\textsuperscript` macro. You can modify this using one of the following:

- `\Xwraplinenumannotation[⟨s⟩]{⟨cmd⟩}` for critical footnotes; `⟨s⟩` indicates the series of notes to which it applies and may be a comma-separated list of series. When `⟨s⟩` is empty, the change applies to the annotations in the margins also—around the line number—as well as to the annotations referenced using the `\annotationref` command of the crossref mechanism (11 p. 62).
- `\Xwraplinenumannotationside{⟨cmd⟩}` for annotations in the margins only. Note that `\Xwraplinenumannotation` without any optional argument will override this setting.
- `\Xwraplinenumannotationref{⟨cmd⟩}` for annotations referenced using the `\annotationref` command of the crossref mechanism (11 p. 62). Note that `\Xwraplinenumannotation` without any optional argument will override this setting.
- `\Xendwraplinenumannotation[⟨s⟩]{⟨cmd⟩}` for critical endnotes, where `⟨s⟩` indicates the series of notes to which it applies, which may be a comma-separated list.

`⟨cmd⟩` is a command which can take one argument; the backslash is required though.

For example, if you do not wish to have annotations in the margins, but do want to have them in bold in the critical footnotes and endnotes, you say:¹⁵

```
\makeatletter
\Xwraplinenumannotation{\textbf}
\Xendwraplinenumannotation{\textbf}
\Xwraplinenumannotationside{\@gobble}
\makeatother
```

5.5.4 Not printing the second identical annotations

If you print only line number annotation, you may get in critical notes something like 6–6, because the starting and ending annotations are the same. You can avoid that using `\Xnoidenticallylinenumannotation[⟨s⟩]`, for critical footnotes or `\Xendnoidenticallylinenumannotation[⟨s⟩]`

5.5.5 Separator between annotations

If there are more than one annotation in the same line, they are separated by a comma. If you want to change the separator, you can use `\setlinenumannotationsep{⟨sep⟩}`

¹⁵The `\@gobble` command takes one argument, and returns nothing.

5.5.6 Annotations in the apparatus

Some other options for annotations in the apparatus are described in 7.2.2 p. 44

5.6 Executing code at each line

`\dolinehook`
`\doinsidelinehook`

reledmac provides an advanced feature for users. The argument passed to `\dolinehook{⟨arg⟩}` will be executed before slicing a new line in the paragraph. The argument passed to `\doinsidelinehook{⟨arg⟩}` will be executed before printing a new line, when the line number has already been fixed. In many cases, the latter is more useful than the former. The file `examples/2-line_numbers_in_header.tex` provides an example for printing the first and last line numbers of a page in the header.

5.7 Executing code at a specific line

Sometime, you want to execute a code at a precise point in the flow of your text. For example, if the current header of the page corresponds to the position inside the text, you may want to use `\markboth` (or similar) command. The main problem is that you need to execute `\markboth` when reledmac typesets the text, and not when it reads it, because that could create damage with vertical spacing.

`\doinsidethislinehook`

The `\doinsidethislinehook{⟨code⟩}` macro allows `⟨code⟩` to be executed when the text is typeset. The `⟨code⟩` will be executed in the line equivalent to the position of `\doinsidethislinehook` in the flow of the text.

For example, with the following code:

```
\beginnumbering
\pstart
...
1.\doinsidelinehook{\markboth{1}{1}} a
\pend
```

`\markboth{1}{1}` will be executed at the line the 1. will be typeset. The `⟨code⟩` of `\doinsidethislinehook` will be executed only at the second run of \TeX .

See the file `examples/2-subdivision-number-in-header.tex` for an example. Especially, the use of this command with \TeX counters is quite complex, but the example show you how to deal with this problem.

6 Apparatus commands

6.1 Terminology

We call “critical notes” notes which refer to both a lemma, that is a part of text, and a line number. Critical notes are subdivided in critical footnotes and critical endnotes.

We call “familiar notes” notes which refer to a footnote mark in the main text.

reledmac manages many series of notes of each category. A series of notes is identified by an uppercase letter. When the series letter is at the *beginning* of a command

name, it refers to a critical footnote. When the series letter is at the *end* of a command name, it refers to a familiar footnote.

So :

- `\Afootnote` is a critical footnote of the series A.
- `\Bendnote` is a critical endnote of the series B.
- `\footnoteC` is a familiar footnote of the series C.

6.2 Critical notes

6.2.1 The lemma

`\edtext` Within numbered paragraphs, all footnotes and endnotes are generated by the `\edtext` macro:

```
\edtext{<lemma>}{<commands>}
```

The `<lemma>` argument is the lemma in the main text: `\edtext` both prints this as part of the text, and makes it available to the `<commands>` you specify to generate notes.

For example:

I am happy:	1	I am happy: I saw my friend Smith on
I saw my friend <code>\edtext{Smith}{</code>	2	Tuesday.
<code>\Afootnote{Jones C, D.}}</code>		
on Tuesday.		
		1 Smith] Jones C, D.

The lemma `Smith` is printed as part of this sentence in the text, and is also made available to the footnote that specifies a variant, `Jones C, D`. The footnote macro is supplied with the line number at which the lemma appears in the main text.

The `<lemma>` may contain further `\edtext` commands. Nesting makes it possible to print an explanatory note on a long passage together with notes on variants for individual words within the passage. For example:

I am happy : <code>\edtext{I saw my friend</code>	1	I am happy : I saw my friend Smith on
<code>\edtext{Smith}{\Afootnote{Jones</code>	2	Tuesday.
<code>C, D.}}</code> on Tuesday.}{		
<code>\Bfootnote{The date was</code>		
July 16, 1954.}		1 Smith] Jones C, D.
}		
		1-2 I saw my friend Smith on Tuesday.] The
		date was July 16, 1954.

However, `\edtext` cannot handle overlapping but unnested notes—for example, one note covering lines 10–15, and another covering 12–18; an `\edtext` that starts in the `<lemma>` argument of another `\edtext` must end there, too. (The `\lemma` and `\linenum` commands may be used to generate overlapping notes if necessary.)

6.2.2 Footnotes

The second argument of the `\edtext` macro, `<commands>`, may contain a series of subsidiary commands that generate various kinds of notes.

`\Afootnote` Five separate series of footnotes are maintained; each macro takes one argument like `\Afootnote{⟨text⟩}`. When all of the five are used, the A notes appear in a layer just below the main text, followed by the rest in turn, down to the E notes at the bottom.

`\Bfootnote` These are the main macros that you will use to construct the critical apparatus of your text.

`\Cfootnote`

`\Dfootnote`

`\Efootnote`

If you need more series of critical notes, please look at 6.7.1 p. 41.

An optional argument can be added before the text of the footnote. Its value is a comma-separated list of options. The available options are:

- `fulllines` to disable `\Xtwolines` and `\Xmorethantwolines` features for this note (cf. 7.2.6 p. 46).
- `nonum` disables line numbering for this note. A horizontal blank space is added instead. You can use `\Xinplaceofnumber` to set it (7.2.14 p. 48).
- `nosep` to disable the lemma separator for this note. A horizontal blank space is added instead. You can use `\Xinplaceoflemmaseparator` to set it (7.4.1 p. 50).
- `linrangesep=⟨c⟩` to change to `⟨c⟩` the separator between start line and end line for this particular note.

Example: `\Afootnote[nonum]{⟨text⟩}`.

6.2.3 Endnotes

`\Aendnote` **Inserting endnotes** The package also maintains five separate series of endnotes.

`\Bendnote` If you do not need the endnotes facility, you should use `noend` option when loading `reledmac`.

`\Cendnote`

`\Dendnote` The mechanism is similar to the one for footnotes: each macro takes one or more optional arguments and one single argument, like:

`\Eendnote` `\Aendnote[⟨option⟩]{⟨text⟩}`.

`⟨option⟩` can contain a comma-separated list of values. Allowed values are:

- `fulllines` to disable `\Xendtwolines` and `\Xendmorethantwolines` features for this particular note (cf. 7.2.6 p. 46).
- `nonum` to disable line number for this particular note.
- `nosep` to disable the lemma separator for this particular note. A horizontal blank space is added instead. You can use `\Xendinplaceoflemmaseparator` to set it (7.4.2 p. 50).
- `linrangesep=⟨c⟩` to change to `⟨c⟩` the separator between start line and end line for this particular note.

`\doendnotes` **Printing endnotes** Normally, endnotes are not printed: you must use the `\doendnotes{⟨s⟩}`, where `⟨s⟩` is the letter of the series to be printed. Put this command where you want the corresponding set of endnotes printed. In this case, all the endnotes of the `⟨s⟩` series are printed, for all numbered sections.

`\doendnotesbysection` However, you may want to print the endnotes of one given series covering the first numbered section, then the endnotes of another given series covering the first numbered section, then the endnotes of the first given series covering the second numbered section, then the endnotes of the second given series covering the second numbered section, and so forth. In this case, use `\doendnotesbysection{⟨s⟩}`. For each value of `⟨s⟩`, the first call of the command will print the notes for the first series, the second call will print the notes for the second series etc. For example, do:

```
\section{Endnotes}
\subsection{First text}
\doendnotesbysection{A}
\doendnotesbysection{B}
\subsection{Second text}
\doendnotesbysection{A}
\doendnotesbysection{B}
```

Note that by default inside endnotes no separator is used between the lemma and the content. However you can use the `\Xendlemmaseparator` macro to define one (7.4.2 p. 50).

As endnotes may be printed at any point in the document they always start with the page number where they are called.

`\toendnotes` **Code between endnotes** Sometimes, it is useful to insert content between endnotes of the same series: for example to separate endnotes of different sections of the same text. In this case, you could use *inside numbered text* the command:
`\toendnotes[⟨series⟩]{⟨content⟩}` where `⟨series⟩` is a comma-separated list of the series of endnotes where `⟨content⟩` must be inserted. If `⟨series⟩` is empty, then `⟨content⟩` is inserted to all the series.

For example:

```
\toendnotes{\section{Section's title}}
```

Alternatively, you can use `\Xtoendnotes{⟨content⟩}`, where “X” must be replaced by a series letter.

Remember that the endnotes are temporarily stored in an auxiliary file. That means in general you want to write the `⟨content⟩` in the auxiliary file *without expanding it*, that is without interpreting TeX content.

However, in some cases, you may want to write a once-expanded¹⁶ version of the `⟨content⟩`, that is the version where the commands are expanded on the first level. This

¹⁶The expansion mechanism of TeX is a quite complex problem, but fundamental. We have no place to explain it fully here. Read introduction to TeX to understand well.

can be, for example, to get a counter value. Use the starred version in this case. For example:

```
\Atoendnotes*{\string\section{Letter 1 (chap. \thechapter)}}
```

6.2.4 Paragraph in critical apparatus

By default, no paragraph can be made in the notes of the critical apparatus. You can allow it by adding the options `parapparatus` when loading the package :

```
\usepackage[parapparatus]{eledmac}
```

Note that you *cannot* use paragraphs (e.g. blank lines or `\par`) inside of notes, when they are set to paragraph arrangement!

6.2.5 Change lemma and line number

`\lemma` If you want to change the lemma that gets passed to the notes, you can do this by using `\lemma{<alternative>}` within the second argument to `\edtext` and before the note commands. The most common use of this command is to abbreviate the lemma that's printed in the notes. For example:

```
I am happy :
\edtext{I saw my friend          1 I am happy : I saw my friend Smith on
  \edtext{Smith}{\Afootnote{Jones 2 Tuesday.
    C, D.}} on Tuesday.}
{\lemma{I \dots\ Tuesday.}
  \Bfootnote{The date was        1 Smith] Jones C, D.
    July 16, 1954.}
}                                1-2 I... Tuesday.] The date was July 16, 1954.
```

`\linenum` You can use `\linenum{<arg>}` to change the line numbers passed to the notes. `<arg>` actually consist of seven parameters: the page, line, and sub-line number for the start of the lemma; the same three numbers for the end of the lemma; and the font specifier for the lemma. As the argument to `\linenum`, you specify those seven parameters in that order, separated by vertical bars (the `|` character). I.e.

```
\linenum{<start page>|<s. line>|<s. sub-l>|<end p.>|<e. l>|<e. sub-l>|<font>|}
```

However, you can retain the value computed by `reledmac` for any number by simply omitting it; and you can omit a sequence of vertical bars at the end of the argument. For example, `\linenum{|||23}` changes only the ending page number of the current lemma.

This command does not change the marginal line numbers in any way; it just changes the numbers passed to the notes. Its use comes in situations that `\edtext` has trouble dealing with for whatever reason. If you need notes for overlapping passages that aren't nested, for instance, you can use `\lemma` and `\linenum` to generate such notes despite the limitations of `\edtext`. If the `<lemma>` argument to `\edtext` is extremely long, you may run out of memory; here again you can specify a note with an abbreviated lemma using `\lemma` and `\linenum`. The numbers used in `\linenum` need

not be entered manually; you can use the ‘x-’ symbolic cross-referencing commands below (11 p. 62) to compute them automatically.

Similarly, being able to manually change the lemma’s font specifier in the notes might be important if you were using multiple scripts or languages. The form of the font specifier is three separate codes separated by / characters, giving the family, series, and shape codes as defined within NFSS.

6.2.6 Changing the names of commands for critical apparatus

The commands for generating the apparatus have been given rather bland names, because editors in different fields have widely divergent notions of what sort of notes are required, where they should be printed, and what they should be called. But this does not mean you have to type `\Afootnote` when you would rather type something you find more meaningful, like `\variant`.

We recommend that you create a series of such aliases and use them instead of the names chosen here; all you have to do is put commands of this form at the start of your file:¹⁷

```
\newcommandx{\variant}[2][1,usedefault]{\Afootnote[#1]{#2}}
\newcommandx{\explanatory}[2][1,usedefault]{\Bfootnote[#1]{#2}}
\newcommand{\trivial}[1]{\Aendnote{#1}}
\newcommandx{\testimonia}[2][1,usedefault]{\Cfootnote[#1]{#2}}
```

6.3 Disambiguation of identical words in the apparatus

Sometimes, the same word occurs twice (or more) in the same line. `reledmac` provides tools to disambiguate references in the critical notes. The lemma will be followed by a reference number if a given word occurs more than once in the same line.

6.3.1 Basic use

`\sameword` To use this tool, you have to mark every occurrence of the potentially ambiguous term with the `\sameword` command:

```
Lupus \sameword{aut} canis \edtext{\sameword{aut}}{\Afootnote{et}} felix
```

In this example, `aut` will be followed, in the critical note, by the exponent 2 if it is printed in the same line as the first `aut`, but it will not if it is printed in a different line. The number is printed only after the second run.

¹⁷We use `\newcommand` and `\newcommandx` instead of classical `\let` command because the `edtabular` environments have to modify the notes definition, and we need to use the newest definition of notes. Read the handbook of `xargs` to know more about `\newcommandx`.

6.3.2 Case setting

By default, `\sameword` is sensitive to the case. E.g. “foo” is considered as a different word to “Foo”.

You can use the `swcaseinsensitive` when loading the package to make `\sameword` insensitive to the case, i.e. to consider “foo” as identical “Foo”.

6.3.3 Notes about input encoding with UTF-8 processor

If you use UTF-8 processor, like \XeTeX or \LuaTeX , there should not be any glitches. However, pay attention to how characters are encoded. Similar-looking characters may be represented differently in unicode numbering.

For instance, in French, “é” has two possible Unicode codepoints:

- LATIN SMALL LETTER E (U+0065) + COMBINING ACUTE ACCENT (U+0301)
- LATIN SMALL LETTER E WITH ACUTE (U+00E9)

Which unicode number you use depends, many times, on your keyboard configuration (the computer-input system).

Inside `reledmac`, the `\sameword` command considers these two unicodes (code positions) as different characters. If you use only one unicode number consistently, the distinction will probably make no difference to how your text looks, but `\sameword` will process the text inaccurately, based on the unicode numbers. To prevent this, do the following:

- If you use \XeTeX , add this line in your preamble: `\XeTeXinputnormalization 1`.
- If you use \LuaTeX , use the `uninormalize` package of Michal Hoftich¹⁸ with the `buffer` option set to true.

With these tools, \XeTeX / \LuaTeX will dynamicaly normalize unicode input when reading the file. Consequently, you will have no problems with the `\sameword` command.

6.3.4 Notes about right-to-left texts

Due to some internal limits of \XeTeX , `\sameword` does not work with right-to-left text with this engine.

If you need to use `\sameword` with right-to-left text, you must use \LuaTeX .

6.3.5 Use with `\lemma` command

If you use the `\lemma` command, `reledmac` cannot know to which occurrence of `\sameword` in the first argument of `\edtext` a word marked with `\sameword` in `\lemma` should refer.

For example, in the following example:

¹⁸<https://github.com/michal-h21/uninormalize>.

```

some thing
  \edtext{\sameword{sw}
    and other \sameword{sw}
    and again \sameword{sw}
    it is all}%
  {\lemma{\sameword{sw} \ldots all}\Afootnote{critical note}}}%

```

reledmac cannot know if the “sw” in `\lemma` refers to the word after “thing”, after “other”, or after “again”.

Consequently, you must tell reledmac to which instance of `\sameword` you are referring in the first argument of `\edtext`:

- In the content of `\lemma`, use `\sameword` with no optional argument.
- In the first argument of `\edtext`, use `\sameword` with the optional argument `[\langle X \rangle]`. $\langle X \rangle$ is the depth of the `\edtext` where the `\lemma` is used. So if the `\lemma` is called in a `\edtext` inside another `\edtext`, $\langle X \rangle$ is equal to 2. If the `\lemma` is called in a `\edtext` “of first level”, $\langle X \rangle$ is equal to 1. If the lemma is called in both 1 and 2 `\edtext` depth, $\langle X \rangle$ is 1,2. If that word is referenced in the lemma of every `\edtext` depth, $\langle X \rangle$ can also be set to `inlemma`.

Note that only words that are actually referenced in a `\lemma` need the optional argument. Therefore, the first `\sameword` in the example above should have “1” as its optional argument, to be referenced correctly in the lemma.

Note also that the $\langle X \rangle$ does not refer to the level where the `\sameword` occurs, but to the level of the `\lemma` that refers to that `\sameword`. For example:

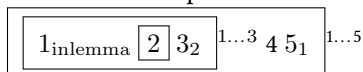
```

\edtext{some \edtext{\sameword[1]{word}}{\Afootnote{om. M}}
  and other \sameword{word}
  and again a \sameword{word}
  it is all}%
}{\lemma{some \sameword{word} \ldots all}\Afootnote{critical note}}}%

```

Here the `\sameword` occurs in an `\edtext` of level 2, but since it is referenced by `\lemma` on level 1, it has “1” in the optional argument.

In the following example figure, each framed box represents an `\edtext` level. Each number is an occurrence of `\sameword`. After a framed box, the text in superscript represents the content of `\lemma` for that `\edtext` level. The text in subscript at the right of a number represents the content of the optional argument of `\sameword`.



The `\sameword` number 3 is called in a `\lemma` related to an `\edtext` of level 2. It must be marked by “2”.

The `\sameword` number 5 is called in a `\lemma` related to `\edtext` of level 1. It must be marked by “1”.

The `\sameword` number 1 is called in two `\lemmas`: one related to a `\edtext` of level 1, the other related to `\edtext` of level 2. It must be marked by “1,2”. However, as `\lemma` is called only in level 1 and 2, “1,2” could be replaced by “inlemma”.

The `\sameword` number 2 is in the first argument of a `\edtext` of level 3, but it has no `\lemma-command`, so there is no need to mark it.

Here, the corresponding code:

```
\edtext{%
  \edtext{%
    \sameword[inlemma]{A} (1)
    \edtext{%
      \sameword{A} (2)
    }%
  }%
  \Afootnote{level~3}%
}
\sameword[2]{A} (3)
}%
{
  \lemma{%
    \sameword{A}%
    \ldots%
    \sameword{A}%
  }%
  \Afootnote{level~2}%
}%
\sameword{A} (4)
\sameword[1]{A} (5)
}%
{
  \lemma{\sameword{A}\ldots\sameword{A}}%
  \Afootnote{level~1}%
}
```

1 A (1) A (2) A (3) A (4) A (5)

1 A¹...A⁵] level 1

1 A¹...A³] level 2

1 A² (2)] level 3

6.3.6 Sameword for a group of words

Sometimes a group of words and not only a single word, occurs multiple times. In this case, you have two possibilities.

First, you can consider only the individual words, and not groups of word. For example:

```
\sameword{per} \sameword{causam}
tamen scire
\edtext{\sameword{causam}}{\Bfootnote{fnote}}
est
\edtext{\sameword{per} \sameword{causam}}{\Bfootnote{causam rei B}}
cognoscere
\edtext{\sameword{causam}}{\Bfootnote{fnote}}
```

1 per causam tamen scire causam est per causam cognoscere causam

1 causam²] fnote

1 per² causam³] causam rei B

1 causam⁴] fnote

In this case it is clear which “per causam” is meant.

However, in the case that “per causam” is the lemma of the second note, there should be only one number for that whole lemma. In this case we can mark all “per causam” groups. But as “causam” is also called as lemma in note 1 and 3, we need to use nested `\sameword` commands. Consequently, we need to use `\lemma` for the `\edtext` linked to “per causam”, as we don’t want to number each individual word.

```
\sameword{per \sameword{causam}} tamen scire
\edtext{\sameword{causam}}{\Bfootnote{fnote}} est
\edtext{\sameword[1]{per \sameword{causam}}}{\lemma{\sameword{per causam}}\Bfootnote{causam rei B}} cog
\edtext{\sameword{causam}}{\Bfootnote{fnote}}
```

1 per causam tamen scire causam est per causam cognoscere causam

1 causam²] fnote

1 per causam²] causam rei B

1 causam⁴] fnote

6.3.7 Customizing

`\showwordrank` You can redefine the `\showwordrank` macro to change the way the number is printed. The default value is

```
\newcommand{\showwordrank}[2]{%
  #1\textsuperscript{#2}%
}
```

6.3.8 Problems with some macros

`\swnoexpands` Macros inside `\sameword` that are not fully expandable, mainly macros which manipulate font features, write on full or have optional argument, may cause problems during compilation. Custom commands inside `\sameword` may therefore result in errors saying that “Use of `sameword` doesn’t match its definition.” To solve this, include a redefinition of your custom commands in the `\swnoexpands` macro. In order to not include any content of a macro during comparison, identify the command with `\@gobble`. For example:

```
\makeatletter
\appto{\swnoexpands}{%
  \let\somemacro\@gobble%
}
\makeatother
```

This will drop the content of `\somedmacro` during comparison.

To include the content of the first and only one argument of a custom command in sameword comparison, use the `\@firstofone` command. For example, this is how `\emph` is handled:

```
\makeatletter
\appto{\swnoexpands}{%
  \let\emph\@firstofone%
}
\makeatother
```

To include command which can take optional argument, use `\RenewExpandableDocumentCommand` of `\xparse`. For example, this is how `\edindex` is handled:

```
\makeatletter
\appto{\swnoexpands}{%
  \RenewExpandableDocumentCommand{\edindex}{om}{}%
}
\makeatother
```

6.3.9 Automatic sameword annotation

All potentially ambiguous apparatus entries must be annotated manually. That annotation process is laborious and includes a risk of errors. *Samewords* is a Python script that can automate this step of the process. It can be installed via the *Python Package Index*, but see <https://github.com/stenskjær/samewords> for more info and documentation. The script is still at a beta stage, so comments and questions as well as error reports are very welcome at <https://github.com/stenskjær/samewords/issues>.

Please note that the maintainer of this script is not identical with the maintainer of *reledmac*.

6.4 Apparatus of manuscripts

The critical notes mostly refer to textual variants between manuscripts which contain the text to be edited. It may so happen that the manuscripts only contain parts of the text. Depending on one's wishes, *reledmac* can generate lists of relevant manuscripts for any delimited portion of text. Such lists are referred to as "apparatuses of manuscripts".

To produce an apparatus of manuscripts with *reledmac*, you have to insert specific commands that are used to mark the sections for which only part of the manuscripts are relevant. These commands will be processed, and **after the second \TeX run**, corresponding apparatuses of manuscripts will be inserted in the first (viz. 'A' series) level of footnotes.

As the insertion of this apparatus can change the page breaks, you may have to run \TeX two or more times. We strongly recommend to use tools like *latexmk* to do that.

6.4.1 Marking sections of text

`\msdata` `\msdata{⟨text⟩}` must be inserted at the point where a section for which only part of the manuscripts are relevant starts. `⟨text⟩` can be any arbitrary text, viz. a list of the manuscripts that are used for the section that starts. The command must be attached right at the point where the section starts, with no space, like so:

```
\msdata{ABC}Lorem ipsum
```

Which means that the section of text starting by “Lorem ipsum” is witnessed by manuscripts A, B and C.

`\stopmsdata` `\stopmsdata` must be inserted at the point where the section of text previously marked by `\msdata` ends. The command must be attached right to the end of the section, with no space. As `\stopmsdata` is a \LaTeX argumentless macro, it will gobble the following space. To keep that space, you have to either append a backslash followed by a space or `{}` to `\stopmsdata`, like so:

```
\msdata{ABC}Lorem ipsum dolor
[...]
amet\stopmsdata{} \msdata{ABCD}sic transit [...]
```

Which means that the part of text containing “Lorem ipsum dolor [...] amet” is witnessed by manuscripts A, B and C, while the part of text starting “sic transit” is witnessed by manuscripts A, B, C and D.

`\stopmsdata` is also automatically inserted by `\msdata`.

Note that in most cases, any `\stopmsdata` is followed by `\msdata`. However, as these two command are usually separated by a space, it may happen that a line break be automatically inserted between them. This is why it is advised to always insert `\stopmsdata`, even if `\msdata` inserts it in case it is forgotten.

6.4.2 Layout of the apparatus of manuscripts

On every page, the apparatus of manuscripts marks the corresponding section with starting and ending line numbers. However, the following rules will be applied:

- If the section does not start on the current page, the starting line number will be the line number of the first line on the page.
- If the section does not stop on the current page, the ending line number will be the line number of the last line on the page.
- If the section neither starts nor ends on the current page, no line number will be printed. The same is true in case both `\msdata` is called at the very beginning of the page and `\endmsdata` is called at the very end of the page.

6.4.3 Settings

As the apparatus of manuscripts technically consists of first-level critical notes (‘A’ series), any setting available for critical notes can be applied (7 p. 43). However, the following *additional* commands are available.

<code>\setmsdataseries</code>	The series used by default for the apparatus of manuscripts is series A. However, you can change it with <code>\setmsdataseries{<series>}</code> .
<code>\setmsdatalabel</code>	As the apparatus of manuscripts consists of regular critical footnotes, a lemma is associated to them. By default, it is “Ms.”. You can change it using <code>\setmsdatalabel{<txt>}</code> .
<code>\setmsdataposition</code>	If you want the manuscript apparatus to be on the same level of critical footnotes as the other apparatuses, for each line, reledmac will first insert the manuscript apparatus, then the other footnotes. You can change it using: <code>\msdataposition{regular-msdata}</code> And restore the default behaviour using <code>\msdataposition{msdata-regular}</code>

6.5 Familiar notes

6.5.1 Basic use

<code>\footnoteA</code>	As well as the standard L ^A T _E X footnotes generated via <code>\footnote</code> , the package also provides five series of additional footnotes called <code>\footnoteA</code> through <code>\footnoteE</code> . These have the familiar marker in the text, and the marked text at the foot of the page can be formatted using any of the styles described for the critical footnotes. Note that the ‘regular’ footnotes have the series letter at the end of the macro name whereas the critical footnotes have the series letter at the start of the name.
<code>\footnoteB</code>	
<code>\footnoteC</code>	
<code>\footnoteD</code>	
<code>\footnoteE</code>	

The footnote can take a first optional argument to manually define the footnote number or footnote symbol. For example:

```
\footnoteA[22]{This footnote will be numbered 22}
```

6.5.2 Customizing mark

<code>\thefootnoteA</code>	Each series uses a set of macros for styling the marks. The mark numbering scheme of series A is defined by the <code>\thefootnoteA</code> macro; the default is: <code>\renewcommand*{\thefootnoteA}{\arabic{footnoteA}}</code> The appearance of the mark in the text is controlled by <code>\bodyfootmarkA</code> which is defined as: <code>\newcommand*{\bodyfootmarkA}{%</code> <code>\hbox{\textsuperscript{\normalfont\@nameuse{@thefnmarkA}}}</code> The command <code>\footfootmarkA</code> controls the appearance of the mark at the start of the footnote text. It is defined as: <code>\newcommand*{\footfootmarkA}{\textsuperscript{\@nameuse{@thefnmarkA}}}</code> There are similar command triples for the other series.
<code>\bodyfootmarkA</code>	
<code>\footfootmarkA</code>	

6.5.3 Separator for multiple footnotes

The `footmisc` package [Fai03] by Robin Fairbairns has an option whereby sequential footnote marks in the text can be separated by commas^{3,4} like so. As a convenience `reledmac` provides this automatically.

`\multfootsep` `\multfootsep` is used as the separator between footnote markers. Its default definition is:
`\providecommand*\multfootsep{\normalfont,}`
 and can be changed if necessary.

6.6 Printing the footnote mark without printing the footnote text

`\footnoteXmark` `\footnoteXtext` In certain cases, you can't directly use `\footnoteX`; for example, when using `\uline` command of the `ulem` package. You need to print the footnote mark first, then call the footnote text to be inserted.

For all $\langle X \rangle$ command, `reledmac` provides a `\footnote\langle X \rangle mark` command and a `\footnote\langle X \rangle text` command, equivalent to standard \LaTeX 's command `\footnotemark` and `\footnotetext`. For example, to use with `\uline`, do:

```
This is \uline{a test containing\mbox{\footnoteAmark}}\footnoteAtext{A
simple footnote.}\uline{ a simple footnote.}
```

If you use `reledpar`, you can't use these two commands to print the footnote mark on one side and the footnote text on the other side.

You must use `\footnote\langle X \rangle nomk` and `\footnote\langle X \rangle mk`, defined in `reledpar` (?? p. ??)

6.7 Changing series

6.7.1 Create a new series

If you need more than five series of critical footnotes, you can create extra series, using `\newseries` command. For example, to create F and G series `\newseries{G,H}`.

6.7.2 Delete series

As the number of series which are defined increases, `reledmac` gets slower. If you do not need all of the six standard series (A–E), you can load the package with the `series` option. For example, if you need only series A and B, use:

```
\usepackage[series={A,B}]{eledmac}
```

6.7.3 Series order

The default series order is the one called with the `series` option of the package, or, if this option is not used, A, B, C, D, E. Series order determines footnotes order.

`\seriesatbegin` However in some specific cases, you need to change the series order at some point
`\seriesatend` inside the document. You can use `\seriesatbegin{⟨s⟩}` to pull up a given series `⟨s⟩` to
the beginning, or `\seriesatend{⟨s⟩}` to push it down to the end.

6.8 Position of critical and familiar footnotes

`\fnpos` There is a historical incoherence in (r)(e)ledmac. The familiar footnotes are before
`\mpfnpos` the critical footnotes in a normal page, but after in a minipage or in a ledgroup. However,
it is possible to change the relative position of both types of footnotes. If you want to
have familiar footnotes after critical footnotes in a normal page, use:

```
\fnpos{critical-familiar}
```

Or, if you want a minipage or ledgroup to have critical footnotes after familiar footnotes,
use:

```
\mpfnpos{familiar-critical}
```

You can also decide to alternate familiar and critical footnotes with your own order.
In this case, the second argument of `\fnpos` or `\mpfnpos` is a comma-separated list of
values. Each value has the following form:

`⟨series⟩⟨type⟩`

`⟨series⟩` is a series letter (A,B,C etc.), while `⟨type⟩` must be either “critical” or “familiar”.

For example, suppose you want to first print the familiar footnotes of the “A” series,
then all the series of critical footnotes, and finally all the series of familiar footnotes,
except the “A” series. In this case, use the following command:

```
\fnpos{%
  {A}{familiar},
  {A}{critical},%
  {B}{critical},%
  {C}{critical},%
  {D}{critical},%
  {E}{critical},%
  {B}{familiar},%
  {C}{familiar},%
  {D}{familiar},%
  {E}{familiar}%
}
```

Note that you must define the position of all the series of footnotes you use. If you don’t,
you will have infinite runs of \TeX .

7 Apparatus customization

Some commands can be used to change the display of the footnotes. All can have an optional argument [*s*], which is the letter of the series — or a list of letters separated by comma — depending on which option is applied. If the optional argument is omitted or empty, the setting will apply to the entire series.

When a length, noted $\langle l \rangle$, is used, it can be stretchable: *a* plus *b* minus *c*. The final length *m* is calculated by L^AT_EX to have: $a - c \leq m \leq a + b$. If you use some relative unit¹⁹, it will be relative to font size of the footnote, except for commands concerning the place kept by the notes — including blank space.

Some commands are boolean, indicating when an option is enabled. If you want to disable the option after enabling it, you must use `[false]` as the second optional argument. For example:

- `\XX[A][false]` to disable the ‘XX’ option for the series A.
- `\XX[] [false]` to disable it for all series.

There is also name convention:

- Names prefixed by X are for setting of critical footnotes.
- Names prefixed by Xend are for setting of critical endnotes.
- Names suffixed by X are for setting of familiar footnotes.

7.1 Notes arrangement in a series

`\Xarrangement`
`\arrangementX`

By default, all footnotes are formatted as a series of separate paragraphs in one column. Three other formats are also available for notes.

Use `\Xarrangement[\langle s \rangle]{\langle a \rangle}` to change the arrangement of the $\langle s \rangle$ series of critical footnotes and `\arrangementX[\langle s \rangle]{\langle a \rangle}` to change the arrangement of the $\langle s \rangle$ series of familiar footnotes.

The value of $\langle a \rangle$ can be one of the following

- `paragraph` formats all of the footnotes of a series as a single paragraph; if you use this arrangement, you are strongly encouraged to read 19.1.6 p. 79.
- `twocol` formats them as separate paragraphs, but in two columns;
- `threecol`, in three columns.
- `normal`, restore normal arrangement.

You should set up the page layout parameters, and in particular the `\baselineskip` of the footnotes, before you call this macro because its action depends on these; too much or too little space will be allotted for the notes on the page if these macros use the wrong values.

¹⁹Like `em` which is the width of an ‘m’ in a given font.

Note that you *cannot* use paragraphs (e.g. blank lines or `\par`) or line breaks (`\break` or `\linebreak` or `\newline` etc.) inside of notes, when they are set to paragraph arrangement!

The notes arrangement must be called after having defined the document geometry setting. If you must change geometry setting inside your document, do not forget to call note arrangement again.

`\hsize` has been set for the pages that use this series of notes; otherwise \TeX will try to put too many or too few of these notes on each page. If you need to change the `\hsize` within the document, call the arrangement macro again afterwards to take account of the new value.

7.2 Control line number printing

7.2.1 Print line number only at first time

`\Xnumberonlyfirstinline`

By default, the line number is printed inside every note. If you want to print it only the first time for a given line number (i.e., once for line 1, once for line 2, etc.), you can use `\Xnumberonlyfirstinline[⟨s⟩]`.

`\Xnumberonlyfirstintwolines`

Suppose you have a lemma on line 2 and a lemma between line 2 and line 3. With `\Xnumberonlyfirstinline`, the second lemma is considered to be on the same line as the first lemma. But if you use both `\Xnumberonlyfirstinline[⟨s⟩]` and `\Xnumberonlyfirstintwolines[⟨s⟩]`, a distinction is made.

`\Xsymlinenum`

For setting a particular symbol in place of the line number, you can use `\Xsymlinenum[⟨s⟩]{⟨symbol⟩}` in combination with `\Xnumberonlyfirstinline[⟨s⟩]`. From the second lemma of the same line, the symbol will be used instead of the line number. Note that any command called in `⟨symbol⟩` must be robust. Use `\robustify` to robustify a non-robust command.

`\Xendnumberonlyfirstinline`

`\Xendnumberonlyfirstintwolines`

`\Xendsymlinenum`

For endnotes, `\Xendnumberonlyfirstinline`; `\Xendnumberonlyfirstintwolines` and `\Xendsymlinenum` are the equivalents of `\Xnumberonlyfirstinline`; `\Xnumberonlyfirstintwolines` and `\Xsymlinenum`.

7.2.2 Print line number annotation only the first time

`\Xlinenumannotationonlyfirst`

By default, the line number annotation (5.5 p. 25) is printed in every note. If you want to print it only the first time for a given annotation you can use `\Xlinenumannotationonlyfirst[⟨s⟩]`.

Note the two following points:

- If you use the `noresetlinenumannotation` option of `reledmac`, the `\Xlinenumannotationonlyfirst` won't take account of the official line number.
- The `\Xlinenumannotationonlyfirst` works for consecutive lemmas with the same annotation. That is, if you have for example a lemma with an A annotation, then a lemma with a B annotation, then a lemma with an A annotation, each lemma will have its own annotation in the apparatus.

`\Xlinenumannotationonlyfirstintwo`

Suppose you have a lemma on annotation 1 and a lemma between annotation 1 and annotation 3. With `\Xlinenumannotationonlyfirst`, the second lemma is considered to have the same annotation as the first lemma. But if you use both

`\Xlinenumannotationonlyfirst[⟨s⟩]` and `\Xlinenumannotationonlyfirstintwo[⟨s⟩]`, a distinction is made.

`\Xsymlinenumannotation`

To use a particular symbol in place of the line number annotation, you can use `\Xsymlinenumannotation[⟨s⟩]{⟨symbol⟩}` in combination with `\Xlinenumannotationonlyfirst[⟨s⟩]`. From the second lemma with the same line number annotation, the symbol will be used instead of the annotation. Note that any command called in `⟨symbol⟩` must be robust. Use `\robustify` to robustify a non-robust command.

`linenumannotationonlyfirst`

`enumannotationonlyfirstintwo`

`\Xendsymlinenumannotation`

For endnotes, `\Xendlinenumannotationonlyfirst`; `\Xendlinenumannotationonlyfirstintwo` and `\Xendsymlinenumannotation` are the equivalents of `\Xlinenumannotationonlyfirst`; `\Xlinenumannotationonlyfirstintwo` and `\Xsymlinenumannotation`.

7.2.3 Print page number only at first time

For endnotes, `reledmac` provides a mechanism for printing the page number only the first time it is seen. However, when a lemma spans over two pages, the line numbers are normally printed in the following pattern: starting page number - starting line number - ending page number - ending line number. It follows that what corresponds to the actual ‘page number’ may not be self-evident. So: `\Xendpagenumberonlyfirst[⟨s⟩]` can be called to ensure that the starting page number of a lemma be not printed if it is the same as the ending page number of the preceding lemma. You can use *additionally* one (and only one) of the following commands:

`\Xendpagenumberonlyfirst`

- `\Xendpagenumberonlyfirstifsingle[⟨s⟩]`: the first page number of the lemma will not be printed only if the following conditions are true:
 1. The starting page number of the lemma is the same as the ending page number of the preceding lemma.
 2. The ending page number of the lemma is the same as the starting page number of the lemma.

In this case the ending page number will always be printed if it is different from the starting page number.

- `\Xendpagenumberonlyfirstintwo[⟨s⟩]`: both the starting page number and the ending page number of a lemma are not printed if they are both the same as the starting page number and the ending page number of the preceding lemma respectively.

In any case, you can use:

`\Xendsympagenum`

- `\Xendsympagenum[⟨series⟩]{⟨c⟩}` to print `⟨c⟩` when the page number is not printed.

`\Xendinplaceofpagenumber`

- `\Xendinplaceofpagenumber[⟨series⟩]{⟨l⟩}` to print a `⟨l⟩` length horizontal space in case no symbol is printed instead of the page number.

7.2.4 Arbitrary text before line number

`\Xtxtbeforenumber` `\Xtxtbeforenumber[⟨s⟩]{⟨txt⟩}` allows the insertion of `⟨txt⟩` before the line number only when the line number is printed, so taking into account `\Xnumberonlyfirstinline` and the like.

`\Xendbeforepagenumber` **For endnotes** `\Xendbeforepagenumber[⟨s⟩]{⟨text⟩}` defines the text before the page number in endnotes. Default value is p. (“p” followed by a dot).

`\Xendafterpagenumber` `\Xendafterpagenumber[⟨s⟩]{⟨text⟩}` defines the text after the page number in endnotes. Default value is) (open parenthesis followed by a single space). `\Xendlineprefixsingle[⟨s⟩]` defines the text before the line number in endnotes when there is only one line. Default value is empty. `\Xendlineprefixmore[⟨s⟩]{⟨text⟩}` defines the text before the line number in endnotes when there is more than one line. Default value is empty. If you don’t define it, it will use the value defined by `\Xendlineprefixsingle`.

7.2.5 Separator for line range

`\Xlinerangeseparator` By default, the separator between the begin line and the end line in a lines’ range is an en-dash in a normal font (`\textnormal{--}`). You can change it for critical footnotes with `\Xendlinerangeseparator[⟨s⟩]{⟨text⟩}`, and with `\Xendlinerangeseparator[⟨s⟩]{⟨text⟩}` for critical endnotes.

7.2.6 Abbreviate line range

`\Xtwolines` If a lemma is printed on two subsequent lines, `reledmac` will print the first and the last line numbers. Instead of this, it is also possible to print an abbreviation which stands for “line 1 and subsequent line(s)”.

To achieve this, use `\Xtwolines[⟨s⟩]{⟨text⟩}` and `\Xmorethantwolines[⟨s⟩]{⟨text⟩}`. The `⟨text⟩` argument of `\Xtwolines` will be printed if the lemma is on two lines, and the `⟨text⟩` argument of `\Xmorethantwolines` will be printed if the lemma is on three or more lines. For example:

```
\Xtwolines{sq.}
\Xmorethantwolines{sq.}
```

will print “1sq.” for a lemma which falls on lines 1–2 and “1sq.” for a lemma which falls on lines 1–4.

If you use `\Xtwolines` without setting `\Xmorethantwolines`, the `⟨text⟩` argument of `\Xtwolines` will be used for lemmas which fall on three or more lines.

However, if you want to use a short form (when the lemma overlaps two lines, but not more than two), use `\Xtwolinesbutnotmore[⟨series⟩]`.

When you use lineation by page, the final page number, if different from the initial page number, will not be printed, because the final page number is included in the `\Xendtwolines` symbol.

`\Xtwolinesonlyinsamepage` However, you can force print the final page number with `\Xtwolinesonlyinsamepage[⟨series⟩]`.

You can disable `\Xtwolines` and related for a specific note by using the ‘[fullines]’ argument in the note macro cf. 6.2.2 p. 30.

For endnotes, use these macros: `\Xendtwolines`; `\Xendmoreethantwolines`; `\Xendtwolinesbutnotmore`; `\Xendtwolinesonlyinsamepage` instead of `\Xtwolines`; `\Xmoreethantwolines`; `\Xtwolinesbutnotmore`; `\Xtwolinesonlyinsamepage`.

7.2.7 Disable line number

`\Xnonumber` You can use `\Xnonumber[⟨s⟩]` if you do not want to have the line number in a footnote.
`\Xendnonumber` `\Xendnonumber[⟨s⟩]` is the same for endnote.

7.2.8 Printing pstart number

`\Xpstart` You can use `\Xpstart[⟨s⟩]` if you want to print the pstart number in the footnote, before the line and subline number. Note that when you change the lineation system, the option is automatically switched :

- If you use lineation by pstart, the option is enabled.
- If you use lineation by section or by page, the option is disabled.

`\Xpstarteverytime` By default, the pstart number is printed only in the part of text where you have called `\numberpstarttrue`. We don’t know why you would like to print the pstart number in the notes and not in the main text. However, if you want to do it, you can call `\Xpstarteverytime[⟨s⟩]`. In this case, the pstart number will be printed every time in footnote.

`\Xonlypstart` In combination with `\Xpstart`, you can use `\Xonlypstart[⟨s⟩]` if you want to print only the pstart number in the footnote, and not the line and subline number.

7.2.9 Printing stanza number

`\Xstanza` You can use `\Xstanza[⟨s⟩]` if you want to print the stanza number in the footnote, before the line and subline number.

Of course the stanza number is printed only when you use `\numberstanza`

`\Xstanzaseparator` When using `\Xstanza`, you can use `\Xstanzaseparator[⟨s⟩]{⟨text⟩}` to print `⟨text⟩` after the stanza number. Default value is empty.

7.2.10 Separator between line and subline numbers

`\Xsublinesep` `\Xsublinesep[⟨s⟩]{⟨txt⟩}` changes the separator between line and subline in footnotes.

Employed without optional argument, it also changes the separator in side numbering.

`\Xendsublinesep` `\Xendsublinesep[⟨s⟩]{⟨txt⟩}` does the same thing for endnotes.

However, it does not change anything for the separator in side numbering. Use `\Xsublinesep` without optional argument or `\Xsublinesepside{<txt>}` to do it.

The default value is `\textnormal{.}`.

7.2.11 Separator between page and line numbers

`\Xpagelinesep` `\Xpagelinesep[<s>]{<txt>}` changes the separator between the page and line number in footnotes.

By default, the value defined for `\Xsublinesep` is used.

7.2.12 Space around number

`\Xbeforenumber` With `\Xbeforenumber[<s>]{<l>}`, you can add some space before the line number in a footnote. If the line number is not printed, the space is not either. The default value is 0 pt.

`\Xafternumber` With `\Xafternumber[<s>]{<l>}` you can add some space after the line number in a footnote. If the line number is not printed, neither is the space. The default value is 0.5 em.

`\Xendbeforenumber` `\Xendafternumber` and `\Xendafternumber` are the equivalents of `\Xbeforenumber` and `\Xafternumber` for endnotes.

`\Xnonbreakableafternumber` By default, the space defined by `\Xafternumber` is breakable. With `\Xnonbreakableafternumber[<s>]{<l>}` it becomes nonbreakable.

7.2.13 Space around line symbol

`\Xbeforesymmlinenum` With `\Xbeforesymmlinenum[<s>]{<l>}` you can add some space before the line symbol in a footnote. The default value is value set by `\Xbeforenumber`.

`\Xaftersymmlinenum` With `\Xaftersymmlinenum[<s>]{<l>}` you can add some space after the line symbol in a footnote. The default value is value set by `\Xafternumber`.

`\Xendbeforesymmlinenum` `\Xendaftersymmlinenum` and `\Xendaftersymmlinenum` are the equivalents of `\Xbeforesymmlinenum` and `\Xaftersymmlinenum` for the endnotes.

7.2.14 Space in place of number

`\Xinplaceofnumber` If no number or symbolic line number is printed, you can add a space, with `\Xinplaceofnumber[<s>]{<l>}`. The default value is 1 em.

`\Xendinplaceofnumber` `\Xendinplaceofnumber[<s>]{<l>}` is the same, for critical endnotes.

7.2.15 Boxing line number and line symbol

`\Xboxlinenum` It could be useful to put the line number inside a fixed box: the content of the note will be printed after this box. You can use `\Xboxlinenum[<s>]{<l>}` to do that. To subsequently disable this feature, use `\Xboxlinenum` with length equal to 0 pt. One use of this feature is to print line number in a column, and the note in an other column:

```
\Xhangindent{1em}
\Xafternumber{0em}
```

`\Xboxlinenum{1em}`

`\Xboxsymlinenum` `\Xboxsymlinenum[⟨s⟩]{⟨l⟩}` is the same as `\Xboxlinenum` but for the line number symbol.

`\Xendboxsymlinenum` `\Xendboxsymlinenum[⟨s⟩]{⟨l⟩}` is the same as `\Xboxsymlinenum` but for endnotes.

`\Xboxlinenumalign` If you put line number in box, it will be aligned left inside the box. However, you can change it using `\Xboxlinenumalign[⟨s⟩]{⟨text⟩}` where `⟨text⟩` can be the following:

L to align left (default value);

R to align right;

C to center.

When using `\Xboxlinenum`, `reledmac` put all the line number description in the same box. That is, the same box will contain: the start line number, the dash, and either the end line number or the range symbol (like `ff.`). However, it is possible to box them in two different boxes.

- `\Xboxstartlinenum[⟨s⟩]{⟨l⟩}` will box the start line number in a box of length `⟨l⟩`. The content will be put at the right of the box.
- `\Xboxendlinenum[⟨s⟩]{⟨l⟩}` will box the dash plus the end line number or the range symbol in a box of length `⟨l⟩`. The content will be put at the left of the box.

With these two commands, it is possible to horizontally align the dash of line number when using critical notes, to obtain something like:

```
1
12-23
24ff.
```

`\Xendboxlinenum` `\Xendboxlinenum[⟨s⟩]{⟨l⟩}`, `\Xendboxlinenumalign[⟨s⟩]{⟨text⟩}`, `\Xendboxstartlinenum[⟨s⟩]{⟨l⟩}`,
`\Xendboxlinenumalign` `\Xendboxendlinenum[⟨s⟩]{⟨l⟩}` are the same as, respectively, `\Xboxlinenum` and
`\Xendboxstartlinenumalign` `\Xboxlinenumalign`, `\Xboxstartlinenum`, `\Xboxendlinenum` except in endnotes.
`\Xendboxendlinenumalign`

7.3 Arbitrary code around line number

`\Xendbhooklinenumber` `\Xendbhooklinenumber[⟨s⟩]{⟨code⟩}` is used to execute code before line numbers in endnotes. The code is executed before the `\Xendbeforelinenumber` space and before the `\Xendnotenumfont` font setting.

`\Xendahooklinenumber` `\Xendahooklinenumber[⟨s⟩]{⟨code⟩}` is used to execute code after line number in endnotes. The code is executed after the `\Xendafternumber` space.

`\Xendbhookinplaceofnumber` `\Xendbhookinplaceofnumber[⟨s⟩]{⟨code⟩}` is used to execute code before space or symbol which replace line number in endnotes. The code is executed before the `\Xendbeforesymlinenum` space and before the `\Xendnotenumfont` font setting.

`\Xendahookinplaceofnumber` `\Xendahookinplaceofnumber[⟨s⟩]{⟨code⟩}` is used to execute code after space or symbol which replace line number in endnotes. The code is executed after the `\Xendaftersymlinenum` space.

7.4 Separator between the lemma and the note

7.4.1 For footnotes

`\Xlemmaseparator` By default, in a footnote, the separator between the lemma and the note is a right bracket (`\rbracket`)²⁰. You can use `\Xlemmaseparator[⟨s⟩]{⟨Xlemmaseparator⟩}` to change it. The optional argument can be used to specify the series in which it is used. Note that there is a non-breakable space between the lemma and the separator, but a **breakable** space between the separator and the following text.

`\Xbeforelemmaseparator` Using `\Xbeforelemmaseparator[⟨s⟩]{⟨l⟩}` you can add some space between lemma and separator. If your lemma separator is empty, this space won't be printed. The default value is 0 em.

`\Xafterlemmaseparator` Using `\Xafterlemmaseparator[⟨s⟩]{⟨l⟩}` you can add some space between separator and note. If your lemma separator is empty, this space will not be printed. The default value is 0.5 em.

`\Xnolemmaseparator` You can suppress the lemma separator, using `\Xnolemmaseparator[⟨s⟩]`, which is simply a alias of `\Xlemmaseparator[⟨s⟩]{}`.

`\Xinplaceoflemmaseparator` With `\Xinplaceoflemmaseparator[⟨s⟩]{⟨l⟩}` you can add a space if no lemma separator is printed. The default value is 1 em.

7.4.2 For endnotes

`\Xendlemmaseparator` By default, there is no separator inside endnotes between the lemma and the content of the note. You can use `\Xendlemmaseparator[⟨s⟩]{⟨Xendlemmaseparator⟩}` to change this. The optional argument can be used to specify the series in which it is used. A common value of `⟨Xendlemmaseparator⟩` is `\rbracket`.

Note that there is a non-breakable space between the lemma and the separator, but a **breakable** space between the separator and the following text.

`\Xendbeforelemmaseparator` Using `\Xendbeforelemmaseparator[⟨s⟩]{⟨l⟩}` you can add some space between the lemma and the separator. If your lemma separator is empty, this space won't be printed. The default value is 0 em.

`\Xendafterlemmaseparator` Using `\Xendafterlemmaseparator[⟨s⟩]{⟨l⟩}` you can add some space between the separator and the content of the note. If your lemma separator is empty, this space won't be printed. The default value is 0.5 em.

`\Xendinplaceoflemmaseparator` With `\Xendinplaceoflemmaseparator[⟨s⟩]{⟨l⟩}` you can add some space if you choose to remove the lemma separator. The default value is 0.5 em.

7.5 Font style

7.5.1 For line number

`\Xnotenumfont` `\Xnotenumfont[⟨s⟩]{⟨command⟩}` is used to change the font style for line numbers in critical footnotes ; `⟨command⟩` must be one (or more) switching command, like `\bfseries`.

`\Xendnotenumfont` `\Xendnotenumfont[⟨s⟩]{⟨command⟩}` is used to change the font style for line

²⁰For polyglossia, when the lemma is RTL, the bracket automatically switches to a left bracket.

numbers in critical footnotes. $\langle command \rangle$ must be one (or more) switching command, like `\bfseries`.

`\notenumfontX` $\notenumfontX[\langle s \rangle]\{\langle command \rangle\}$ is used to change the font style for note numbers in familiar footnotes. $\langle command \rangle$ must be one (or more) switching command, like `\bfseries`.

7.5.2 For the lemma

`\lemmadisablefontselection` By default, font of the lemma in footnote is the same as font of the lemma in the main text. For example, if the lemma is in italic in the main text, it is also in italic in note. The `\Xlemmadisablefontselection[\langle s \rangle]` command allows to disable it for a specific series.

`\lemmadisablefontselection` By default, font of the lemma in endnote is the same as font of the lemma in the main text. For example, if the lemma is in italic in the main text, it is also in italic in note. The command allows `\Xendlemmadisablefontselection[\langle s \rangle]` to disable it for a specific series.

`\Xlemmafont` Use `\Xlemmafont[\langle s \rangle]\{\langle cmd \rangle\}` to apply a \TeX font command to the lemma. For example, to have boldface lemma:

`\Xendlemmafont`

```
\Xlemmafont{\bfseries}
```

`\Xendlemmafont[\langle s \rangle]\{\langle cmd \rangle\}` is the same for endnotes.

7.5.3 For all notes

`\Xnotefontsize` `\Xnotefontsize[\langle s \rangle]\{\langle command \rangle\}` is used to define the font size of critical footnotes of the series. The default value is `\footnotesize`. The $\langle command \rangle$ must not be a size in pt, but a standard \TeX size, like `\small`.

`\notefontsizeX` `\notefontsizeX[\langle s \rangle]\{\langle command \rangle\}` is used to define the font size of familiar footnotes of the series. The default value is `\footnotesize`. The $\langle command \rangle$ must not be a size in pt, but a standard \TeX size, like `\small`.

`\Xendnotefontsize` `\Xendnotefontsize[\langle s \rangle]\{\langle l \rangle\}` is used to define the font size of end critical footnotes of the series. The default value is `\footnotesize`. The $\langle command \rangle$ must not be a size in pt, but a standard \TeX size, like `\small`.

7.6 Wrapping notes

7.6.1 Wrapping lemmas

`\Xwraplemma` `\Xwraplemma[\langle s \rangle]\{\langle cmd \rangle\}` is used to wrap, in the footnote, the lemma in a \TeX command. For example, with the `bidi` package, to ensure having a lemma written right to left, use `\Xwraplemma{\RL}`.

`\Xwrapendlemma` `\Xendwraplemma[\langle s \rangle]\{\langle cmd \rangle\}` is the same for endnotes.

7.6.2 Wrapping contents

`\Xwrapcontent` `\Xwrapcontent[⟨s⟩]{⟨cmd⟩}` is used to wrap the footnote contents — excluding the lemma — in a \LaTeX command.

For example, if the language of your note is not the same as the language of the lemma, use `\Xwrapcontent{\foreignlanguage{⟨language⟩}}` (with `babel`) or `\Xwrapcontent{\text{⟨language⟩}}` (for `babel`).

`\Xendwrapcontent` `\Xendwrapcontent[⟨s⟩]{⟨cmd⟩}` is the same for endnotes.

`\wrapcontentX` `\wrapcontentX[⟨s⟩]{⟨cmd⟩}` is the same for familiar footnotes.

7.7 Indent of notes content

`\Xparindent` By default, `reledmac` does not add indentation before the paragraphs inside critical footnotes. Use `\Xparindent[⟨s⟩]` to enable indentation.

`\parindentX` By default, `reledmac` does not add indentation before the paragraphs inside familiar footnotes. Use `\parindentX[⟨s⟩]` to enable indentation.

`\Xhangindent` For critical notes NOT paragraphed you can define an indent with `\Xhangindent[⟨s⟩]{⟨l⟩}`, which will be applied in the second line of notes. It can help to make distinction between a new note and a break in a note. The default value is 0 pt.

`\hangindentX` For familiar notes NOT paragraphed you can define an indentation with `\hangindentX[⟨s⟩]{⟨l⟩}`, which will be applied in the second line of notes. It can help to make a distinction between a new note and a break in a note.

`\Xendhangindent` For critical endnotes NOT paragraphed you can define an indentation with `\Xendhangindent[⟨s⟩]{⟨l⟩}`, which will be applied in the second line of notes. It can help to make a distinction between a new note and a break in a note.

7.8 Arbitrary code at the beginning of notes

The three next commands add arbitrary code at the beginning of notes. As the name's space is local to the notes, you can use it to redefine some style inside the notes. For example, if you don't want the `pstart` number to be in bold, use :

```
\Xbhooknote{\renewcommand{\thepstart}{\arabic{pstart}}.}}
```

`\Xbhooknote` `\Xbhooknote[⟨s⟩]{⟨code⟩}` is to be used at the beginning of each critical footnote.

`\bhooknoteX` `\bhooknoteX[⟨s⟩]{⟨code⟩}` is to be used at the beginning of each familiar footnote.

`\Xendbhooknote` `\Xendbhooknote[⟨s⟩]{⟨code⟩}` is to be used at the beginning of each endnote.

7.9 Arbitrary code before inserting note

`\Xbeforeinserting` `\Xbeforeinserting[⟨s⟩]{⟨code⟩}` and `\beforeinsertingX[⟨s⟩]{⟨code⟩}` are very technical commands.

They allow one to add any arbitrary code just before the footnotes are added in the list of footnotes. The main use is to insert text direction code. For example, if you edit right-to-left text with `bidl`, but want your critical footnote be left-to-right, use `\Xbeforeinserting\LTR`. You should also use `\Xwraplemma` to ensure your lemmas are right-to-left in a left-to-right paragraph (7.6.1 p. 51)).

Note that the changes are local to the footnote.

7.10 Options for footnotes in columns

7.10.1 Alignment

`\Xcolalign` By default, text in footnotes of two or three columns are flush left and without hyphenation. However, you can change this with `\Xcolalign[⟨s⟩]{⟨code⟩}` for critical footnotes, and `\colalignX[⟨s⟩]{⟨code⟩}` for familiar footnotes.

`<code>` must be one of the following command:

`\justifying` to have text justified, as usual with \LaTeX . You can also let `<code>` empty.

`\raggedright` to have text left aligned, but *without hyphenation*. That is the default `reledmac` setting.

`\RaggedRight` to have text left aligned *with hyphenation* (requires `ragged2e`).

`\raggedleft` to have text right aligned, but *without hyphenation*.

`\RaggedLeft` to have text right aligned *with hyphenation* (requires `ragged2e`).

`\centering` to have text centered, but *without hyphenation*.

`\Centering` to have text centered *with hyphenation* (requires `ragged2e`).

7.10.2 Size of the columns

For the following four macros, be careful that the columns are made from right to left.

`\Xhsizetwocol` `\Xhsizetwocol[⟨s⟩]{⟨l⟩}` is used to change width of a column when critical notes are displaying in two columns. Default value is `.45 \hspace{0.45em}`.

`\Xhsizethreecol` `\Xhsizethreecol[⟨s⟩]{⟨l⟩}` is used to change width of a column when critical notes are displaying in three columns. Default value is `.3 \hspace{0.3em}`.

`\hsizetwocolX` `\hsizetwocolX[⟨s⟩]{⟨l⟩}` is used to change width of a column when familiar notes are displaying in two columns. Default value is `.45 \hspace{0.45em}`.

`\hsizethreecolX` `\hsizethreecolX[⟨s⟩]{⟨l⟩}` is used to change width of a column when familiar notes are displaying in three columns. Default value is `.3 \hspace{0.3em}`.

7.11 Options for paragraphed footnotes and notes grouped by line

7.11.1 Mark separation of notes

`\Xafternote` You can add some horizontal space after a note by using `\Xafternote[⟨s⟩]{⟨l⟩}` (for critical footnotes) or `\afternoteX[⟨s⟩]{⟨l⟩}` (for familiar footnotes). The default value is `1em plus.4em minus.4em`.

`\Xparafootsep` For paragraphed footnotes (see below), you can choose the separator between each note by using `\Xparafootsep[⟨s⟩]{⟨text⟩}` for critical notes and `\parafootsepX` for familiar notes. A common separator is the double pipe (`||`), which you can set by using `\Xparafootsep{\parallel}`.

Note that if the symbol defined by `\Xsymlinenum` must be used at the beginning of a note, the `\Xparafootsep` / `\parafootsepX` is not used before this note.

7.11.2 Ragged text

`\Xragged` Text in paragraphed critical notes is justified, but you can use `\Xragged[⟨s⟩]{L}` if you want it to be ragged left (i.e., right justified), or `\Xragged[⟨s⟩]{R}` if you want it to be ragged right (i.e., left justified).

`\raggedX` Text in paragraphed footnotes is justified, but you can use `\raggedX[⟨s⟩]{L}` if you want it to be ragged left, or `\raggedX[⟨s⟩]{R}` if you want it to be ragged right.

7.12 Options for block of notes

7.12.1 Grouping notes by line

`\Xgroupbyline` If you do not use `\Xarrangement{paragraph}`, you may want to group all the critical footnotes related to the same line in the same paragraph. In this case, use `\Xgroupbyline[⟨series⟩]`.

In many cases, you might like to use it in combination with `\Xnumberonlyfirstinline` (7.2.1 p. 44).

`\Xgroupbylineseparetwolines` Note that the `\Xafternote` and `\Xparafootsep` settings are used to determine space and content between footnotes (7.11 p. 53). Suppose you have two notes on line 1 which overlap lines 1 and 2. This last note will be printed, if you use `\Xgroupbyline` in the same group as the previous one. In the case you want that note to be distinct, you must use both `\Xgroupbyline` and `\Xgroupbylineseparetwolines[⟨s⟩]`.

In many cases, you might like to use it in combination with `\Xnumberonlyfirstintwolines` (7.2.1 p. 44).

7.12.2 Text before notes

`\Xtxtbeforenotes` You can add text before critical footnotes with `\Xtxtbeforenotes[⟨s⟩]{⟨text⟩}`.

`\txtbeforenotesX` You can add text before familiar footnotes with `\txtbeforenotesX[⟨s⟩]{⟨text⟩}`.

`\Xendtxtbeforenotes` You can add text before endnotes with `\Xendtxtbeforenotes[⟨s⟩]{⟨text⟩}`. The text will be typeset only if there are endnotes.

`\Xtxtbeforenotesonlyonce` By default, such texts are inserted at the beginning of the groups of notes on each page. You can add `\Xtxtbeforenotesonlyonce` (for critical footnotes) and `\txtbeforenotesonlyonceX` (for familiar footnotes) to insert them only the first time notes are typeset.

7.12.3 Code before notes

`\Xbhookgroup` While `\Xtxtbeforenotes` is for typesetting text before notes, `\Xbhookgroup[⟨s⟩]{⟨code⟩}` and `\bhookgroupX[⟨s⟩]{⟨code⟩}` (for critical and familiar respectively) are for executing code before a group of notes, between the rules and the printing of the notes.

7.12.4 Spacing

`\Xbeforenotes` You can change the vertical space before the rule of the critical notes with `\Xbeforenotes[⟨s⟩]{⟨l⟩}`. The default value is 1.2em plus .6em minus .6em.

Be careful, the standard L^AT_EX footnote rule used by reledmac decreases by 3pt. This 3pt decrease is not changed by this command.

`\beforenotesX` You can change the vertical space printed before the rule of the familiar notes with `\beforenotesX[⟨s⟩]{⟨l⟩}`. The default value is 1.2em plus .6em minus .6em.

Be careful, the standard L^AT_EX footnote rule, which is used by reledmac, decreases 3pt. These 3pt are not changed by this command.

`\Xprenotes` You can set the space before the first series of critical notes printed on each page and set a different amount of space for each subsequent series on the page. You can do it with `\Xprenotes{⟨l⟩}`. The default value is 0pt. You can disable this feature by setting the length to 0pt.

`\prenotesX` You can set the space before the first printed (in a page) series of familiar notes to be different from the space before other series. The default value is 0pt. You can do this with `\prenotesX{⟨l⟩}`. You can disable this feature by setting the length to 0pt.

7.12.5 Rule

`\Xafterrule` You can change the vertical space printed after the rule of the critical notes with `\Xafterrule[⟨s⟩]{⟨l⟩}`. The default value is 0pt.

Be careful, the standard L^AT_EX footnote rule, which is used by reledmac, adds 2.6pt. These 2.6pt are not changed by this command.

`\afterruleX` You can change the vertical space printed after the rule of the familiar notes with `\afterruleX[⟨s⟩]{⟨l⟩}`. The default value is 0pt.

Be careful, the standard L^AT_EX footnote rule, which is used by reledmac, adds 2.6pt. These 2.6pt are not changed by this command.

7.12.6 Maximum height

`\Xmaxhnotes` By default, one series of critical notes can take up to 80% of `\vsize`, before being broken to the next page. If you want to change the size use `\Xmaxhnotes[⟨s⟩]{⟨l⟩}`. Be careful : the length can't be flexible, and is relative to the the current font. For example, if you want the note to take, at most, 33% of the text height, do `\Xmaxhnotes{.33\textheight}`.

`\maxhnotesX` `\maxhnotesX[⟨s⟩]{⟨l⟩}` is the same as previous, but for familiar footnotes.

Note that in many cases, you should call these commands in the begin of the document, because the `\vsize` in the preamble is not the same as `\vsize` after the preamble. That why we recommend to you to add in your preamble

```
\AtBeginDocument{
  \maxhnotesX{0.8\textheight}
  \Xmaxhnotes{0.8\textheight}
}
```

Be careful with the two previous commands. Actually, for technical purposes, one paragraphed note is considered as one block. Consequently, it cannot be broken between two pages, even if you used these commands. The debug is in the todoclist.

7.12.7 Width

`\Xwidth` `\Xwidth[⟨s⟩]{⟨l⟩}` sets the total width of critical footnotes. `\widthX[⟨s⟩]{⟨l⟩}` does the same for familiar footnotes.

`⟨l⟩` can be a length expression, parsable with `\dimexpr`. For example:

```
\Xwidth{\columnwidth+\marginparsep+\ledrsnotewidth}
\widthX{\columnwidth+\marginparsep+\ledrsnotewidth}
```

Note that changes the width of the block of notes. If you want to change the width of each column when typesetting notes in columns, use `\Xhsizetwocol`, `\Xhsizethreecol`, `\hsizetwocolX`, `\hsizethreecolX`, see 7.10.2 p. 53.

7.13 Footnotes and the reledpar columns

`\Xnoteswidthliketwocolumns`
`\noteswidthliketwocolumnsX`

If you use `reledpar` `\columns` macro, you can call :

- `\Xnoteswidthliketwocolumns[⟨s⟩]` to create critical notes with a two-column size width.
- `\noteswidthliketwocolumnsX[⟨s⟩]` to create familiar notes with a two-column size width.

7.14 Line number annotation

The way line number annotations are typeset can be changed using hooks as described in 5.5.2 p. 26 and 5.5.3 p. 27.

7.15 Endnotes in one paragraph

`\Xendparagraph`

By default, any new endnote starts a new paragraph. Use `\Xendparagraph[⟨s⟩]` to have all end notes of one given series set in one paragraph.

`\Xendafternote`

You can add some space after a endnote series by using `\Xendafternote[⟨s⟩]{⟨l⟩}`. The default value is `1em plus .4em minus .4em`.

`\Xendsep`

You can choose the separator between each note by `\Xendsep[⟨s⟩]{⟨text⟩}`. A common separator is the double pipe (`||`), which you can set by using `\Xendsep{\parallel}`.

8 Fonts

One of the most important features of the appearance of the notes, and indeed of your whole document, will be the fonts used. We will first describe the commands that give

you control over the use of fonts in the different structural elements of the document, especially within the notes, and then in subsequent sections specify how these commands are used.

`\numlabfont`

Line numbers for the main text are usually printed in a smaller font in the margin. The `\numlabfont` macro is provided as a standard name for that font: it is initially defined as

```
\newcommand{\numlabfont}{\normalfont\scriptsize}
```

You might wish to use a different font if, for example, you preferred to have these line numbers printed using old-style numerals.

`\select@lemmafont`

We will briefly discuss `\select@lemmafont` here because it is important to know about it now, although it is not one of the macros you would expect to change in the course of a simple job. Hence it is ‘protected’ by having the `@`-sign in its name.

When you use the `\edtext` macro to mark a word in your text as a lemma, that word will normally be printed again in your apparatus. If the word in the text happens to be in a font such as italic or bold you would probably expect it to appear in the apparatus in the same font. This becomes an absolute necessity if the font is actually a different script, such as Arabic or Cyrillic. `\select@lemmafont` does the work of decoding `reledmac`’s data about the fonts used to print the lemma in the main text and calling up those fonts for printing the lemma in the note.

`\select@lemmafont` is a macro that takes one long argument—the cluster of line numbers passed to the note commands. This cluster ends with a code indicating what fonts were in use at the start of the lemma. `\select@lemmafont` selects the appropriate font for the note using that font specifier.

`reledmac` uses `\select@lemmafont` in a standard footnote format macro called `\normalfootfmt`. The footnote formats for each of the layers A to E are `\let` equal to `\normalfootfmt`. So all the layers of the footnotes are formatted in the same way.

9 Verse

9.1 Basic

`\stanza`

`\&`

Use `\stanza` at the start of a stanza. Each line in a stanza is ended by an ampersand (`&`), and the stanza itself is ended by putting `\&` at the end of the last line.

If you need to add brackets directly after `\stanza`, `&` or `\&`, add `\norelax`. Otherwise, the brackets will be interpreted as delimitation of an optional argument (cf. 9.8 p. 60)

9.2 Define stanza indents

`\stanzaindentbase`

Lines within a stanza may be indented. The indents are integer multiples of the length `\stanzaindentbase`, whose default value is 20pt.

`\setstanzaindents`

In order to use the stanza macros, **one must set the indentation values**. First the value of `\stanzaindentbase` should be set, unless the default value 20pt is desired. Every stanza line indentation is a multiple of this.

To specify these multiples one invokes, for example
`\setstanzaindents{3,1,2,1,2}`.

The numerical entries must be whole numbers, 0 or greater, separated by commas without embedded spaces. The first entry gives the hanging indentation to be used if the stanza line requires more than one print line.

If it is known that each stanza line will fit in one print line, then this first entry should be 0; \TeX does less work in this case, but no harm ensues if the hanging indentation is not 0 but is never used.

If you want the hanging verse to be flush right, you can use `\sethanginsymbol`: see p. 9.6 p. 59.

Enumeration is by stanza lines, not by print lines. In the above example the lines are indented one unit, two units, one unit, two units, with 3 units of hanging indentation in case a stanza line is too long to fit on one print line.

9.3 Repeating stanza indents

Since version 0.13, if the indentation is repeated every n verses of the stanza, you can define only the n first indentations, and indicate that they are repeated, defining the value of the `stanzaindentsrepetition` counter at n . For example:

```
\setstanzaindents{5,1,0}
\setcounter{stanzaindentsrepetition}{2}
```

is like

```
\setstanzaindents{5,1,0,1,0,1,0,1,0,1,0}
```

Be careful: the feature is changed in `eledmac` 1.5.1. See A.3 p. 396.

If you don't use the `stanzaindentsrepetition` counter, make sure you have at least one more numerical entry in `\setstanzavalues` than the number of lines in the stanza.

If you want to disable this feature again, just put the counter to 0:

```
\setcounter{stanzaindentsrepetition}{0}
```

The macros make no restriction on the number of lines in a stanza. Stanza indentation values (and penalty values) obey \TeX 's grouping conventions, so if one stanza among several has a different structure, its indentations (penalties) may be set within a group; the prior values will be restored when the group ends.

9.4 Manual stanza indent

`\stanzaindent` You can set the indent of some specific verse by calling `\stanzaindent{⟨value⟩}` at the
`\stanzaindent*` beginning of the verse, before any other character. In this case, the indent defined by `\setstanzaindents` for this verse is skipped, and `{⟨value⟩}` is used instead.

If you use the mechanism of indent repetition, the next verse will be printed as it should be even if the current verse would have its normal indent value. In other words, using `\stanzaindent` in a verse does not shift the indent repetition.

However, if you want to shift the indent repetition, so the next verse has the indent normally used for the current verse, use `\stanzaindent*` instead of `\stanzaindent`.

9.5 Stanza breaking

`\setstanzapenalties` When the stanzas run over several pages, it is often desirable that page breaks should arise between certain lines in the stanza, so a facility for including penalties after stanza lines is provided. If you are satisfied with the page breaks, you need not set the penalty values.

The command

```
\setstanzapenalties{1,5000,10100,5000,0}
```

results in a penalty of 5000 being placed after the first and third lines of the stanza, and a penalty of -100 after the second.

The first entry “1” is a control value. If it is zero, then no penalties are passed on to \TeX , which is the default. Values between 0 and 10000 are penalty values; values between 10001 and 20000 have 10000 subtracted and the result is given as a negative penalty. The mechanism used for indentations and penalties requires unsigned values less than 32768. No penalty is placed after the last line, so the final ,0 in the example above could be omitted. A penalty of 10000 will prevent a page break; such a penalty is included automatically where there is stanza hanging indentation. A penalty of -10000 (corresponding to the entry value 20000 in this context) forces a page break. Values in between act as suggestions as to the desirability of a page break at a given line. There is a subtle interaction between penalties and *glue*, so it may take some adjustment of skips and penalties to achieve the best results.

9.6 Hanging symbol

It is possible to insert a symbol in each line of hanging verse, as in French typography; for example, the opening bracket ‘[’. To insert it in `reledmac`, use macro `\sethangingsymbol{⟨h⟩}` with this code. In the example of French typography, do

`\sethangingsymbol`

```
\sethangingsymbol{[,}
```

You can also use it to force hanging verse to be flush right:

```
\sethangingsymbol{\protect\hfill}
```

9.7 Long verse and page break

If you want to prevent page breaks inside long verses, use the option `nopbinverse` when loading package, or use `\lednopbinversetrue`. Read 18.2 p. 77 for further details.

9.8 Content before/after verses

It is possible to add content, like a subtitle or a spacing, before or after verse:

- The `\stanza` command can take an optional argument (in brackets). Its content will be printed before the stanza. A `\noindent` is inserted before the content of first optional argument. If you don't want this `\noindent`, you can use the second optional argument (also in brackets):

```
\stanza[foo] % \noindent is inserted before foo.
\stanza[][foo] % There is no \noindent inserted before foo.
```

`\AtEveryStanza`

- Use `\AtEveryStanza{⟨arg⟩}` to automatically add content before stanzas (not in the same paragraph).

Note that a `\noindent` will be inserted before the argument, and, consequently, a `\parskip`. You can use the starred version of `\AtEveryStanza` to avoid this `\noindent`.

`\AtStartEveryStanza`

- Use `\AtStartEveryStanza` to automatically add content at the beginning of stanzas (in the same paragraph).

- `&` can be replaced by `\newverse` with two optional arguments (in brackets). The first will be printed after the current verse, the second before the next verse.

A `\noindent` is automatically inserted before the contents of these optional arguments.

Use a third and fourth optional argument to not add these `\noindents` (to add content respectively after the current verse / before the next verse).

- Use `\AtEveryPend{⟨arg⟩}` to automatically add content after verses (including the final one) and `\AtEveryPstart{⟨arg⟩}` to automatically add content before verses (including the first one).

- `\&` can take an optional argument (in brackets). Its content will be printed after the stanza.

`\AtEveryStopStanza`

- Use `\AtEveryStopStanza` to automatically add content after the end of stanzas (not in the same paragraph).

Note that a `\noindent` will be inserted before the argument, and, consequently, a `\parskip`. You can use the starred version of `\AtEveryStopStanza` to avoid this `\noindent`.

`\BeforeEveryStopStanza`

- Use `\BeforeEveryStopStanza` to automatically add content at the end of stanzas (in the same paragraph).

9.9 Numbering stanza

`\numberstanzatrue` If you want to automatically number stanzas, use `\numberstanzatrue`. In this case, the line number will restart at each `\stanza`.

If you want to disable this feature again, use `\numberstanzafalse`.

You can use this feature in combination with `\Xstanza` (7.2.9 p. 47).

`\thestanza` You can redefine `\thestanza` to change the aspect of stanza number. Default value is:

```
\renewcommand{\thestanza}{%
  \textbf{\arabic{stanza}}%
}
```

You can change the value of the stanza counter with the usual commands of \TeX .

`\stanzanumwrapper` You can redefine `\stanzanumwrapper` in order to modify the way the stanza number is inserted in the flow of text. Default value is:

```
\newcommand{\stanzanumwrapper}[1]{%
  \flagstanza{#1}%
}
```

9.10 Various tools

`\ampersand` If you need to print an `&` symbol in a stanza, use the `\ampersand` macro, not `\&` as this will end the stanza.

`\flagstanza` Putting `\flagstanza[⟨len⟩]{⟨text⟩}` at the start of a line in a stanza (or elsewhere) will typeset `⟨text⟩` at a distance `⟨len⟩` before the line. The default `⟨len⟩` is `\stanzaindentbase`.

9.11 Notes on empty lines

Since v2.3.0 of `reledmac`, empty lines when typesetting verses no longer produce new paragraphs, and consequently, do not insert vertical spaces. Use optional argument of `\stanza` or `\newverse` to insert vertical space (9.8 p. 60).

10 Grouping

In a `minipage` environment \TeX changes `\footnote` numbering from arabic to alphabetic and puts the footnotes at the end of the `minipage`.

`minipage` You can put numbered text with critical footnotes in a `minipage` and the footnotes are set at the end of the `minipage`.

You can also put familiar footnotes (see section 6.5) in a `minipage` but unlike with `\footnote` the numbering scheme is unaltered.

`ledgroup` Minipages, of course, are not broken across pages. Footnotes in a `ledgroup` environment are typeset at the end of the environment, as with minipages, but the environment

includes normal page breaks. The environment makes no change to the `textwidth` so it appears as normal text; it just might be that footnotes appear in the middle of a page, with text above and below.

`ledgroupsized`

The `ledgroupsized` environment is similar to `ledgroup` except that you must specify a width for the environment, as with a `minipage`.

`\begin{ledgroupsized}[\langle pos \rangle]{\langle width \rangle}`.

The required `\langle width \rangle` argument is the text width for the environment. The optional `\langle pos \rangle` argument is for positioning numbered text within the normal `textwidth`. It may be one of the characters:

l (left) numbered text is flush left with respect to the normal `textwidth`. This is the default.

c (center) numbered text is in the center of the `textwidth`.

r (right) numbered text is flush right with respect to the normal `textwidth`.

Note that normal text, footnotes, and so forth are all flush left.

`\begin{ledgroupsized}{\textwidth}` is effectively the same as `\begin{ledgroup}`

11 Cross referencing

The package provides a simple cross-referencing facility that allows you to mark places in the text with labels, and generate page and line number references to those places elsewhere using those labels.

11.1 Basic use

`\edlabel`

First you place a label in the text using the command `\edlabel{\langle lab \rangle}`. `\langle lab \rangle` can be almost anything you like, including letters, numbers, punctuation, or a combination—anything but spaces; you might type `\edlabel{toves-3}`, for example.²¹

`\edpageref`

`\edlineref`

`\sublineref`

`\pstartref`

`\annotationref`

Elsewhere in the text, either before or after the `\edlabel`, you can refer to its location with `\edpageref{\langle lab \rangle}`, `\edlineref{\langle lab \rangle}`, `\edsublineref{\langle lab \rangle}`, `\pstartref{\langle lab \rangle}` or `\annotationref{\langle lab \rangle}`, that will produce, respectively, the page, line, sub-line, `pstart`, the annotation, on which the `\edlabel{\langle lab \rangle}` command occurred.

Note that the `\edlineref` command insert the side flag after the line number.

An `\edlabel` command may appear in the main text, or in the first argument of `\edtext`, but not in the apparatus itself. But `\edpageref`, `\edlineref`, `\sublineref`, `\pstartref` commands can also be used in the apparatus to refer to `\edlabels` in the text.

The `\edlabel` command works by writing macros to `!TeX.aux` file. You will need to process your document through `!TeX` twice in order for the references to be resolved.

You will be warned if you use `\edlabel{foo}` and `foo` has been used as a label before. The `ref` commands will return references to the last place in the file marked

²¹More precisely, you should stick to characters in the `TeX` categories of “letter” and “other”.

with this label. You will also be warned if a reference is made to an undefined label. (This will also happen the first time you process a document after adding a new `\edlabel` command: the auxiliary file will not have been updated yet.)

11.2 Cross-referencing to a critical note

If you want to refer to a word which is a lemma word, the `\edlabel` command should be in the first argument of `\edtext` command.

If you want to refer to the content of a `\Xfootnote`, the line and subtitle number printed will be the start line.

If you want to refer to starting and ending lines, you should use `\appref` and related tools (11.6.2 p. 65).

11.3 Cross-referencing which return a number in any case

`\xpageref`
`\xlineref`
`\xsublineref`
`\xpstartref`
`\xannotationref`

However, there are situations in which you will want `reledmac` to return a number without displaying any warning messages about undefined labels or the like: if you want to use the reference in a context where \TeX is looking for a number, such a warning will lead to a complaint that the number is missing. This is the case for references used within the argument to `\linenum`, for example (see 6.2.5 p. 32).

For this situation, `reledmac` supplies variants of the reference commands, with the `x` prefix: `\xpageref`, `\xlineref`, `\xsublineref`, `\xpstartref` and `\xannotationref`. They have the following limitations:

- They will not tell you if the label is undefined.
- They must be preceded in the file by at least one of the four other cross-reference commands—e.g., a `\edlabel{foo}` command, even if you never refer to that label—since those commands can all do the necessary processing of the `.aux` file, and the `\x...` ones cannot.
- When `hyperref` is loaded, the `hyperref` link will not be added. (Indeed, it is not a limitation, but a feature.)
- With `reledpar`, the `\xlineref` does not insert the right side flag, in order to obtain a line number. Use `\xflagref` to obtain the side flag, depending of your flag.

11.3.1 Cross-referencing in order to define line number of a critical note

`\xxref`

The `\xxref{<lab1>}{<lab2>}` command generates a reference to a sequence of lines, for use in the second argument of `\edtext`. It takes two arguments, both of which are labels: e.g., `\xxref{mouse}{elephant}`.

It automatically calls `\linenum` (6.2.5 p. 32) and `\lineannot` (5.5.1 p. 26) and sets the beginning page, line, subtitle numbers and line annotations to those of the

place where `\edlabel{mouse}` was placed, and the ending ones to those where `\edlabel{elephant}` occurs.

For example, one might use the following:

```
\beginnumbering

\pstart
\edlabel{Queritur}Queritur utrum metaphysica sit scientia una.
\pend

\pstart
\edtext{Et videtur quod non\edlabel{non}.}{\xxref{Queritur}{non}\lemma{queritur \dots}{ non}}
\pend

\endnumbering
```

11.4 Not automatic cross-referencing

`\edmakelabel` Sometimes the `\edlabel` command cannot be used to specify exactly the page and line desired—for example, if you want to refer to a page and line number in another volume of your edition. In such cases, you can use the `\edmakelabel{<lab>}{<numbers>}` macro so that you can ‘roll your own’ label.

For example, if you type ‘`\edmakelabel{elephant}{10|25|0}`’ you will create a new label, and a later call to `\edpageref{elephant}` would print ‘10’ and `\lineref{elephant}` would print ‘25’. The sub-line number here is zero. It is usually best to collect your `\edmakelabel` statements near the top of your document, so that you can see them at a glance.

11.5 Normal L^AT_EX cross-referencing

`\label` The normal `\label`, `\ref` and `\pageref` macros may be used within numbered text, and operate in the familiar fashion.
`\ref`
`\pageref`

11.6 References to start and end lines

11.6.1 Reference to main text lines

Many times, you may want to make a cross-reference to a passage that is defined by a start line and an end line. `reledmac` provides specific tools for this scenario.

`\edlabelS` Use `\edlabelS{<label>}` to mark the start line of the passage.
`\edlabelE` Use `\edlabelE{<label>}` to mark the end the end line of the passage. These two commands just create two labels which are named `<label>:start` and `<label>:end`.
`\edlabelSE` Use `\edlabelSE{<label>}` to mark just one location in the text. Contrary to a classical `\edlabel`, the `<label>` could be use with `\Seref` and `\Serefwithpage`.
`\Seref` The main utility is to use them with three other commands. `\Seref{<label>}` will make a cross-reference printed as a reference in critical footnotes.
`\Serefwithpage` `\Serefwithpage` will make a cross-reference printed as a reference in critical end-

notes.

`\Serefonlypage` `\Serefonlypage` will make a cross-reference printed only with page number.

11.6.2 References to lines that are commented on in the apparatus

You may want to make a cross-reference to a passage that is referred to by `\edtext`. `reledmac` provides specific tools for this scenario.

`\applabel` If you use `\applabel{<label>}` inside the second argument of a `\edtext`, `reledmac` will add a `\edlabel` at the beginning and end of the marked passage. The label at the beginning of the passage will have the title `<label>:start`, while the label at the end will have the title `<label>:end`.

If you use `\linenum` (6.2.5 p. 32) to refer to these labels, `reledmac` will use your line settings to refer to the passage.

`\appref` You can also use `\appref{<label>}` and `\apprefwithpage{<label>}` to refer to these lines. The first one will print the lines as they are printed in the critical footnotes, while
`\apprefwithpage` the second will print the lines as they are printed in endnotes.

11.6.3 Settings

`\setapprefprefixsingle` **Specific to these tools** If you use `\apprefprefixsingle{<prefix>}`, `<prefix>` will be
`\setapprefprefixmore` printed before the line numbers of a `\appref`-reference. If you use `\apprefprefixmore{<prefix>}`,
`<prefix>` will be printed before the line numbers, if you refer to more than one line.

For example, you may use:

```
\setapprefprefixsingle{line~}
\setapprefprefixmore{lines~}
```

Note that if you do not use `\setapprefprefixmore`, the argument of `\setapprefprefixsingle` will be used in any case.

`\setSerefprefixsingle` `\setSerefprefixsingle` and `\setSerefprefixmore` are similar for `\Seref`
`\setSerefprefixmore` command.

`\setSerefonlypageprefixsingle` Use `\setSerefonlypageprefixsingle{<prefix>}` to set the page prefix for `\Serefonlypage`
`\setSerefonlypageprefixmore` when there is only one page. Use `\setSerefonlypageprefixmore{<prefix>}` to set it
when there is more than one page. For example:

```
\setSerefonlypageprefixsingle{p.~}
\setSerefonlypageprefixmore{pp.~}
```

Note that if you do not use `\setSerefonlypageprefixmore`, the value of `\setSerefonlypageprefixsingle` is used instead.

Also note that `\setSerefonlypageprefixsingle` is only a shortcut for `\XendbeforepagenumberSerefonlypage` (see 11.6.3 p. 66). So if you use `\Xendbeforepagenumber` without any optional argument, it will override this setting.

Linked to setting of critical footnotes and endnotes Some commands which set the appearance of line numbers in critical footnotes also set the appearance of line numbers in `\appref` and `\Seref` if called *without the optional series argument*.

These commands are the following:

- `\Xlineflag` (for `reledpar`), enabled by default.
- `\Xlinerangeseparator`
- `\Xmorethantwolines`
- `\Xsublinesep`
- `\Xtwolines`
- `\Xtwolinesbutnotmore`
- `\Xtwolinesonlyinsamepage`
- `\Xlinenumannotationposition`
- `\Xwraplinenumannotation`
- `\Xnoidenticallylinenumannotation`

If you want to make settings specific to `\appref` or `\Seref`, just call them with an optional argument containing a comma-separated list of command names (for example `appref,Seref`) or with a suffix equal to the command name (for example `appref`).

The same principle is available for `\apprefwithpage`, `\Serefwithpage` and `\Serefonlypage` with the following commands:

- `\Xendafterpagenumber` (not for `\Serefonlypage`)
- `\Xendbeforepagenumber`
- `\Xendlineflag` (for `reledpar`), enabled by default.
- `\Xendlineprefixmore`
- `\Xendlineprefixsingle`
- `\Xendlinerangeseparator`
- `\Xendmorethantwolines`
- `\Xendsublinesep`
- `\Xendtwolines`
- `\Xendtwolinesbutnotmore`
- `\Xendtwolinesonlyinsamepage`
- `\Xendlinenumannotationposition`
- `\Xendwraplinenumannotation`
- `\Xendnoidenticallylinenumannotation`

For one specific command When calling `\appref` and `\Seref`, you can use as a first optional argument, in brackets (`[]`), any optional argument which can be used for critical footnotes (6.2.2 p. 30).

When calling `\apprefwithpage`, `\Serefwithpage` or `\Serefonlypage` you can use as a first optional argument, in brackets (`[]`), any optional argument which can be used for critical endnotes (6.2.3 p. 30).

11.6.4 Combining multiple references

When combining multiple cross references into a list, it is possible to prevent prefixes reappearing by adding an optional argument to `\appref` and `\Seref`. The available options are:

- `noprefix` to remove any prefix set by `\setapprefprefixsingle` or the equivalent for a single reference;
- `prefixmore` to force the plural version of a prefix.

For example, a reference to ‘lines 65–66, 72, and 75’ might use `\Seref[prefixmore]{ref1}`, `\Seref[noprefix]{ref1}` to achieve this result.

11.7 Compatibility with *xr* package

The `\externaldocument` command of the *xr* package allows making cross-references from an external document, with the standard \TeX commands `\label` and `\ref` (and related).

To use it with the `reledmac` cross-reference commands (i.e. `\edlabel` and related), you must do the following:

1. Load the *xr* package.
2. Load the *reledmac* package.
3. Use the `\externaldocument` document command.

12 Sidenotes

12.1 Basics

The `\marginpar` command does not work in numbered text. Instead, the package provides for non-floating sidenotes in either margin.

`\ledinnernote` `\ledinnernote{<text>}` will put `<text>` into the inner margin level with where the command was issued. Similarly, `\ledouternote{<text>}` puts `<text>` in the outer margin.

`\ledleftnote` `\ledsidenote{<text>}` will put `<text>` into the margin specified by the current setting of `\sidenotemargin{<location>}`. The permissible value for `<location>` is one out of the list `left`, `right`, `inner`, or `outer`, for example `\sidenotemargin{outer}`.

`\sidenotemargin` The package’s default setting is

`\sidenotemargin{right}`

to typeset `\ledsidenotes` in the right hand margin. This is the opposite of the default margin for line numbers. The style for a `\ledsidenote` follows that for a `\ledleftnote` or a `\ledrightnote` depending on the margin it is put in.

If two note commands for the same side are called in the same line, they will be appended and separated by a comma.

The notes will appear only after the second \LaTeX run. If the note positions change in your `.tex` file, you need two runs to get the correction position in the output file. You are strongly encouraged to use tools like *latexmk*, to be sure to get the correct number of runs.

12.2 Setting

12.2.1 Width

`\ledlsnotewidth` The left sidenote text is put into a box of width `\ledlsnotewidth` and the right
`\ledrsnotewidth` text into a box of width `\ledrsnotewidth`. These are initially set to the value of `\marginparwidth`.

12.2.2 Vertical position

`\rightnoteupfalse` By default, sidenotes are placed to align with the last line of the note to which it refers.
`\leftnoteupfalse` If you want they to be placed to align with the first line of the note to which it refers, use `\leftnoteupfalse` (for left note) and/or `\rightnoteupfalse` (for right note).

12.2.3 Distance to the main text

`\ledlsnotesep` The texts are put a distance `\ledlsnotesep` (or `\ledrsnotesep`) into the left (or right)
`\ledrsnotesep` margin. These lengths are initially set to the value of `\linenumsep`.

12.2.4 Font

`\ledlsnotefontsetup` These macros specify how the sidenote texts are to be typeset. The initial definitions
`\ledrsnotefontsetup` are:

```
\newcommand*{\ledlsnotefontsetup}{\raggedleft\footnotesize}% left
\newcommand*{\ledrsnotefontsetup}{\raggedright\footnotesize}% right
```

These can of course be changed to suit.

12.2.5 Separator between notes

`\setsidenotesep` If you have two or more sidenotes for the same line, they are separated by a comma. But if you want to change this separator, you can use `\setsidenotesep{<sep>}`.

13 Indexing

13.1 Basics

`\edindex` \TeX provides the `\index{<item>}` command for specifying that $\langle item \rangle$ and the current page number should be added to the raw index (`idx`) file. The `\edindex{<item>}` macro can be used in numbered text to specify that $\langle item \rangle$ and the current page & linenumber should be added to the raw index file.

Note that the file `.idx` will contain the right reference only after the third run, because of the internal indexing mechanism of `reledmac`. That means you must first run (Xe/Lua) \TeX three times, then run `makeindex`, and then finally run (Xe/Lua) \TeX again, in order to get an index with the right page numbers.

Also note that using `\edtext` in familiar footnotes refers to the line where the footnotes are called

13.2 Use with `imakeidx` or `indextools`

If the `imakeidx` or `indextools` package is used then the macro takes an optional argument, which is the name of a raw index file. For example `\edindex[line]{item}` will use `line.idx` as the raw file instead of `\jobname.idx`.

The minimal version of `imakeidx` package to be used is the version 1.3a uploaded on CTAN on 2013/07/11.

Be careful with the order of package loading and index declaration. You must use this order:

1. Load `imakeidx` or `indextools`.
2. Load `reledmac`.
3. Declare the index with the macro `\makeindex` of `imakeidx` and `indextools`.

13.3 Referring to critical notes

If you want to refer to a word inside an `\edtext{<lemma>}{<app>}` command, `\edindex` should be defined inside the first argument, e.g.,

```
The \edtext{creature\edindex{elephant} was quite
unafraid}{\Afootnote{Of the mouse, that is.}}
```

If you add `\edindex` inside some `\Xfootnote` command, it will refer to that note, and a suffix n will be appended to the reference. You can redefine this suffix by redefining the command `\ledinnotemark`. Its actual definition is:

```
\newcommand{\ledinnotemark}[1]{#1\emph{n}}
```

Where `#1` stands for the reference.

13.4 Separator between page and line numbers

`\pagelinesep` The page & linenum combination is written as `page\pagelinesep line`, where the default definition is `\newcommand{\pagelinesep}{-}` so that an item on page 3, line 5 will be noted as being at 3-5. You can renew `\pagelinesep` to get a different separator.

- is the default separator used by the MAKEINDEX program.

You can reconfigure it, this example defines a colon as separator:

```
\renewcommand{\pagelinesep}{:}
```

However, you also have to configure your `.ist` index style file. For example, if you use `:` as separator²².

```
page_compositor ":"
```

Read the MAKEINDEX program's handbook about the `.ist` file.

13.5 Using xindy

Should you decide to use `xindy` instead of `makeindex` to transform your `.idx` files into `.ind` files, you must use some specific configuration file (`.xdy`) so that `xindy` can understand `eledmac` reference syntax of which the scheme is:

`pagenumber-linenum`

An example of such a file is provided in the “examples” folder. Read the `xindy` handbook to learn how to use it.²³

This file also provides, with an explanation, the settings that are needed to put `reledmac` lines numbers in parenthesis, in order to make a better distinction between line numbers and page ranges.

In any case, you must load `reledmac` with the `xindy` option, in order to generate a `.xdy` file which is specific to your document. This file is needed by the `.xdy` example file which is in the “examples” folder. Its default name is `reledmac-markup-attr.xdy`, but you can change it by using your own as an argument of the `xindy+hyperref` option.

If you choose to use both `xindy` and the `hyperref` package, you must do three more things:

1. Use `xindy+hyperref` option when loading the `reledmac` package. When you run (Xe/Lua) \LaTeX with this option, a `.xdy` configuration file will be generated with all the settings needed to allow internal hyperlinking in each index entry which is created by `\edindex`.
2. Use `hyperindex=false` option when loading `hyperref`.

²²For further detail, you can read <http://tex.stackexchange.com/a/32783/7712>.

²³Or, for people who read French, read <http://geekographie.maieul.net/174>.

3. Uncomment — by removing the semicolons at the beginning of the relevant lines — some lines in the `<code>.xdy</code>` file provided in the “examples” folder in order to restore internal links in the index to be used by the standard `index` command.²⁴

13.6 Advanced setting

`\edindexlab` The `\edindex` process uses a `\label` and `\ref` mechanism to get the correct line number. It automatically generates labels of the form `\label{\edindexlab N}`, where `N` is a number, and the default definition of `\edindexlab` is:

```
\newcommand*{\edindexlab}{\&}
```

in the hopes that this will not be used by any other labels (`\edindex`’s labels are like `\label{\&27}`). You can change `\edindexlab` to something else if you need to.

14 Glossary

`reledmac` provides mechanism to make glossaries with the `glossaries` package, referring not to the page, but to the page and line.

14.1 Preamble setting

The standard compositor between page and line number in `reledmac` is a dash, while `glossaries` uses, by default, a dot. Consequently, you must:

- Or set `.glossaries`:

```
\glsSetCompositor{-}
```
- Or set `reledmac`:

```
\renewcommand{\pagelinesep}{.}
```

In this case, the above will have consequences for your use of `\edindex` and you should set your `.ist` file (13.4 p. 70).

14.2 Commands

The `\gls`, `\Gls`, and related commands of `glossaries` packages have a prefixed version with `ed`, which refers to the page line. The argument are the same as for the standard commands. So for example:

```
\edgls[<options>]{<label>}[<insert>]
```

15 Tabular material

\LaTeX ’s normal `tabular` and `array` environments cannot be used where line numbering is being done; more precisely, they can be used but with odd results, so don’t use

²⁴These are the recommended lines to provide the best possible compatibility between `hyperref` and `xindy`, even without using `reledmac`.

them. However, `reledmac` provides some simple tabulation environments that can be line numbered. The environments can also be used in normal unnumbered text.

`edarrayl` There are six environments; the `edarray*` environments are for math and `edtabular*`
`edarrayc` for text entries. The final `l`, `c`, or `r` in the environment names indicate that the entries
`edarrayr` will be flushleft (`l`), centered (`c`) or flushright (`r`). There is no means of specifying dif-
`edtabularl` ferent formats for each column, nor for specifying a fixed width for a column. The
`edtabularc` environments are centered with respect to the surrounding text.
`edtabularr`

```
\begin{edtabularc}
1 & 2 & 3 \\
a & bb & ccc \\
AAA & BB & C
\end{edtabularc}
```

Entries in the environments are the same as for the normal `array` and `tabular` environments but there must be no ending `\\` at the end of the last row. *There must be the same number of column designators (the `&`) in each row.* There is no equivalent to any line drawing commands (such as `\hline`). However, unlike the normal environments, the `ed...` environments can cross page breaks.

Macros like `\edtext` can be used as part of an entry.

For example:

```
\beginnumbering
\pstart
\begin{edtabularl}
\textbf{\Large I} & wish I was a little bug\edindex{bug} &
\textbf{\Large I} & eat my peas with honey\edindex{honey} \\
& & With whiskers \edtext{round}{\Afootnote{around}} my tummy &
& I've done it all my life. \\
& I'd climb into a honey\edindex{honey} pot &
& It makes the peas taste funny \\
& And get my tummy gummy.\edindex{gummy} &
& But it keeps them on the knife.
\end{edtabularr}
\pend
\endnumbering
```

produces the following parallel pair of verses.

1	I wish I was a little bug	I eat my peas with honey
2	With whiskers round my tummy	I've done it all my life.
3	I'd climb into a honey pot	It makes the peas taste funny
4	And get my tummy gummy.	But it keeps them on the knife.

`\edtabcolsep` The distance between the columns is controlled by the length `\edtabcolsep`.
`\spreadmath` `\spreadmath{⟨math⟩}` typesets `{⟨math⟩}` but the `{⟨math⟩}` has no effect on the
`\spreadtext` calculation of column widths. `\spreadtext{⟨text⟩}` is the analagous command for use
in `edtabular` environments.

```

\begin{edarrayl}
1 & 2 & & 3 & & 4 & \\
& \spreadmath{F+G+C} & & & & & \\
a & & bb & & ccc & & dddd \\
\end{edarrayl}

```

$$\begin{array}{cccc}
1 & 2 & 3 & 4 \\
& F + G + C & & \\
a & bb & ccc & dddd
\end{array}$$

`\edrowfill` The macro `\edrowfill{⟨start⟩}{⟨end⟩}{⟨fill⟩}` fills columns number `⟨start⟩` to `⟨end⟩` inclusive with `⟨fill⟩`. The `⟨fill⟩` argument can be any horizontal ‘fill’. For example, `\hrulefill` or `\upbracefill`.

Note that every row must have the same number of columns, even if some would not appear to be necessary.

The `\edrowfill` macro can be used in both tabular and array environments. The typeset appearance of the following code is shown below.

```

\begin{edtabularr}
1 & & & & & & & & & & \\
Q & & & & fd & & h & & & & qwertziohg \\
v & & & wptz & & x & & y & & vb & \\
g & & & & nnn & & & \edrowfill{3}{5}{\upbracefill} & & & \\
\edrowfill{1}{3}{\downbracefill} & & & & & & & pq & & dgh & \\
k & & & & & & l & & co & & ghweropjklmnbvcxys \\
1 & & & 2 & & 3 & & \edrowfill{4}{5}{\hrulefill} & & & \\
\end{edtabularr}

```

$$\begin{array}{cccccc}
1 & 2 & 3 & 4 & & 5 \\
Q & & & fd & h & qwertziohg \\
v & wptz & x & y & & vb \\
g & nnn & & \underbrace{\hspace{1.5cm}} & & dgh \\
k & \underbrace{\hspace{1.5cm}} & l & co & ghweropjklmnbvcxys & \\
1 & 2 & 3 & \underline{\hspace{1.5cm}} & &
\end{array}$$

You can also define your own ‘fill’. For example:

```

\newcommand*{\upbracketfill}{%
  \vrule height 4pt depth 0pt\hrulefill\vrule height 4pt depth 0pt}

```

is a fill like `\upbracefill` except it has the appearance of a (horizontal) bracket instead of a brace. It can be used like this:

```

\begin{edarrayc}
1 & 2 & & & & & & & & & \\
a & & \edrowfill{2}{3}{\upbracketfill} & & & d & \\
A & B & & & C & D & \\
\end{edarrayc}

```

$$\begin{array}{cccc}
1 & 2 & 3 & 4 \\
a & \lrcorner & & d \\
A & B & C & D
\end{array}$$

`\edatleft` `\edatleft[$\langle math \rangle\{\langle symbol \rangle\}\langle halfheight \rangle$]` typesets the math $\langle symbol \rangle$ as $\left\{\langle symbol \rangle\right\}$ with the optional $\langle math \rangle$ centered before it. The $\langle symbol \rangle$ is twice $\langle halfheight \rangle$ tall. The `\edatright` macro is similar and it typesets $\right\{\langle symbol \rangle\}$ with $\langle math \rangle$ centered after it.

```
\begin{edarrayc}
  & 1 & 2 & 3 & \\
  & 4 & 5 & 6 & \\
\edatleft[left =]{\{1.5\baselineskip}
  & 7 & 8 & 9 & \\
\edatright[= right]{\{1.5\baselineskip}
\end{edarrayc}
```

$$left = \left(\begin{array}{ccc} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{array} \right) = right$$

`\edbeforetab` `\edbeforetab{ $\langle text \rangle\{\langle entry \rangle\}$ }`, where $\langle entry \rangle$ is an entry in the leftmost column, typesets $\langle text \rangle$ left justified before the $\langle entry \rangle$. Similarly `\edaftertab{ $\langle entry \rangle\{\langle text \rangle\}$ }`, where $\langle entry \rangle$ is an entry in the rightmost column, typesets $\langle text \rangle$ right justified after the $\langle entry \rangle$.

For example:

```
\begin{edarrayl}
  A & 1 & 2 & 3 \\
\edbeforetab{Before}{B} & 1 & 3 & 6 \\
  C & 1 & 4 & \edaftertab{8}{After} \\
  D & 1 & 5 & 0 \\
\end{edarrayl}
```

	A 1 2 3 B 1 3 6 C 1 4 8 D 1 5 0	After
Before		

`\edvertline` The macro `\edvertline{ $\langle height \rangle$ }` draws a vertical line $\langle height \rangle$ high (contrast this with `\edatright` where the size argument is half the desired height).

`\edvertdots`

```
\begin{edarrayr}
  a & b & C & d & \\
  v & w & x & y & \\
  m & n & o & p & \\
  k & & L & cvb & \edvertline{4pc}
\end{edarrayr}
```

<i>a</i>	<i>b</i>	<i>C</i>	<i>d</i>	|
<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>	|
<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	|
<i>k</i>		<i>L</i>	<i>cvb</i>	|

The `\edvertdots` macro is similar to `\edvertline` except that it produces a vertical dotted instead of a solid line.

16 Sectioning commands

16.1 Sectioning commands without line numbers or critical notes

The standard sectioning commands (`\chapter`, `\section` etc.) can be used inside numbered text. In this case, you must call them as an optional argument of `\pstart` (5.2.3 p. 19):

```
\pstart[\section{section}]
Pstart content.
\pend
```

The line which contains them will not be numbered, and you cannot add critical notes inside.

16.2 Sectioning commands with line numbering and critical notes

You have to use the following commands:

- `\eledchapter[\text]{\critical text}`,
- `\eledchapter*`,
- `\eledsection[\text]{\critical text}`,
- `\eledsection*`,
- `\eledsubsection[\text]{\critical text}`,
- `\eledsubsection*`,
- `\eledsubsubsection[\text]{\critical text}`,
- `\eledsubsubsection*`.

These are equivalent to the \LaTeX commands. Each individual command must be called alone in a `\pstart... \pend`:

```
\pstart
\eledsection*{xxxx\ledsidenote{section}}
```

```

\pend
\pstart
\eledsubsection*{xxxx\ledsidenote{sub}}
\pend
\pstart
normal text
\pend

```

After the first run, you will see only the text. This is normal. After the second run, you will see the formatting. Finally, with the third run, you will see the table of contents.

For technical reasons, the page break before `\elechapter` cannot be added automatically. You have to insert it manually via `\beforeeledchapter`, which must be called outside of a numbered section.

16.3 Optimization

If you are not going to have any `\eledxxx` commands, then load `reledmac` with `noeledsec` option. That will suppress the generation of unneeded `.eledsec` files, save memory, and make `reledmac` run faster.

17 Quotation environments

The quotation and quote environments can be used so that the same definition/note appears both inside and outside a numbered section. The typographical consequences will resemble the outside numbered sections, based on the styles of the *book* class. However, if you use a package that redefines these environments, these redefinitions won't be available inside the numbered section. You must open any quotation environments inside a `\pstart ... \pend` block, not outside. A quotation environment **MUST NOT** be opened immediately after a `\pstart` and **MUST NOT** be closed immediately before a `\pend`.

In some cases, you do not want these environments to be redefined in numbered sections. You can load the package with the option `noquotation` to prevent this redefinition.

18 Page breaks

18.1 Control page breaking

`reledmac` and `reledpar` break pages automatically. However, you may sometimes want to either force page breaks, or prevent them. The packages provide two macros:

`\ledpb`
`\lednopb`

- `\ledpb` adds a page break.
- `\lednopb` prevents a page break, by adding one line to the current page if needed.

These commands have effect only at the second run.

`\ledpbsetting` These two commands take effect at the beginning of line in which they are called. For example, if you call `\ledpb` at l. 444, then l. 443 will be at p. n , and l. 444 at p. $n + 1$. However, you can change the behavior and decide they will have effect after the end of the line, adding `\ledpbsetting{after}` at the beginning of your file (better: in your preamble). With the previous example, l. 444 will be on p. n and l. 445 will be on p. $n + 1$.

If you are using `reledpar` to typeset parallel pages, you must use `\lednopb` on both sides in the two corresponding lines. This is especially important when you are using stanzas; otherwise, the pages will be out of sync.

18.2 Prevent page break in a long verses

`\lednopbinversetrue` You can also decide to prevent page breaks between two lines of a long verse. To do this, use `nopbinverse` when loading package, or add `\lednopbinversetrue` in the beginning of your file (better: in your preamble).

This feature works only with verse of 2 lines and no more. It works on the third run, or on the fourth run if using `reledpar`. By default, when a long verse runs between two pages, a page break will be placed at the beginning of the verse. However, if you have added `\ledpbsetting{after}`, the page break will be placed at the end of the long verse and the page containing the long verse will have one extra line.

19 Miscellaneous

`\extensionchars` When the package assembles the name of the auxiliary file for a section, it prefixes `\extensionchars` to the section number. This is initially defined to be empty, but you can add some characters to help distinguish these files if you like; what you use is likely to be system-dependent. If, for example, you said `\renewcommand{\extensionchars}{!}`, then you would get temporary files called `jobname. !1`, `jobname. !2`, etc.

`\ifledfinal` The package can take options. The option ‘final’, which is the default is for final typesetting; this sets `\ifledfinal` to TRUE. The other option, ‘draft’, may be useful during earlier stages and sets `\ifledfinal` to FALSE.

`\showlemma` The lemma within the text is printed via `\showlemma{lemma}`. Normally, or with the ‘final’ option, the definition of `\showlemma` is:
`\newcommand*{\showlemma}[1]{#1}`
 so it just produces its argument. With the ‘draft’ option it is defined as
`\newcommand*{\showlemma}[1]{\textit{#1}}`
 so that its argument is typeset in an italic font, which may make it easier to check that all lemmas have been treated.

If you would prefer some other style, you could put something like this in the preamble:

```
\ifledfinal\else
  \renewcommand{\showlemma}[1]{\textbf{#1}}% or simply ...[1]{#1}
\fi
```

19.1 Known and suspected limitations

19.1.1 Non-standard geometry

If you use classes other than `article` or `book`, or if you use the `geometry` package, you should use `maxhnotesX` and/or `\Xmaxhnotes` as explained in 7.12.6 p. 55 in order to prevent footnotes from overlapping the bottom margin.

19.1.2 floatrow package compatibility

The `floatrow` package must be loaded before the `reledmac`.

19.1.3 ‘No room for a new’

Sometimes, especially when using `reledmac` with other packages, you could obtain warning messages such ‘no room for a new count’ or ‘no room for a new write’.

In order to prevent such problems, the first thing is to use the options to optimize `reledmac`. For example, if you need only two series of notes, use the `series={A,B}` option. Read 16.3 p. 76 in order to know which are the available options.

However, if with these options you still have such messages, here are some tricks.

‘no room for a new count’ is often caused by `biblatex` being used at the same time. Load `reledmac` (and `reledpar`) *before* `biblatex`.

‘no room for a new write’ can be caused by multiple indexes. In this case, use `indextools` of `imakeidx` with the `splitindex` option, in order to obtain only one `.idx` file. If that does not solve your problem, you can use `morewrites` package. That should solve the problem, but \LaTeX will be slower.

If after reading and applying these advices you have still problem, contact us with a minimal working example.

19.1.4 Marginal notes

In general, `reledmac`’s system for adding marginal line numbers breaks anything that makes direct use of the \LaTeX insert system, which includes `marginpars`, footnotes and floats.

However, you can use both `\footnote` and the familiar footnote series notes in numbered text. A `\marginpar` in numbered text will throw away its contents and send a warning message to the terminal and log file, but will do no harm.

19.1.5 Paragraph shape

`\parshape` cannot be used within numbered text, except in a very restricted way.

`\ballast` \LaTeX is a three-pass system, but even after a document has been processed three times, there are some tricky situations in which the page breaks decided by \TeX never settle down. At each successive run, `reledmac` may oscillate between two different sets of page decisions. To stop this happening, should it arise, Wayne Sullivan suggested the inclusion of the quantity `\ballast`. The amount of `\ballast` will be subtracted from

the penalties which apply to the page breaks calculated on the *previous* run through \TeX , thus reinforcing these breaks. So if you find your page breaks oscillating, insert `\setcounter{ballast}{100}` or some such figure, and with any luck the page breaks will settle down. Luckily, this problem does not crop up at all often.

19.1.6 Paragraphed footnotes

The restriction on explicit line-breaking in paragraphed footnotes, mentioned on 7.1 p. 43, and described in more detail on XIII.6.3 p. 195, really is a nuisance if that is something you need to do. There are some possible solutions, described by Michael Downes, but this area remains unsatisfactory.

If you use more than one series of paragraphed notes, it may happen, in some particular cases, that only the footnote rule, with no accompanying footnotes, be printed. In this case use `reledmac` package option `nopenalties` which should solve the problem, but also may produce widow or orphan lines. For the time being, we have no solution of this problem.

`\footfudgefiddle`

For paragraphed footnotes \TeX has to estimate the amount of space required. If it underestimates this then the notes may get too long and run off the bottom of the text block. `\footfudgefiddle` can be increased from its default 64 (say, to 68) to increase the estimate. You have to use `\renewcommand` for this, like:

```
\renewcommand{\footfudgefiddle}{68}
```

Note that you must call it *before* `\Xarrangement{paragraph}` or `\arrangementX{paragraph}`.

Any settings to ‘geometry’ must be made before `\Xarrangement` / `\arrangementX`.

Finally, in many cases you should use `\Xmaxhnotes` and / or `\maxhnotesX` (7.12.6 p. 55), in order to define the maximum height relative to `\textheight` and not to `\vsize`, because the `\vsize` value is not the same inside and outside of the preamble.

19.1.7 Use with other packages

Because of `reledmac`’s complexity, it may not play well with other packages. In particular `reledmac` is sensitive to commands in the arguments to the `\edtext` and `*footnote` macros (this is discussed in more detail in section VI, and in particular the discussion about `\no@expands` and `\morenoexpands`). You will have to see what works or doesn’t work in your particular case.

`\morenoexpands`

You can define the macro `\morenoexpands` to modify macros that you call within `\edtext`. Because of the way `reledmac` numbers the lines the arguments to `\edtext` can be processed more than once and in some cases a macro should only be processed once. One example is the `\colorbox` macro from the `color` package, which you might use like this:

```
... \edtext{\colorbox{mycolor}{lemma}}{\Afootnote{... \colorbox{...}}}
```

If you actually try this²⁵ you will find \TeX whinging ‘Missing { inserted’, and then things start to fall apart. The trick in this case is to specify either:

²⁵Reported by Dirk-Jan Dekker in the CTT thread ‘Incompatibility of “color” package’ on 2003/08/28.

```
\newcommand{\morenoexpands}{\let\colorbox=0}
```

or

```
\makeatletter
\newcommand{\morenoexpands}{\let\colorbox\@secondoftwo}
\makeatother
```

(\@secondoftwo is an internal \LaTeX macro that takes two arguments and throws away the first one.) The first incantation lets color show in both the main text and footnotes whereas the second one shows color in the main text but kills it in the lemma and footnotes. On the other hand if you use `\textcolor` instead, like

```
... \edtext{\textcolor{mycolor}{lemma}}{\Afootnote{... \textcolor{...}}}
```

there is no need to fiddle with `\morenoexpands` as the color will naturally be displayed in both the text and footnotes. To kill the color in the lemma and footnotes, though, you can do:

```
\makeatletter
\newcommand{\morenoexpands}{\let\textcolor\@secondoftwo}
\makeatother
```

It took Peter Wilson a little while to discover all this. If you run into this sort of problem you may have to spend some time experimenting before hitting on a solution.

If you want to use the option *bottom* of the `footmisc` package, you must load this package *before* the `reledmac` package.

19.2 Parallel typesetting

Peter Wilson has developed the `ledpar` package as an extension to `ledmac` specifically for parallel typesetting of critical texts. This also cooperates with the `babel` / `polyglossia` packages for typesetting in multiple languages. `reledpar` is the successor of the primitive `ledpar` package.

Peter Wilson also developed the `ledarab` package for handling parallel Arabic text in critical editions. However, this package is not maintained by Maïeul Rouquette. You should use the capabilities of a modern TeX processor, like Xe(La)TeX

I Implementation overview

We present the `reledmac` code in roughly the order in which it is used during a run of \TeX . The order is *exactly* that in which it is read when you load the `reledmac` package, because the same file is used to generate this manual and to generate the \LaTeX package file.

Most of what follows consists of macro definitions, but there are some commands that are executed immediately—especially at the start of the code. The documentation generally describes the code from the point of view of what happens when the macros are executed, though. As each macro is introduced, its name is printed in the margin.

After package options, we begin with the commands you use to start and stop line numbering in a section of text (Section II). Next comes the machinery for writing and reading the auxiliary file for each section that helps us count lines, and for creating list macros encoding the information from that file (Section V); this auxiliary file will be read at the start of each section, to create those list macros, and a new version of the file will be started to collect information from the body of the section.

Next are commands for marking sections of the text for footnotes (Section VI), followed by the macros that take each paragraph apart, attach the line numbers and insertions, and send the result to the vertical list (Section VII). The footnote commands (Section XIII) and output routine (Section XXIII) finish the main part of the processing; cross-referencing (Section XXV) and endnotes (Section XX) complete the story.

In what follows, macros with an `@` in their name are more internal to the workings of `reledmac` than those made up just of ordinary letters, just as in `PLAIN \TeX` (see *The TeXbook*, p. 344). You are meant to be able to make free with ordinary macros, but the ‘`@`’ ones should be treated with more respect, and changed only if you are pretty sure of what you are doing.

II Preliminaries

II.1 Links with original `edmac`

Generally, these are the modifications to the original. `edmac` code:

- Replace as many `\def`’s by `\newcommand`’s as possible to avoid overwriting \LaTeX macros.
- Replace user-level \TeX counts by \LaTeX counters.
- Use the \LaTeX font handling mechanisms.
- Use \LaTeX messaging and file facilities.

II.2 Package declaration

Announce the name and version of the package, which is targetted for `LaTeX2e`.

```

1 %<*code>
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{reledmac}[2020/05/24 v2.32.8 typesetting critical editions]
4 %

```

II.3 Package options

`\ifparledgroup` Use this to remember which option is used, set and execute the options with final as the default. We use `xkeyval` in order to manage options with argument.

`\ifsameparallelpagenumbers`

`\ifprevpgnotnumbered`

`\ifledfinal`

`\ifnocritical@`

`\if@noeled@sec`

`\ifnoend@`

`\ifnofamiliar@`

`\ifnoledgroup@`

`\ifparapparatus@`

`\ifnoquotation@`

`\iflednopbinverse`

`\ifwidthliketwocolumns`

`\ifxindy@`

`\ifxindyhyperref@`

`\ifeledmaccompat@`

`\ifnoresetlinenumannotation@`

II.3.1 Options of reledpar

Here, we define some booleans specific to `reledpar` options, but which have consequences on `reledmac` internal commands.

```

7 \newif\ifparledgroup
8 \newif\ifsameparallelpagenumbers%
9 \newif\ifprevpgnotnumbered%%
10 %

```

II.3.2 Options of reledmac

```

11 \DeclareOptionX{series}[A,B,C,D,E]{\xdef\default@series{#1}}
12 \ExecuteOptionsX{series}%
13
14 \newif\if@noeled@sec%
15 \DeclareOptionX{noeledsec}{\@noeled@sectrue}
16
17 \newif\ifnocritical@%
18 \DeclareOptionX{nocritical}{\nocritical@true}%
19
20 \newif\ifnofamiliar@%
21 \DeclareOptionX{nofamiliar}{\nofamiliar@true}%
22
23 \newif\ifnoledgroup@%
24 \DeclareOptionX{noledgroup}{\noledgroup@true}%
25
26 \newif\ifnoend@%
27 \DeclareOptionX{noend}{%
28   \let\l@dend@open\@gobble%
29   \let\l@dend@close\relax%
30   \global\let\l@dend@stuff=\relax%
31   \noend@true%
32 }%

```

```

33 \newif\ifnoquotation@
34 \DeclareOptionX{noquotation}{\noquotation@true}
35
36
37 \newif\ifledfinal
38 \DeclareOptionX{final}{\ledfinaltrue}
39 \DeclareOptionX{draft}{\ledfinalfalse}
40 \ExecuteOptionsX{final}
41
42 \newif\ifparapparatus@
43 \DeclareOptionX{parapparatus}{\parapparatus@true}
44
45 \newif\iflednopbinverse
46 \DeclareOptionX{nopbinverse}{\lednopbinversetrue}
47
48 \newif\ifwidthliketwocolumns%
49 \DeclareOptionX{widthliketwocolumns}{\widthliketwocolumnstrue}%
50
51 \newif\ifcontinuousnumberingwithcolumns
52 \DeclareOptionX{continuousnumberingwithcolumns}{\continuousnumberingwithcolumnstrue}%
53
54 \newif\ifxindy@
55 \DeclareOptionX{xindy}[eledmac-markup-attr.xdy]{%
56   \AtBeginDocument{\immediate\openout\eledmac@xindy@out=#1}%
57   \newwrite\eledmac@xindy@out%
58   \xindy@true%
59   \gdef\eledmacmarkuplocdepth{:depth 1}%
60   \AtEndDocument{\immediate\closeout\eledmac@xindy@out}%
61 }%
62
63 \newif\ifxindyhyperref@
64 \DeclareOptionX{xindy+hyperref}{%
65   \xindyhyperref@true%
66 }%
67
68 \newif\ifeledmaccompat@%
69 \DeclareOptionX{eledmac-compat}{%
70   \eledmaccompat@true%
71 }%
72 \DeclareOptionX{nopenalties}{%
73   \AtBeginDocument{\let\add@penalties\relax}%
74 }
75 \def\l@auxdir{}%
76 \DeclareOptionX{auxdir}{%
77   \xdef\l@auxdir{#1}%
78 }%
79
80 \newif\ifsw@caseinsensitive%
81 \DeclareOptionX{swcaseinsensitive}{%

```

```

82 \sw@caseinsensitivetrue%
83 }%
84 \newif\ifnoresetlinenumannotation@
85 \DeclareOptionX{noresetlinenumannotation}{%
86   \noresetlinenumannotation@true%
87 }%
88 %

```

We use the starred form of `\ProcessOptionsX` which executes options in the order listed in the source file: class options, then listed package options, so a package option can override a class option with the same name. This was suggested by Dan Luecking in the `ctt` thread *Class/package option processing*, on 27 February 2004.

```

89 \ProcessOptionsX*\relax
90
91 %

```

II.4 Loading packages

Loading package `xargs` to declare commands with optional arguments. Loading package `xparse` to declare fully expandable commands with optional argument. Ideally, we should use only `xparse` and not `xargs`. For historical reasons, we use both. `Etoolbox` is also used to make code clearer - for example, in dynamic command names (which can replace `\csname` etc.). Use suffix to declare commands with a starred version, `xstring` to work with strings, `ifluatex` and `ifxetex` to test if \LaTeX or \XeTeX is running, and `ragged2e` to manage ragged justification for paragraphed notes.

```

92 \RequirePackage{xargs}
93 \RequirePackage{xparse}[2017/03/07]%
94 \RequirePackage{etoolbox}
95 \@ifl@t@r\fmtversion{2015/10/01}
96 {\ifboolexpr{not test{\@ifl@t@r\fmtversion{2016/03/31}} or (test{\
97   \ifdefstring{\fmtversion}{2016/03/31}} and test {\ifnumless{\patch@level
98   }{3}})}}%
99   {\PackageWarning{reledmac}{You are using a LaTeX version older than
100    2016/03/31 patch 3.%
101    \MessageBreak You are strongly encouraged to use a newer version.}}%
102   }%
103 }%
104 {\RequirePackage{etex}%
105   \csname reserveinserts\endcsname{32}%
106   }%
107 \RequirePackage{suffix}
108 \RequirePackage{xstring}
109 \RequirePackage{ifluatex}
110 \RequirePackage{ragged2e}
111 \RequirePackage{ifxetex}%
112 %

```

II.5 Compatibility with Lua_T_EX

Here, we enable some primitives for Lua_T_EX.

```

110 \ifx\directlua\undefined\else%
111   \directlua{tex.enableprimitives("",{"texdir","pardir","bodydir"})}
112 \fi
113 \ifluatex%
114   \ifnum\luatexversion<110%
115     \PackageWarning{reledmac}{You need to use LuaTeX 1.1.0 or higher}{\@ehc
116   }%
117   \fi%
118 %

```

II.6 Boolean flags

`\ifl@dmemoir` Define a flag for if the memoir class has been used.

```

119 \newif\ifl@dmemoir
120 \@ifclassloaded{memoir}{\l@dmemoirtrue}{\l@dmemoirfalse}
121
122 %

```

`\if@ledgroup` Flag set to true inside a ledgroup environment.

```

123 \newif\if@ledgroup%
124 %

```

`\ifl@imakeidx` Define a flag for if the imakeidx package has been used.

```

125 \newif\ifl@imakeidx
126 \@ifpackageloaded{imakeidx}{\l@imakeidxtrue}{}%False is the default value
127 %

```

`\ifl@indextools` Define a flag for if the indextools package has been used.

```

128 \newif\ifl@indextools%
129 \@ifpackageloaded{indextools}{%
130   \l@indextoolstrue%
131   \l@imakeidxtrue%
132   \let\imki@wrindexentry\indtl@wrindexentry%
133 }{}%
134 %

```

False is the default value. We consider indextools as a variant of imakeidx. That is why we set `\ifl@imakeidx` to true. We also let `\imki@wrindexentry` to `\indtl@wrindexentry`.

`\ifl@footmisc` Define a flag if the footmisc package has been loaded.

```

135 \newif\ifl@footmisc
136 \@ifpackageloaded{footmisc}{\l@footmisctrue}{}%False is the default value
137 %

```

`\if@RTL` The `\if@RTL` is defined by the `bidi` package, which is sometimes loaded by *polyglossia*. But we define it as well if the `bidi` package is not loaded.

```

138 \ifdef{\if@RTL}{\newif\if@RTL}
139 %

```

`\if@firstlineofpage` `\if@firstlineofpage` is set to TRUE at the first line of every page. `\if@firstlineofpageR` is for the right side.

```

140 \newif\if@firstlineofpage%
141 \newif\if@firstlineofpageR%
142 %

```

II.7 Messages

All the messages are grouped here as macros. This saves \TeX 's memory when the same message is repeated and also lets them be edited easily.

`\reledmac@warning` Write a warning message.

```

143 \newcommand{\reledmac@warning}[1]{\PackageWarning{reledmac}{#1}}
144 %

```

`\reledmac@error` Write an error message.

```

145 \newcommand{\reledmac@error}[2]{\PackageError{reledmac}{#1}{#2}}
146 %

```

```

\led@err@NumberingStarted 47 \newcommand*\led@err@NumberingStarted{%

```

```

\led@err@NumberingNotStarted 48 \reledmac@error{Numbering has already been started}{\@ehc}}

```

```

\led@err@NumberingShouldHaveStarted 49 \newcommand*\led@err@NumberingNotStarted{%

```

```

150 \reledmac@error{Numbering was not started}{\@ehc}}

```

```

151 \newcommand*\led@err@NumberingShouldHaveStarted{%

```

```

152 \reledmac@error{Numbering should already have been started}{\@ehc}}

```

```

153 %

```

```

\led@err@samewordRTL 54 \newcommand*\led@err@samewordRTL{%

```

```

155 \reledmac@error{You can't use \string\sameword \MessageBreak with XeLaTeX
\MessageBreak when typesetting RTL text.\MessageBreak Please use LuaTeX
instead.}{\@ehc}%

```

```

156 }%

```

```

157 %

```

```

\led@err@edtextoutsidepstart 58 \newcommand*{\led@err@edtextoutsidepstart}{%
\led@err@PstartInEdtext 59 \reledmac@error{\string\edtext\space outside numbered paragraph (\pstart\
\led@err@PendInEdtext space ... \space\pend)}{\@ehc}}%
160
161 \newcommand{\led@err@PstartInEdtext}[1]{%
162 \reledmac@error{\string\pstart\space in \string\edtext\space #1 argument
}\@ehc}%
163 }%
164
165 \newcommand{\led@err@PendInEdtext}[1]{%
166 \reledmac@error{\string\pend\space in \string\edtext\space #1 argument}{\
@ehc}%
167 }%
168 %

\led@mess@NotesChanged 69 \newcommand*{\led@mess@NotesChanged}{%
170 \typeout{\reledmac reminder: }%
171 \typeout{ The number of the footnotes in this section
172 has changed since the last run.}%
173 \typeout{ You will need to run LaTeX two more times
174 before the footnote placement}%
175 \typeout{ and line numbering in this section are
176 correct.}}
177 %

\led@mess@SectionContinued 78 \newcommand*{\led@mess@SectionContinued}[1]{%
179 \message{Section #1 (continuing the previous section)}}
180 %

\led@err@LineationInNumbered 81 \newcommand*{\led@err@LineationInNumbered}{%
182 \reledmac@error{You can't use \string\lineation\space within
183 a numbered section}{\@ehc}}
184 %

\led@warn@BadLineation 85 \newcommand*{\led@warn@BadLineation}{%
\led@warn@BadLinenummargin 86 \reledmac@warning{Bad \string\lineation\space argument}}
\led@warn@BadLockdisp 87 \newcommand*{\led@warn@BadLinenummargin}{%
\led@warn@BadSublockdisp 88 \reledmac@warning{Bad \string\linenummargin\space argument}}
189 \newcommand*{\led@warn@BadLockdisp}{%
190 \reledmac@warning{Bad \string\lockdisp\space argument}}
191 \newcommand*{\led@warn@BadSublockdisp}{%
192 \reledmac@warning{Bad \string\sublockdisp\space argument}}
193 %

```

```

\led@warn@NoFile94 \newcommand*{\led@warn@NoFile}[1]{%
195 \reledmac@warning{File `#1' not found}}
196 %

\led@warn@LineFileObsolete97 \newcommand*{\led@warn@Obsolete}[1]{%
198 \reledmac@warning{Line-list file #1 was obsolete. We have not read it.
Please run LaTeX again.}}
199 %

\led@warn@BadAdvancelineSubline00 \newcommand*{\led@warn@BadAdvancelineSubline}{%
\led@warn@BadAdvancelineLine01 \reledmac@warning{\string\advanceline\space produced a sub-line
202 number less than zero.}}
203 \newcommand*{\led@warn@BadAdvancelineLine}{%
204 \reledmac@warning{\string\advanceline\space produced a line
205 number less than zero.}}
206 %

\led@warn@BadSetline07 \newcommand*{\led@warn@BadSetline}{%
\led@warn@BadSetlinenum08 \reledmac@warning{Bad \string\setline\space argument}}
209 \newcommand*{\led@warn@BadSetlinenum}{%
210 \reledmac@warning{Bad \string\setlinenum\space argument}}
211 %

\led@err@PstartNotNumbered12 \newcommand*{\led@err@PstartNotNumbered}{%
\led@err@PstartInPstart13 \reledmac@error{\string\pstart\space must be used within a
\led@err@PendNotNumbered14 numbered section %
\led@err@PendNoPstart15 (\string\beginnumbering\space ... \space \string\
endnumbering)}{\@ehc}}%
\led@err@AutoparNotNumbered16 \newcommand*{\led@err@PstartInPstart}{%
\led@err@NumberingWithoutPstart17 \reledmac@error{\string\pstart\space encountered while another
\string\pstart\space was in effect}{\@ehc}}
218 \newcommand*{\led@err@PendNotNumbered}{%
219 \reledmac@error{\string\pend\space must be used within a
220 numbered section}{\@ehc}}
221 \newcommand*{\led@err@PendNoPstart}{%
222 \reledmac@error{\string\pend\space must follow a \string\pstart}{\@ehc}}
223 \newcommand*{\led@err@AutoparNotNumbered}{%
224 \reledmac@error{\string\autopar\space must be used within a
225 numbered section}{\@ehc}}
226 \newcommand*{\led@err@NumberingWithoutPstart}{%
227 \reledmac@error{\string\beginnumbering... \string\endnumbering\space
228 without \string\pstart}{\@ehc}}%
229 %

```

```

\led@warn@BadAction230 \newcommand*{\led@warn@BadAction}{%
231 \reledmac@warning{Bad action code, value \next@action.}}
232 %

\led@warn@DuplicateLabel233 \newcommand*{\led@warn@DuplicateLabel}[1]{%
\ppLabelOutSecondArgEdtext234 \reledmac@warning{Duplicate definition of label `#1'\@gobble}%
\led@warn@RefUndefined235 \@latex@warning@no@line{Label `#1' multiply defined}%
\led@warn@RefUndefined236 }%
237 \newcommand*{\led@warn@AppLabelOutSecondArgEdtext}[1]{%
238 \reledmac@warning{\string\applabel\space outside of the second argument
of an \string\edtext\space `#1' on page \thepage.}}%
239 \newcommand*{\led@warn@RefUndefined}[1]{%
240 \G@refundefinedtrue%
241 \reledmac@warning{Reference `#1' on page \thepage\space undefined.%
242 Using `000'.}%
243 \@latex@warning{Reference `#1' undefined\on@line}%
244 }%
245 \newcommand*{\led@warn@pairRefUndefined}[1]{%
246 \G@refundefinedtrue%
247 \reledmac@warning{Reference `#1:start' and/or `#1:end' on page \thepage\
space undefined.
248 Using `??'.}%
249 \@latex@warning{Reference `#1:start' and/or `#1:end' undefined\on@line}%
250 }
251 %

\led@warn@NoMarginpars252 \newcommand*{\led@warn@NoMarginpars}{%
253 \reledmac@warning{You can't use \string\marginpar\space in numbered text
}}
254 %

\led@warn@BadSidenotemargin255 \newcommand*{\led@warn@BadSidenotemargin}{%
256 \reledmac@warning{Bad \string\sidenotemmargin\space argument}}
257 %

\led@warn@NoIndexFile258 \newcommand*{\led@warn@NoIndexFile}[1]{%
259 \reledmac@warning{Undefined index file #1}}
260 %

\led@warn@SeriesStillExist261 \newcommand{\led@warn@SeriesStillExist}[1]{%
262 \reledmac@warning{Series #1 is still existing !}%
263 }%
264 %

```

```

\led@err@BadAction265 \newcommand*\led@err@StanzaIndentNotDefined}{%
266 \reledmac@error{You have not defined the indentation for the line \number
\stanza@count}{\@ehc}}%
267 %

```

```

\led@err@ManySidenotes268 \newcommand{\led@err@ManySidenotes}{%
\led@err@ManyLeftnotes269 \ifledRcol{%
\led@err@ManyRightnotes270 \reledmac@warning{\itemcount@space sidenotes on line \the\line@numR\
space p. \the\page@numR}%
271 \else%
272 \reledmac@warning{\itemcount@space sidenotes on line \the\line@num\
space p. \the\page@num}%
273 \fi%
274 }%
275 \newcommand{\led@err@ManyLeftnotes}{%
276 \ifledRcol{%
277 \reledmac@warning{\itemcount@space leftnotes on line \the\line@numR\
space p. \the\page@numR}%
278 \else%
279 \reledmac@warning{\itemcount@space leftnotes on line \the\line@num\
space p. \the\page@num}%
280 \fi%
281 }%
282 \newcommand{\led@err@ManyRightnotes}{%
283 \ifledRcol{%
284 \reledmac@warning{\itemcount@space rightnotes on line \the\line@numR\
space p. \the\page@numR}%
285 \else%
286 \reledmac@warning{\itemcount@space rightnotes on line \the\line@num\
space p. \the\page@num}%
287 \fi%
288 }%
289 %

```

```

\led@err@TooManyColumns290 \newcommand*\led@err@TooManyColumns}{%
\led@err@UnequalColumns291 \reledmac@error{Too many columns}{\@ehc}}
\led@err@LowStartColumn292 \newcommand*\led@err@UnequalColumns}{%
\led@err@HighEndColumn293 \reledmac@error{Number of columns is not equal to the number
\led@err@ReverseColumns294 in the previous row (or \protect\\space forgotten?)}{\@ehc}}
295 \newcommand*\led@err@LowStartColumn}{%
296 \reledmac@error{Start column is too low}{\@ehc}}
297 \newcommand*\led@err@HighEndColumn}{%
298 \reledmac@error{End column is too high}{\@ehc}}
299 \newcommand*\led@err@ReverseColumns}{%
300 \reledmac@error{Start column is greater than end column}{\@ehc}}
301 %

```

```

endnotes@outsidenumbering 302 \newcommand{\led@err@toendnotes@outsidenumbering}{%
303   \reledmac@error{\string\toendnotes\space and related commands must be
called inside a numbered texte (\string\beginnumbering\space ...\space\
string\endnumbering)}{\@ehc}%
304 }%
305 %

err@EdtextWithoutFootnote 306 \newcommand{\led@err@EdtextWithoutFootnote}{%
307   \reledmac@error{edtext without Xfootnote. Check syntaxis}{\@ehc}%
308 }%
309 %

FootnoteNotInSecondArgEdtext 310 \newcommand{\led@err@FootnoteNotInSecondArgEdtext}[1]{%
311   \reledmac@error{#1footnote outside of the second argument of an edtext.
Check syntax}{\@ehc}%
312 }%
313 %

error@PackageAfterEledmac 314 \newcommand{\led@error@PackageAfterEledmac}[1]{%
315   \reledmac@error{#1 must be loaded before reledmac}{\@ehc}%
316 }%
317 %

error@fail@patch@@makecol 318 \newcommand{\led@error@fail@patch@@makecol}{%
319   \reledmac@error{Fail to patch \string\@makecol\space command}{\@ehc}%
320 }%
321 %

error@fail@patch@@reinserts 322 \newcommand{\led@error@fail@patch@@reinserts}{%
323   \reledmac@error{Fail to patch \string\@reinserts\space command}{\@ehc}%
324 }%
325 %

error@fail@patch@@docclearpage 326 \newcommand{\led@error@fail@patch@@docclearpage}{%
327   \reledmac@error{Fail to patch \string\@docclearpage\space command}{\@ehc}%
328 }%
329 %

error@fail@patch@@iiiminipage 330 \newcommand{\led@error@fail@patch@@iiiminipage}{%
331   \reledmac@error{Fail to patch \string\@iiiminipage\space command}{\@ehc}%
332 }%
333 %

```

```

\led@error@fail@patch@endminipage334 \newcommand{\led@error@fail@patch@endminipage}{%
335   \reledmac@error{Failed to patch the \string\endminipage\space command}{\
    @ehc}%
336 }%
337 %

```

```

\led@error@fail@patch@endminipage338 \newcommand{\led@error@fail@patch@makeindex}{%
339   \reledmac@error{Failed to patch the \string\makeindex\space command}{\
    @ehc}%
340 }%
341 %

```

```

\led@warn@edinde@outsidenumbering342 \newcommand{\led@warn@edinde@outsidenumbering}{%
343   \reledmac@warning{\string\edindex\space called outside of \string\
    beginnumbering\space ... \space \string\endnumbering. \MessageBreak
    Automatically switched to \string\index.}%
344 }%
345 %

```

```

\led@warning@hsizeX@deprecated346 \newcommand{\led@warning@hsizeX@deprecated}{%
347   \reledmac@warning{\string\hsizeX\space command deprecated, use \string\
    widthX\space instead.}%
348 }%
349 %

```

```

\led@warning@Xhsize@deprecated350 \newcommand{\led@warning@Xhsize@deprecated}{%
351   \reledmac@warning{\string\Xhsize\space command deprecated, use \string\
    Xwidth\space instead.}%
352 }%
353 %

```

```

\led@warning@msdatawithoutstop354 \newcommand{\led@warning@msdatawithoutstop}{%
355   \reledmac@warning{\string\msdata\space without corresponding \string\
    stopmsdata}%
356 }%
357 %

```

```

\led@warning@preXnotes@deprecated358 \newcommand{\led@warning@preXnotes@deprecated}{%
359   \reledmac@warning@preXnotes@deprecated%
360 }%
361 %

```

II.8 Gobbling

Here, we define some commands which gobble their arguments.

```
\@gobblethree62 \providecommand*\@gobblethree}[3]{}
\@gobblefour63 \providecommand*\@gobblefour}[4]{}
\@gobbleseven64 \providecommand*\@gobbleseven}[7]{}
365 %
```

II.9 Wrapping content

`\l@wrap@ifnotemptybox` The `\l@wrap@ifnotemptybox` macro wraps its second argument in the command passed as the first argument, but only if the second argument does not produce an empty box. That is useful for example when we need to wrap something on a `\textsuperscript`.

Indeed `ab` does not produce the same typographical result as `ab`.²⁶ The `\l@wrapcs@ifnotemptybox` does the same, but take as argument a control sequence name, so without backslash.

```
366 \newcommand{\l@wrap@ifnotemptybox}[2]{%
367   \setbox0=\hbox{#2}%
368   \ifdim\wd0=\z@\else%
369     #1{#2}%
370   \fi%
371 }%
372 \newcommand{\l@wrapcs@ifnotemptybox}[2]{%
373   \l@wrap@ifnotemptybox{\csname #1\endcsname}{#2}%
374 }%
375 %
```

II.10 Miscellaneous commands

`\showlemma` `\showlemma{⟨lemma⟩}` typesets the lemma text in the body. It depends on the option.

```
376 \ifledfinal
377   \newcommand*\showlemma}[1]{#1}
378 \else
379   \newcommand*\showlemma}[1]{\underline{#1}}
380 \fi
381
382 %
```

`\linenumberlist` The code for the `\linenumberlist` mechanism was given to Peter Wilson by Wayne Sullivan on 2004/02/11.

Initialize it as `\empty`.

²⁶Compare the distance between letters in the first case (ab) and in the second one (ab).

```

383 \let\linenumberlist=\empty
384
385 %

```

`\@l@tempcnta` In imitation of \LaTeX , we create a couple of scratch counters.
`\@l@tempcntb` \LaTeX already defines `\@tempcnta` and `\@tempcntb` but Peter Wilson found in the past that it can be dangerous to use these (for example one of the AMS packages did something nasty to the `ccaption` package's use of one of these).

```

386 \newcount\@l@tempcnta \newcount\@l@tempcntb
387 %

```

II.11 Prepare `reledpar`

`\ifl@dpairing` In preparation for the `reledpar` package, these are related to the 'right' text of parallel texts (when `\ifl@dpairing` is TRUE). They are explained in the `reledpar` manual.
`\ifl@dpaging`
`\ifl@dprintingpages`

```

\ifl@dprintingcolumns
388 \newif\ifl@dpairing
\ifpst@rtedL 389 \newif\ifl@dpaging%
\l@dnumpstartsL 390 \newif\ifl@dprintingpages%
391 \newif\ifl@dprintingcolumns%
392 \newif\ifpst@rtedL
393 \newcount\l@dnumpstartsL
394 %

```

`\ifledRcol` `\ifledRcol` is set to true in the Rightside environment. It must be not confused with `\ifledRcol@` which is set to true when a right line is processed, in `\Pages` or `\Columns`.

```

395 \newif\ifledRcol
396 \newif\ifledRcol@
397 %

```

`\ifnumberingR` The `\ifnumberingR` flag is set to true if we're within a right text numbered section.

```

398 \newif\ifnumberingR
399 %

```

`\ifafterendnumberingR` The `\ifafterendnumberingR` boolean is set to TRUE at `\endnumberingR` and to FALSE at next `\beginnumberingR` or real `\beginnumbering` (not `\resumenummering`). It is mainly used for the `continuousnumberingwithcolumns`, to avoid incrementing right column line counters after a `\endnumberingR`.

```

400 \newif\ifafterendnumberingR%
401 %

```

The `\ifXnote@` macro is set to true when we are typesetting a critical footnote.

```

402 \newif\ifXnote@%
403 %

```

II.12 Booleans provided by other optional packages which are required in any case

`\ifindtl@innote` The `\ifindtl@innote` and `\ifindtl@notenumber` are required even if `indextools`
`\ifindtl@notenumber` is not used.

```
404 \providebool{indtl@innote}%
405 \providebool{indtl@notenumber}%
406 %
```

III Sectioning commands

`\section@num` You use `\beginnumbering` and `\endnumbering` to begin and end a line-numbered section of the text; the pair of commands may be used as many times as you like within one document to start and end multiple, separately line-numbered sections. \TeX will maintain and display a ‘section number’ as a count named `\section@num` that counts how many `\beginnumbering` and `\resumenumbering` commands have appeared; it need not be related to the logical divisions of your text.

`\extensionchars` Each section will read and write an associated ‘line-list file’, containing information used to do the numbering; the file will be called `\jobname.nn`, where `nn` is the section number. However, you may direct that an extra string be added before the `nn` in that filename, in order to distinguish these temporary files from others: that string is called `\extensionchars`. Initially it’s empty, since different operating systems have greatly varying ideas about what characters are permitted in file names. So `\renewcommand{\extensionchars}{-}` gives temporary files called `jobname.-1`, `jobname.-2`, etc.

```
407 \newcount\section@num
408 \section@num=0
409 \let\extensionchars=\empty
410 %
```

`\ifnumbering` The `\ifnumbering` flag is set to true if we are within a numbered section (that is,
`\numberingtrue` between `\beginnumbering` and `\endnumbering`). You can use `\ifnumbering` in your
`\numberingfalse` own code to check whether you are in a numbered section, but do not change the flag’s value.

```
411 \newif\ifnumbering
412 %
```

`\beginnumbering` `\beginnumbering` begins a section of numbered text. When it is executed we increment
`\initnumbering@reg` the section number, initialize our counters, send a message to your terminal, and call macros to start the lineation machinery and endnote files.

The initializations here are trickier than they look. `\line@list@stuff` will use all of the counters that are zeroed here when it assembles the line-list and other lists of information about the lineation. But it will do all of this locally and within a group, and

when it is done the lists will remain but the counters will return to zero. Those same counters will then be used as we process the text of this section, but the assignments will be made globally. These initializations actually apply to both uses, though in all other respects there should be no direct interaction between the use of these counters and variables in the two processing steps. For parallel processing :

- zero `\l@dnumpstartsL` — the number of chunks to be processed.
- set `\ifpst@rtedL` to FALSE.

```

413 \newcommand*{\beginnumbering}{%
414   \ifnumbering
415     \led@err@NumberingStarted
416     \endnumbering
417   \fi
418   \global\numberingtrue
419   \global\afterendnumberingRfalse%
420   \global\advance\section@num \@ne
421   \initnumbering@reg
422   \message{Section \the\section@num }%
423   \line@list@stuff{\jobname.\extensionchars\the\section@num}%
424   \ifcontinuousnumberingwithcolumns%
425     \unless\ifafterendnumberingR%
426       \unless\ifl@dpairing%
427         \ledRcoltrue%
428         \global\advance\section@numR \@ne%
429         \message{Section \the\section@numR R (continuousnumbering)}%
430         \line@list@stuffR{\jobname.\extensionchars\the\section@numR R}%
431         \ledRcolfalse%
432       \fi%
433     \fi%
434   \fi%
435   \l@dend@stuff
436   \setcounter{pstart}{1}
437   \ifl@dpairing
438     \global\l@dnumpstartsL \z@
439     \global\pst@rtedLfalse
440 %

```

The tools for section's title commands are called:

- Define an empty list of pstart number where sectioning commands are called.
- Input auxiliary file with the description of section titles.
- Open the same auxiliary file to write in.

```

441 \else
442   \begingroup
443   \global\@afterindenttrue%In order to reestablish normal feature if the \
begingroup was not here

```

```

444 \initnumbering@quote
445 \ifwidthliketwocolumns%
446 \setwidthliketwocolumns%
447 \csuse{setpositionliketwocolumns@\columns@position}%
448 \fi%
449 \fi
450 \gdef\eled@sections@{ }%
451 \if@noeled@sec\else%
452 \makeatletter%
453 \InputIfFileExists%
454 {\l@auxdir\jobname.eledsec\the\section@num}%
455 {}%
456 {\led@warn@NoFile{\l@auxdir\jobname.eledsec\the\section@num}}%
457 \makeatother%
458 \immediate\openout\eled@sectioning@out=\l@auxdir\jobname.eledsec\the\
section@num\relax%
459 \fi%
460 }
461 \newcommand*\initnumbering@reg{%
462 \global\pst@rtedLfalse
463 \global\l@dnumpstartsL \z@
464 \global\absline@num \z@
465 \gdef\normal@page@break{}
466 \gdef\l@prev@pb{}
467 \gdef\l@prev@nopb{}
468 \global\line@num \z@
469 \global\subline@num \z@
470 \global\@lock \z@
471 \global\sub@lock \z@
472 \global\sublines@false
473 \global\let\next@page@num=\relax
474 \global\let\this@section@next@page@num=\relax%
475 \global\let\sub@change=\relax
476 \global\last@page@num=-10000%
477 \ifdefined\line@numR%
478 \line@numR=\z@%
479 \last@page@numR=\z@%
480 \fi%
481 \resetprevline@
482 \resetprevpage@num
483 \global\stopmsdata@inserted@true%
484 \global\let\@msdata@list\relax%
485 \global\csundef{\@msdata@\add@msd@c @data}%
486 }
487
488 %

```

`\endnumbering` `\endnumbering` must follow the last text for a numbered section. It takes care of notifying you when changes have been noted in the input that require running the file

through again to move everything to the right place. We define it using `\def` and not `\newcommand` because \TeX does not allow defining command whose name starts by “end” except if we are currently creating an environment, which is not the case here.

```

489 \def\endnumbering{%
490   \ifnumbering
491     \global\numberingfalse
492     \normal@pars
493     \ifnum\l@dnumpstartsL=0%
494       \led@err@NumberingWithoutPstart%
495     \fi%
496 %

```

For the `continuousnumberingwithcolumn` options, we need to store a global value for the next `\endnumbering`. We don’t modify this counter globally, because that creates problem for nested `\edtext`.

```

497   \global\page@num=\this@section@page@num%
498   \global\last@page@num=\this@section@last@page@num%
499   \global\let\next@page@num\this@section@next@page@num%
500   \ifl@dpairing
501     \global\pst@rtedLfalse
502   \else
503     \ifx\insertlines@list\empty\else
504       \global\noteschanged@true
505     \fi
506     \ifx\line@list\empty\else
507       \global\noteschanged@true
508     \fi
509   \fi
510   \ifnoteschanged@
511     \led@mess@NotesChanged
512   \fi
513 \else
514   \led@err@NumberingNotStarted
515 \fi
516 \autoparfalse
517 \if@noeled@sec\else%
518   \immediate\closeout\eled@sectioning@out%
519 \fi%
520 \ifl@dpairing\else
521   \global\l@dnumpstartsL=\z@%
522 \endgroup
523 \fi
524 }
525 %

```

`\pausenumbering`
`\resumenumbering`
`\ifresumenumbering@start`
`\pausenumbering@page@num`

The `\pausenumbering` macro is just the same as `\endnumbering`, but with the `\ifnumbering` flag set to true, to show that numbering continues across the gap.²⁷ The

²⁷Peter Wilson’s thanks to Wayne Sullivan, who suggested the idea behind these macros.

`\pausenumbering@page@num` counter stores the `\this@section@next@page@num` when the `\pause@numbering` is called.

```

526 \newcount\pausenumbering@page@num%
527 \newcommand{\pausenumbering}{%
528   \ifx\this@section@next@page@num\relax%
529     \global\pausenumbering@page@num=0%
530   \else%
531     \global\pausenumbering@page@num=\this@section@next@page@num%
532   \fi%
533   \ifautopar\global\autopar@pausettrue\fi%
534   \endnumbering\global\numberingtrue}
535 %

```

The `\resumenumbering` macro is a bit more involved, but not much. It does most of the same things as `\beginnumbering`, but without resetting the various counters. Note that no check is made by `\resumenumbering` to ensure that `\pausenumbering` was actually invoked. The boolean `\ifresumenumbering@start` is set to true. That allows us to avoid resetting the line number at the first line of `\resumenumbering` if the lineation is by page. This boolean is set to false after the first action.

```

536 \newif\ifresumenumbering@start%
537 \newcommand*{\resumenumbering}{%
538   \ifnumbering
539     \ifautopar@pause\autopar\fi
540     \global\pst@rtedLtrue
541     \global\advance\section@num \@ne
542     \global\resumenumbering@starttrue%
543     \led@mess@SectionContinued{\the\section@num}%
544     \set@continuousnumberingforL%
545     \line@list@stuff{\jobname.\extensionchars\the\section@num}%
546     \ifcontinuousnumberingwithcolumns%
547       \unless\ifafterendnumberingR%
548         \unless\ifl@dpairing%
549           \ledRcoltrue%
550           \global\advance\section@numR \@ne%
551           \message{Section \the\section@numR R (continuousnumbering)}%
552           \line@list@stuffR{\jobname.\extensionchars\the\section@numR R}%
553           \ledRcolfalse%
554         \fi%
555       \fi%
556     \fi%
557     \l@dend@stuff
558     \ifl@dpairing\else%
559       \begingroup%
560       \initnumbering@quote%
561       \ifwidthliketwocolumns%
562         \setwidthliketwocolumns%
563         \csuse{setpositionliketwocolumns@}\columns@position}%
564       \fi%
565     \fi%

```

```

566 \else
567   \led@err@NumberingShouldHaveStarted
568   \endnumbering
569   \beginnumbering
570 \fi}
571
572
573 %

```

`\set@continuousnumberingforL` `\set@continuousnumberingforl` sets `pstart` counters at a `\beginnumbering` or a `\resumenumbering` in order to have continuous numbering with single column text.

```

574 \newcommand{\set@continuousnumberingforL}{%
575   \ifcontinuousnumberingwithcolumns%
576     \ifl@dpairing%
577       \unless\ifl@dpadding%
578         \global\c@pstartL=\c@pstart%
579       \fi%
580     \fi%
581   \fi%
582 }%
583 %

```

IV List macros

We will make heavy use of lists of information, which will be built up and taken apart by the following macros; they are adapted from *The TeXbook*, pp. 378–379, which discusses their use in more detail.

These macros consume a large amount of the run-time of this code. We intend to replace them in a future version, and in anticipation of doing so have defined their interface in such a way that it is not sensitive to details of the underlying code.

The historical list tools of `ledmac` are kept, because in many cause there are more useful than `etoolbox`'s lists. They allows to get and delete the first element of a list in one operation. They also expands the items add to the list.

However, `etoolbox`'s lists are more useful to loop on them. Consequently, depending of what we need, we use one or either.

It could be nice to unify them to the \LaTeX list, however such migration would take quite time with some risk of error, for a gain which will be minor.

`\list@create` The `\list@create` macro creates a new list. This macro does not do anything beyond initializing an empty list macro.

```

584 \newcommand*{\list@create}[1]{%
585   \global\let#1=\empty%
586 }%
587 %

```

`\list@clear` The `\list@clear` macro just initializes a list to the empty list; it is no different from `\list@create` in its effect, but it is in its semantic .

```
588 \newcommand*\list@clear}[1]{%
589   \global\let#1=\empty%
590 }
591 %
```

`\xright@appenditem` `\xright@appenditem` expands an item and appends it to the right end of a list macro.
`\led@toksa` We want the expansion because we will often be using this to store the current value
`\led@toksb` of a counter. `\xright@appenditem` creates global control sequences, like `\xdef`, and uses two temporary token-list registers, `\@toksa` and `\@toksb`.

```
592 \newtoks\led@toksa \newtoks\led@toksb
593 \global\led@toksa={\}
594 \long\def\xright@appenditem#1\to#2{%
595   \global\led@toksb=\expandafter{#2}%
596   \xdef#2{\the\led@toksb\the\led@toksa\expandafter{#1}}%
597   \global\led@toksb={}}
598 %
```

`\xleft@appenditem` `\xleft@appenditem` expands an item and appends it to the left end of a list macro; it is otherwise identical to `\xright@appenditem`.

```
599 \long\def\xleft@appenditem#1\to#2{%
600   \global\led@toksb=\expandafter{#2}%
601   \xdef#2{\the\led@toksa\expandafter{#1}\the\led@toksb}%
602   \global\led@toksb={}}
603 %
```

`\gl@p` The `\gl@p` macro removes the leftmost item from a list and places it in a control sequence. You type `\gl@p\l\to\z` (where `\l` is the list macro, and `\z` receives the left item). `\l` is assumed nonempty: use `\ifx\l\empty` to test for an empty `\l`. The control sequences created by `\gl@p` are all global.

```
604 \def\gl@p#1\to#2{\expandafter\gl@poff#1\gl@poff#1#2}
605 \long\def\gl@poff\#1#2\gl@poff#3#4{\gdef#4{#1}\gdef#3{#2}}
606
607 %
```

V Line counting

V.1 Choosing the system of lineation

Line number can be reset at each section (default) ; at each page ; at each pstart. Here we define internal codes for these systems and the macros.

`\ifbypstart@` The `\ifbypage@` and `\ifbypstart@` flag specify the current lineation system:
`\bypstart@true`
`\bypstart@false`
`\ifbypage@`
`\bypage@true`
`\bypage@false`

- line-of-page: `bypstart@ = false` and `bypage@ = true`.
- line-of-pstart: `bypstart@ = true` and `bypage@ = false`.

`reledmac` will use the line-of-section system unless instructed otherwise.

```
608 \newif\ifbypage@
609 \newif\ifbypstart@
610 %
```

The `\ifbypage@R` and `\ifbypstart@R` flag specify the current lineation for right side in case of using `reledpar`. They are now defined because they are used in some specific code. `reledpar` will use the line-of-section system unless instructed otherwise.

```
\ifbypage@R11 \newif\ifbypage@R
\ifbypstart@R12 \newif\ifbypstart@R
613 %
```

\lineation `\lineation{<word>}` is the macro you use to select the lineation system. Its argument is a string: either page, section or pstart.

```
614 \newcommand*{\lineation}[1]{\{
615 %
```

We can't change the lineation system inside numbering section.

```
616 \ifnumbering
617 \led@err@LineationInNumbered
618 \else
619 %
```

If the argument is page.

```
620 \def\@tempa{#1}\def\@tempb{page}%
621 \ifx\@tempa\@tempb
622 \global\bypage@true
623 \global\bypstart@false
624 \unless\ifnocritical@%
625 \Xpstart[] [false]%
626 \fi%
627 %
```

If the argument is pstart.

```
628 \else
629 \def\@tempb{pstart}%
630 \ifx\@tempa\@tempb
631 \global\bypage@false
632 \global\bypstart@true
633 \unless\ifnocritical@%
634 \Xpstart%
635 \fi%
636 %
```

And finally, if the argument is section (default).

```

637     \else
638         \def\@tempb{section}
639         \ifx\@tempa\@tempb
640             \global\bypage@false
641             \global\bystart@false
642             \unless\ifnocritical@%
643                 \Xpstart[] [false]%
644             \fi%
645 %

```

In other case, it is an error.

```

646     \else
647         \led@warn@BadLineation
648     \fi
649 \fi
650 \fi
651 \fi}}
652 %

```

V.2 Line number margin

`\linenummargin` `\linenummargin{<word>}` specify which margin line numbers are in; it takes one argument, a string, which value can be left ; right; inner or outer.

`\line@margin` The selection is recorded in the count `\line@margin`: 0 for left, 1 for right, 2 for outer, and 3 for inner.

`\l@dgetline@margin`

```

653 \newcount\line@margin%
654 \newcount\line@margin@columns%Only for parallel typesetting
655 \line@margin@columns=\m@ne%
656
657 \newcommand*{\linenummargin}[1]{%
658     \l@dgetline@margin{#1}%
659     \ifnum\@l@dttempcntb>\m@ne
660         \ifledRcol
661             \global\line@marginR=\@l@dttempcntb
662             \led@warn@setting@in@rightside{\linenummargin}%
663         \else
664             \global\line@margin=\@l@dttempcntb
665         \fi
666     \fi}}
667
668 \newcommand*{\l@dgetline@margin}[1]{%
669     \def\@tempa{#1}\def\@tempb{left}%
670     \ifx\@tempa\@tempb
671         \@l@dttempcntb \z@
672     \else
673         \def\@tempb{right}%
674         \ifx\@tempa\@tempb

```

```

675 \l@dttempcntb \@ne
676 \else
677 \def\@tempb{outer}%
678 \ifx\@tempa\@tempb
679 \l@dttempcntb \tw@
680 \else
681 \def\@tempb{inner}%
682 \ifx\@tempa\@tempb
683 \l@dttempcntb \thr@@
684 \else
685 \led@warn@BadLinenummargin
686 \l@dttempcntb \m@ne
687 \fi
688 \fi
689 \fi
690 \fi}
691
692 %

```

V.3 Line number initialization and increment

`\c@firstlinenum` The following counters tell reledmac which lines should be printed with line numbers. `firstlinenum` is the number of the first line in each section that gets a number; `linenumincrement` is the difference between successive numbered lines. The initial values of these counters produce labels on lines 5, 10, 15, etc. `linenumincrement` must be at least 1.

```

693 \newcounter{firstlinenum}
694 \setcounter{firstlinenum}{5}
695 \newcounter{linenumincrement}
696 \setcounter{linenumincrement}{5}
697 %

```

`\c@firstsublinenum` The following parameters are just like `firstlinenum` and `linenumincrement`, but for sub-line numbers. `sublinenumincrement` must be at least 1.

```

698 \newcounter{firstsublinenum}
699 \setcounter{firstsublinenum}{5}
700 \newcounter{sublinenumincrement}
701 \setcounter{sublinenumincrement}{5}
702
703 %

```

`\firstlinenum` These macros can be used to set the corresponding counters.
`\linenumincrement`
`\firstsublinenum`
`\sublinenumincrement`

```

704 \newcommand*{\firstlinenum}[1]{%
705 \ifledRcol%
706 \setcounter{firstlinenumR}{#1}%
707

```

```

708 \led@warn@setting@in@rightside{\firstlinenum}%
709 \else%
710 \setcounter{firstlinenum}{#1}%
711 \fi%
712 }
713 \newcommand*\linenumincrement}[1]{%
714 \ifledRcol%
715 \setcounter{linenumincrementR}{#1}%
716 \led@warn@setting@in@rightside{\linenumincrement}%
717 \else%
718 \setcounter{linenumincrement}{#1}%
719 \fi%
720 }
721 \newcommand*\firstsublinenum}[1]{%
722 \ifledRcol%
723 \setcounter{firstsublinenumR}{#1}%
724 \led@warn@setting@in@rightside{\firstsublinenum}%
725 \else%
726 \setcounter{firstsublinenum}{#1}%
727 \fi%
728 }
729 \newcommand*\sublinenumincrement}[1]{%
730 \ifledRcol%
731 \setcounter{sublinenumincrementR}{#1}%
732 \led@warn@setting@in@rightside{\sublinenumincrement}%
733 \else%
734 \setcounter{sublinenumincrement}{#1}%
735 \fi%
736 }
737 %
738 %

```

V.4 Line number locking

`\lockdisp` When line locking is being used, the `\lockdisp{⟨word⟩}` macro specifies whether a line number—if one is due to appear—should be printed on the first printed line or on the last, or by all of them. Its argument is a word, either `first`, `last`, or `all`. Initially, it is set to `first`.

`\lock@disp` encodes the selection: 0 for first, 1 for last, 2 for all.

```

739 \newcount\lock@disp
740 \newcommand{\lockdisp}[1]{%
741 \l@dgetlock@disp{#1}%
742 \ifnum\l@dtempcntb>\m@ne
743 \global\lock@disp=\l@dtempcntb
744 \else
745 \led@warn@BadLockdisp
746 \fi}}
747 \newcommand*\l@dgetlock@disp}[1]{

```

```

748 \def\@tempa{#1}\def\@tempb{first}%
749 \ifx\@tempa\@tempb
750 \l@dttempcntb \z@
751 \else
752 \def\@tempb{last}%
753 \ifx\@tempa\@tempb
754 \l@dttempcntb \@ne
755 \else
756 \def\@tempb{all}%
757 \ifx\@tempa\@tempb
758 \l@dttempcntb \tw@
759 \else
760 \l@dttempcntb \m@ne
761 \fi
762 \fi
763 \fi}
764
765 %

```

`\sublockdisp` The same questions about where to print the line number apply to sub-lines, and these are the analogous macros for dealing with the problem.

```

766 \newcount\sublock@disp
767 \newcommand{\sublockdisp}[1]{\{%
768 \l@dgetlock@disp{#1}%
769 \ifnum\l@dttempcntb>\m@ne
770 \global\sublock@disp=\l@dttempcntb
771 \else
772 \led@warn@BadSublockdisp
773 \fi}}
774
775 %

```

V.5 Line number style

`\linenumberstyle` We provide a mechanism for using different representations of the line numbers, not just the normal arabic.

`\linenumrep` NOTE: In v0.7 `\linenumrep` and `\sublinenumrep` replaced the internal `\linenumr@p` and `\sublinenumr@p`.

`\sublinenumberstyle` `\linenumberstyle` and `\sublinenumberstyle` are user level macros for setting the number representation (`\linenumrep` and `\sublinenumrep`) for line and sub-line numbers.

`\sublinenumrep`

`\sublinenumr@p`

```

776 \newcommand*{\linenumberstyle}[1]{\%
777 \def\linenumrep##1{\@nameuse{#1}{##1}}}
778 \newcommand*{\sublinenumberstyle}[1]{\%
779 \def\sublinenumrep##1{\@nameuse{#1}{##1}}}
780 %

```

Initialise the number styles to arabic.

```

781 \linenumberstyle{arabic}
782   \let\linenumr@p\linenumrep
783 \sublinenumberstyle{arabic}
784   \let\sublinenumr@p\sublinenumrep
785
786 %

```

V.6 Line number printing

`\leftlinenum` and `\rightlinenum` are the macros that are called to print marginal line numbers on a page, for left- and right-hand margins respectively. They are made easy to access and change, since you may want to change the styling in some way. These standard versions illustrate the general sort of thing that will be needed; they are based on the `\leftheadline` macro in *The TeXbook*, p. 416.

Whatever these macros output gets printed in a box that will be put into the appropriate margin without any space between it and the line of text. You will generally want a kern between a line number and the text, and `\linenumsep` is provided as a standard way of storing its size. Line numbers are usually printed in a smaller font, and `\numlabfont` is provided as a standard name for that font. When called, these macros will be executed within a group, so font changes and the like will remain local.

`\ledlinenum` typesets the line (and subtitle) number.

The original `\numlabfont` specification is equivalent to the \TeX `\scriptsize` for a 10pt document.

```

787 \newlength{\linenumsep}
788   \setlength{\linenumsep}{1pc}
789 \newcommand*{\numlabfont}{\normalfont\scriptsize}
790 \newcommand*{\ledlinenum}{%
791   \bgroup%
792   \ifluatex%
793     \texdir TLT%
794   \fi%
795   \numlabfont%
796   \ifdefstring{\Xlinenumannotationposition@side}{before}{%
797     \l@wrap@ifnotemptybox{\Xwraplinenumannotation@side}{%
798       \csuse{annot@the\absline@num @the\section@num}%
799     }%
800   }{%
801     \linenumrep{\line@num}%
802     \ifsublines@
803       \ifnum\subline@num>0\relax
804         \unskip%
805         \Xsublinesep@side%
806         \sublinenumrep{\subline@num}%
807       \fi
808     \fi%
809     \ifdefstring{\Xlinenumannotationposition@side}{after}{%
810       \l@wrap@ifnotemptybox{\Xwraplinenumannotation@side}{%

```

```

811 \csuse{annot@the\absline@num @the\section@num}%
812 }%
813 }{}%
814 \egroup%
815 }%
816
817 \newcommand*{\leftlinenum}{%
818 \ledlinenum
819 \kern\linenumsep}
820 \newcommand*{\rightlinenum}{%
821 \kern\linenumsep
822 \ledlinenum}
823
824 %

```

V.7 Line number counters and lists

Footnote references using line numbers rather than symbols can't be generated in one pass, because we do not know the line numbers till we ship out the pages. It would be possible if footnotes were never keyed to more than one line; but some footnotes gloss passages that may run for several lines, and they must be tied to the first line of the passage glossed. And even one-line passages require two passes if we want line-per-page numbering rather than line-per-section numbering.

So we run \LaTeX over the text several times, and each time save information about page and line numbers in a 'line-list file' to be used during the next pass. At the start of each section—whenever `\beginnumbering` is executed—the line-list file for that section is read, and the information from it is encoded into a few list macros.

We need first to define the different line numbers that are involved in these macros, and the associated counters.

`\line@num` The count `\line@num` stores the line number that is used in marginal line numbering and in notes: counting either by section, page or pstart, depending on your choice for this section. This may be qualified by `\subline@num`.

```

825 \newcount\line@num
826 %

```

`\subline@num` The count `\subline@num` stores a sub-line number that qualifies `\line@num`. For example, line 10 might have sub-line numbers 1, 2 and 3, which might be printed as lines 10.1, 10.2, 10.3.

```

827 \newcount\subline@num
828 %

```

`\ifsublines@` We maintain an associated flag, `\ifsublines@`, to tell us whether we're within a sub-line range or not.

`\sublines@true`
`\sublines@false` You may wonder why we do not just use the value of `\subline@num` to determine this—treating anything greater than 0 as an indication that sub-lineation is on. We need

a separate flag because sub-lineation can be used together with line-number locking in odd ways: several pieces of a logical line might be interrupted by pieces of sub-lineated text, and those sub-line numbers should not return to zero until the next change in the major line number. This is common in the typesetting of English Renaissance verse drama, in which stage directions are given sub-line numbers: a single line of verse may be interrupted by several stage directions.

```
829 \newif\ifsublines@
830 %
```

\absline@num The count `\absline@num` stores the absolute number of lines since the start of the section: that is, the number we have actually printed, no matter what numbers we attached to them. This value is never printed on an output page, though `\line@num` will often be equal to it. It is used internally to keep track of where notes are to appear and where new pages start: using this value rather than `\line@num` is a lot simpler, because it does not depend on the lineation system in use.

```
831 \newcount\absline@num
832 %
```

We will call `\absline@num` numbers “absolute” numbers, and `\line@num` and `\subline@num` numbers “visible” numbers.

V.8 Line number locking counter

\@lock The counts `\@lock` and `\sub@lock` tell us the state of line-number and sub-line-number locking. 0 means we are not within a locked set of lines; 1 means we are at the first line in the set; 2, at some intermediate line; and 3, at the last line.

```
833 \newcount\@lock
834 \newcount\sub@lock
835 %
```

V.9 Line number associated to lemma

\line@list Now we can define the list of macros which will be created from the line-list file. We will maintain the following lists:

- **\line@list**: the page and line numbers for every lemma marked by `\edtext`. There are seven pieces of information, separated by vertical bars:
 1. the starting page,
 2. line, and
 3. sub-line numbers, followed by the
 4. ending page,
 5. line, and
 6. sub-line numbers, and then the
 7. font specifier for the lemma.

These line numbers are all visible numbers. The font specifier is a set of four codes for font encoding, family, series, and shape, separated by / characters. Thus a lemma that started on page 23, line 35 and went on until page 24, line 3 (with no sub-line numbering), and was typeset in a normal roman font would have a line list entry like this:

```
23|35|0|24|3|0|0T1/cmr/m/n.
```

There is one item in this list for every lemma marked by `\edtext`, even if there are several notes to that lemma, or no notes at all. `\edtext` reads the data in this list, making it available for use in the text of notes.

- `\insertlines@list`: the line numbers of lines that have footnotes or other insertions. These are the absolute numbers where the corresponding lemmas begin. This list contains one entry for every footnote in the section; one lemma may contribute no footnotes or many footnotes. This list is used by `\add@inserts` within `\do@line`, to tell it where to insert notes.
- `\actionlines@list`: a list of absolute line numbers at which we are to perform special actions; these actions are specified by the `\actions@list` list defined below.
- `\actions@list`: action codes corresponding to the line numbers in `\actionlines@list`. These codes tell `reledmac` what action it is supposed to take at each of these lines. One action, the page-start action, is generated behind the scenes by `reledmac` itself; the others, for specifying sub-lineation, line-number locking, and line-number alteration, are generated only by explicit commands in your input file. The page-start and line-number-alteration actions require arguments, to specify the new values for the page or line numbers; instead of storing those arguments in another list, we have chosen the action-code values so that they can encode both the action and the argument in these cases. Action codes greater than -1000 are page-start actions, and the code value is the page number; action codes less than -5000 specify line numbers, and the code value is a transformed version of the line number; action codes between these two values specify other actions which require no argument.

Here is the full list of action codes and their meanings:

Any number greater than -1000 is a page-start action: the line number associated with it is the first line on a page, and the action number is the page number. (The cutoff of -1000 is chosen because negative page-number values are used by some macro packages; we assume that page-number values less than -1000 are not common.) Page-start action codes are added to the list by the `\page@action` macro, which is (indirectly) triggered by the workings of the `\page@start` macro; that macro should always be called in the output routine, just before the page contents are assembled. `Eledmac` calls it in `\pagecontents`.

The action code -1001 specifies the start of sub-lineation: meaning that, starting with the next line, we should be advancing `\subline@num` at each start-of-line command, rather than `\line@num`.

The action code -1002 specifies the end of sub-lineation. At the next start-of-line, we should clear the sub-line counter and start advancing the line number.

The action codes for starting and ending sub-lineation are added to the list by the `\sub@action` macro, as called to implement the `\startsub` and `\endsub` macros.

The action code `-1003` specifies the start of line number locking. After the number for the current line is computed, it will remain at that value through the next line that has an action code to end locking.

The action code `-1004` specifies the end of line number locking.

The action code `-1005` specifies the start of sub-line number locking. After the number for the current sub-line is computed, it will remain at that value through the next sub-line that has an action code to end locking.

The action code `-1006` specifies the end of sub-line number locking.

The four action codes for line and sub-line number locking are added to the list by the `\do@lockon` and `\do@lockoff` macros, as called to implement the `\startlock` and `\endlock` macros.

An action code of `-5000` or less sets the current visible line number (either the line number or the sub-line number, whichever is currently being advanced) to a specific positive value. The value of the code is $-(5000 + n)$, where n is the value (always ≥ 0) assigned to the current line number. Action codes of this type are added to the list by the `\set@line@action` macro, as called to implement the `\advanceline` and `\setline` macros: this action only occurs when the user has specified some change to the line numbers using those macros. Normally `reledmac` computes the visible line numbers from the absolute line numbers with reference to the other action codes and the settings they invoke; it does not require an entry in the action-code list for every line.

- `\annot@list` stores line number annotations for the start and the end lines of each `\edtext`, as `\line@list` does for line numbers. We don't store that in the same list as line numbers as `\Xprintlines` already have height arguments, and a `TEX` macro can take at most nine arguments.

Here are the commands to create these lists:

```

836 \list@create{\line@list}
837 \list@create{\insertlines@list}
838 \list@create{\actionlines@list}
839 \list@create{\actions@list}
840 \list@create{\annot@list}%
841 %

```

```

\page@num We will need some counts while we read the line-list, for the page number and the ending
\endpage@num page, line, and sub-line numbers. Some of these will be used again later on, when we
\endline@num are acting on the data in our list macros.
\endsubline@num
842 \newcount\page@num
843 \newcount\endpage@num
844 \newcount\endline@num
845 \newcount\endsubline@num
846 %

```

`\this@section@page@num` The `\this@section@page@num` stores the page number on which a numbering section ends.

```
847 \newcount\this@section@page@num%
848 %
```

`\ifnoteschanged@`
`\noteschanged@true`
`\noteschanged@false`

If the number of the footnotes in a section is different from what it was during the last run, or if this is the very first time you've run \LaTeX , on this file, the information from the line-list used to place the notes will be wrong, and some notes will probably be misplaced. When this happens, we prefer to give a single error message for the whole section rather than messages at every point where we notice the problem, because we do not really know where in the section notes were added or removed, and the solution in any case is simply to run \LaTeX two more times; there is no fix needed to the document. The `\ifnoteschanged@` flag is set if such a change in the number of notes is discovered at any point.

```
849 \newif\ifnoteschanged@
850 %
```

`\resetprevline@` Inside the apparatus, at each note, the line number is stored in a macro called `\prevlineX`, where X is the letter of the current series. This macro is called when using `\Xnumberonlyfirstinline`. This macro must be reset at the same time as the line number. The `\resetprevline@` does this resetting for every series.

```
\resetprevline@%51 \newcommand*\resetprevline@{%
852     \def\do##1{\global\csundef{prevline##1}}%
853     \dolistloop{\@series}%
854 }
855 %
```

`\resetprevpage@num` Inside the apparatus, at each note, the page number is stored in a macro called `\prevpageX@num`, where X is the letter of the current series. This macro is called when using `\Xparafootsep` or `\parafootsepX`. This macro must be reset at the beginning of each numbered section. The `\resetprevpage@` command resets this macro for every series.

```
\resetprevpage@%56 \newcommand*\resetprevpage@num{%
857     \def\do##1{%
858         \ifcsdef{prevpage##1@num}{%
859             \global\csname prevpage##1@num\endcsname=\z@%
860             \global\csname prevpage##1@numR\endcsname=\z@%
861         }%
862         {}%
863     \ifcsdef{##1prevpage@num}{%
864         \global\csname ##1prevpage@num\endcsname=\z@%
865         \global\csname ##1prevpage@numR\endcsname=\z@%
866     }%
867     {}%
```

```

868 }%
869 \dolistloop{\@series}%
870 }
871 %

```

V.10 Reading the line-list file

`\read@linelist` `\read@linelist{<file>}` is the control sequence that is called by `\beginnumbering` (via `\line@list@stuff`) to open and process a line-list file; its argument is the name of the file. First, it clear all previous line's list.

```

872 \newread\@inputcheck
873 \newcommand*\read@linelist}[1]{%
874   \ifledRcol%
875     \list@clearing@regR%
876   \else%
877     \list@clearing@reg%
878   \fi%
879 %

```

When using `reledpar`, make sure that the `\maxlinesinpar@list` is empty (otherwise things will be thrown out of kilter if there is any old stuff still hanging in there).

```

880 \list@clear{\maxlinesinpar@list}
881 %

```

Now get the file and interpret it. When the file is there we start a new group and make some special definitions we will need to process it. It is a sequence of \TeX commands, but they require a few special settings. We make `[` and `]` become grouping characters: they are used that way in the line-list file, because we need to write them out one at a time rather than in balanced pairs, and it is easier to just use something other than real braces. `@` must become a letter, since this is run in the ordinary \LaTeX context. We ignore carriage returns, since if we are in horizontal mode they can get interpreted as spaces to be printed.

Our line, page, and line-locking counters were already zeroed by `\line@list@stuff` if this is being called from within `\beginnumbering`; sub-lineation will be turned off as well in that case. On the other hand, if this is being called from `\resumenumbering`, those things should still have the values they had when `\pausenumbering` was executed.

If the file is not there, we print an informative message.

Now, after these preliminaries, we start interpreting the file.

```

882 \get@linelistfile{#1}%
883 \@stopmsd%Security if last \endms{} is forgotten
884 \unless\ifledRcol%Get the last line of the last page
885   \csnumgdef{\lastabsline@forpage@the\page@num}{\the\absline@num}%
886   \csnumgdef{\lastline@forpage@the\page@num}{\the\line@num}%
887   \csnumgdef{\lastsubline@forpage@the\page@num}{\the\subline@num}%
888 \else%
889   \csnumgdef{\lastabsline@forpageR@the\page@numR}{\the\absline@numR}%

```

```

890 \csnumgdef{@lastline@forpageR@the\page@numR}{\the\line@numR}%
891 \csnumgdef{@lastsubline@forpageR@the\page@numR}{\the\subline@numR}%
892 \fi%
893 \endgroup
894 %

```

When the reading is done, we are all through with the line-list file. All the information we needed from it will now be encoded in our list macros.

Finally, we initialize the `\next@actionline` and `\next@action` macros, which specify where and what the next action to be taken is.

```

895 \ifledRcol
896 \global\page@numR=\m@ne
897 \ifx\actionlines@listR\empty
898 \gdef\next@actionlineR{1000000}%
899 \else
900 \glp\actionlines@listR\to\next@actionlineR
901 \glp\actions@listR\to\next@actionR
902 \fi
903 \else
904 \global\page@num=\m@ne
905 \ifx\actionlines@list\empty
906 \gdef\next@actionline{1000000}%
907 \else
908 \glp\actionlines@list\to\next@actionline
909 \glp\actions@list\to\next@action
910 \fi
911 \fi
912 }
913 %

```

`\list@clearing@reg` Clears the lists for `\read@linelist`

```

914 \newcommand*{\list@clearing@reg}{%
915 \list@clear{\line@list}%
916 \list@clear{\insertlines@list}%
917 \list@clear{\actionlines@list}%
918 \list@clear{\actions@list}%
919 \list@clear{\linesinpar@listL}%
920 \list@clear{\linesonpage@listL}%
921 }%
922 %

```

`\get@linelistfile` `reledmac` can take advantage of the L^AT_EX ‘safe file input’ macros to get the line-list file.

```

923 \newcommand*{\get@linelistfile}[1]{%
924 \InputIfFileExists{\l@auxdir#1}{%
925 \global\noteschanged@false
926 \begingroup

```

```

927 \catcode`\[=1 \catcode`\]=2
928 \makeatletter \catcode`\^^M=9}{%
929 \led@warn@NoFile{\l@auxdir#1}%
930 \global\noteschanged@true
931 \begingroup}%
932 }
933
934 %

```

This version of `\read@linelist` creates list macros containing data for the entire section, so they could get rather large. It would be no more difficult to read the line-list file incrementally rather than all at once: we could read, at the start of each paragraph, only the commands relating to that paragraph. But this would require that we have two line-lists open at once, one for reading, one for writing, and on systems without version numbers we would have to do some file renaming outside of \TeX for that to work. We have retained this slower approach to avoid that sort of hacking about, but have provided the `\pausenumbers` and `\resumenumbers` macros to help you if you run into macro memory limitations (see 5.2.7 p. 20 above).

V.11 Commands within the line-list file

This section defines the commands that can appear within a line-list file. They all have very short names because we are likely to be writing very large numbers of them out. One macro, `\@nl`, is especially short, since it will be written to the line-list file once for every line of text in a numbered section. (Another of these commands, `\@lab`, will be introduced in a later section, among the cross-referencing commands it is associated with.)

When these commands modify the various page and line counters, they deliberately do not use `\global`. This is because we want them to affect only the counter values within the current group when nested calls of `\@ref` occur. (The code assumes throughout that the value of `\globaldefs` is zero.)

The macros with `action` in their names contain all the code that modifies the action-code list: again, this is so that they can be turned off easily for nested calls of `\@ref`.

`\line@list@version` The `\line@list@version` check if the line-list file does not refers to the older commands of `reledmac`. In this case, we stop reading the line-list file. Consequently, `\line@list@version` must be the first line of a line-number file.

```

935 \newcommand{\line@list@version}[1]{%
936 \IfStrEq{#1}{\this@line@list@version}%
937 {}%
938 {\ifledRcol%
939 \led@warn@Obsolete{\jobname.\extensionchars\the\section@num}%
940 \else%
941 \led@warn@Obsolete{\jobname.\extensionchars\the\section@num}%
942 \fi%
943 \endinput%
944 }%

```

```

945 }%
946 %

```

`\@nl` `\@nl` does everything related to the start of a new line of numbered text.
`\@nl@reg`

In order to get the `\setlinenum` to work Peter Wilson had to slip in some new code at the start of the macro, to get the timing of the actions correct. The problem was that his original naive implementation of `\setlinenum` had a unfortunate tendency to change the number of the last line of the *preceding* paragraph. The new code is sort of based on the page number handling and `\setline`. It seems that a lot of fiddling with the line number internals is required.

In November 2004 in order to accurately determine page numbers Peter Wilson added these to the macro. It is now:

```
\@nl{<page counter number>}{<printed page number>}
```

We do not (yet) use the printed number (i.e., the `\thepage`) but it may come in handy later. The macro `\@page` checks if a new page has started.

Exactly what `\@nl` does depends on whether right text is being processed. That's why many code is defined in `\@nl@reg` or `\nl@regR`.

```

947
948 \newcommand*{\@nl}[2]{%
949   \@page{#1}%
950   \ifledRcol%
951     \@nl@regR%
952   \else%
953     \@nl@reg%
954   \fi%
955 }
956 \newcommand*{\@nl@reg}{%
957   \ifx\l@dchset@num\relax \else
958     \advance\absline@num \@ne
959     \csgdef{l@dchset@num@the\absline@num}{}%To remember this line have
been marked by a \setlinenum
960     \set@line@action
961     \let\l@dchset@num=\relax
962     \advance\absline@num \m@ne
963     \advance\line@num \m@ne
964   \fi
965 }%

```

First increment the absolute line-number, and perform deferred actions relating to page starts and sub-lines.

```

966 \reset@current@annot%
967 \advance\absline@num \@ne
968   \ifx\next@page@num\relax \else
969     \page@action
970     \let\next@page@num=\relax
971   \fi
972   \ifx\sub@change\relax \else
973     \ifnum\sub@change>\z@

```

```

974         \sublines@true
975     \else
976         \sublines@false
977     \fi
978     \sub@action
979     \let\sub@change=\relax
980 \fi
981 %

```

Fix the lock counters, if necessary. A value of 1 is advanced to 2; 3 advances to 0; other values are unchanged.

```

982     \ifcase\@lock
983     \or
984         \@lock \tw@
985     \or \or
986         \@lock \z@
987     \fi
988     \ifcase\sub@lock
989     \or
990         \sub@lock \tw@
991     \or \or
992         \sub@lock \z@
993     \fi
994 %

```

Now advance the visible line number, unless it has been locked.

```

995     \ifsublines@
996         \ifnum\sub@lock<\tw@
997             \advance\subline@num \@ne
998         \fi
999     \else
1000         \ifnum\@lock<\tw@
1001             \advance\line@num \@ne \subline@num \z@
1002         \fi
1003     \fi}
1004 %
1005 %

```

`\last@page@num` `\@page` determines whether or not a new page has been started, based on the page values held by `\@nl`.

`\this@section@last@page@num`

`\@page`

```

1006 \newcount\last@page@num
1007 \last@page@num=-10000
1008
1009 \newcount\this@section@last@page@num%
1010 \this@section@last@page@num=-10000%
1011
1012 \newcommand*{\@page}[1]{%
1013     \ifledRcol
1014         \ifnum #1=\last@page@numR

```

```

1015 \else
1016 \csnumgdef{\lastabsline@forpageR@the\page@numR}{\the\absline@numR}%
1017 \csnumgdef{\lastline@forpageR@the\page@numR}{\the\line@numR}%
1018 \csnumgdef{\lastsubline@forpageR@the\page@numR}{\the\subline@numR}%
1019 \ifbypage@R
1020 \ifx\l@dchset@num\relax%Not resetting if preceded by a \setlinenum
1021 \ifbool{expr{%
1022 bool{resumenummeringR@start}%
1023 and test {\ifnumequal{\last@page@numR}{-10000}}}%
1024 }%
1025 {}%
1026 {%
1027 \line@numR \z@%
1028 \subline@numR \z@%
1029 \global\csdef{reset@lineR\the\numexpr\absline@numR+1\relax @\
the\section@numR}{}%
1030 }%
1031 \fi%
1032 \fi
1033 \page@numR=#1%
1034 \this@section@page@numR=#1%
1035 \last@page@numR=#1%
1036 \this@section@last@page@numR=#1%
1037 \def\next@page@numR{#1}%
1038 \gdef\this@section@next@page@numR{#1}%
1039 \fi
1040 \else
1041 \ifnum #1=\last@page@num
1042 \else
1043 \csnumgdef{\lastabsline@forpage@the\page@num}{\the\absline@num}%
1044 \csnumgdef{\lastline@forpage@the\page@num}{\the\line@num}%
1045 \csnumgdef{\lastsubline@forpage@the\page@num}{\the\subline@num}%
1046 \ifbypage@
1047 \ifx\l@dchset@num\relax%Not resetting if preceded by a \setlinenum
1048 \line@num \z@%
1049 \subline@num \z@%
1050 \global\csdef{reset@line\the\numexpr\absline@num+1\relax @the\
section@num}{}%
1051 \fi%
1052 \fi
1053 \page@num=#1%
1054 \global\this@section@page@num=#1%
1055 \last@page@num=#1%
1056 \global\this@section@last@page@num=#1%
1057 \def\next@page@num{#1}%
1058 %

```

And we set a flag that tells \@nl that a new page number is to be set, because other associated actions shouldn't occur until the next line-start occurs.

```

1059 \gdef\this@section@next@page@num{#1}%

```

```

1060 \listxadd{\normal@page@break}{\the\absline@num}
1061 \fi
1062 \fi}
1063 %

```

\@pend These do not do anything at this point, but will have been added to the auxiliary file(s) if the `reledpar` package has been used. They are just here to stop `reledmac` from moaning if the `reledpar` is used for one run and then not for the following one.

\@lopR

```

1064 \newcommand*{\@pend}[1]{}
1065 \newcommand*{\@pendR}[1]{}
1066 \newcommand*{\@lopL}[1]{}
1067 \newcommand*{\@lopR}[1]{}
1068
1069 %

```

\sub@on The `\sub@on` and `\sub@off` macros turn sub-lineation on and off: but not directly, since such changes do not really take effect until the next line of text. Instead they set a flag that notifies `\@n1` of the necessary action.

```

1070 \newcommand*{\sub@on}{\ifsublines@
1071 \let\sub@change=\relax
1072 \else
1073 \def\sub@change{1}%
1074 \fi}
1075 \newcommand*{\sub@off}{\ifsublines@
1076 \def\sub@change{-1}%
1077 \else
1078 \let\sub@change=\relax
1079 \fi}
1080
1081 %

```

\@adv The `\@adv{<num>}` macro advances the current visible line number by the amount specified as its argument. This is used to implement `\advanceline`.

```

1082 \newcommand*{\@adv}[1]{%
1083 \ifsublines@
1084 \ifledRcol
1085 \advance\subline@numR by #1\relax
1086 \ifnum\subline@numR<\z@
1087 \led@warn@BadAdvancelineSubline
1088 \subline@numR \z@
1089 \fi
1090 \else
1091 \advance\subline@num by #1\relax
1092 \ifnum\subline@num<\z@
1093 \led@warn@BadAdvancelineSubline
1094 \subline@num \z@
1095

```

```

1096     \fi
1097   \fi
1098   \else
1099     \ifledRcol
1100       \advance\line@numR by #1\relax
1101       \ifnum\line@numR<\z@
1102         \led@warn@BadAdvancelineLine
1103         \line@numR \z@
1104       \fi
1105     \else
1106       \advance\line@num by #1\relax
1107       \ifnum\line@num<\z@
1108         \led@warn@BadAdvancelineLine
1109         \line@num \z@
1110       \fi
1111     \fi
1112   \fi
1113   \set@line@action}
1114
1115 %

```

\@set The `\@set{<num>}` macro sets the current visible line number to the value specified as its argument. This is used to implement `\setline`.

```

1116
1117 \newcommand*{\@set}[1]{%
1118   \ifledRcol
1119     \ifsublines@
1120       \subline@numR=#1\relax
1121     \else
1122       \line@numR=#1\relax
1123     \fi
1124     \set@line@action
1125   \else
1126     \ifsublines@
1127       \subline@num=#1\relax
1128     \else
1129       \line@num=#1\relax
1130     \fi
1131     \set@line@action
1132   \fi}
1133
1134 %

```

\l@d@set The `\l@d@set{<num>}` macro sets the line number for the next `\pstart` to the value specified as its argument. This is used to implement `\setlinenum`.

\l@dchset@num `\l@dchset@num` is a flag to the `\@nl?` macro. If it is not `\relax` then a linenum change is to be done.

```

1135

```

```

1136 \newcommand*{\l@d@set}[1]{%
1137   \ifledRcol
1138     \line@numR=#1\relax
1139     \advance\line@numR \@ne
1140     \def\l@dchset@num{#1}
1141   \else
1142     \line@num=#1\relax
1143     \advance\line@num \@ne
1144     \def\l@dchset@num{#1}
1145   \fi}
1146 \let\l@dchset@num\relax
1147
1148 %

```

\page@action \page@action adds an entry to the action-code list to change the page number.

```

1149
1150 \newcommand*{\page@action}{%
1151   \ifledRcol
1152     \xright@appenditem{\the\absline@numR}\to\actionlines@listR
1153     \xright@appenditem{\next@page@numR}\to\actions@listR
1154   \else
1155     \xright@appenditem{\the\absline@num}\to\actionlines@list
1156     \xright@appenditem{\next@page@num}\to\actions@list
1157   \fi}
1158 %

```

\set@line@action \set@line@action adds an entry to the action-code list to change the visible line number.

```

1159
1160 \newcommand*{\set@line@action}{%
1161   \ifledRcol
1162     \xright@appenditem{\the\absline@numR}\to\actionlines@listR
1163     \ifsublines@
1164       \@l@tempcnta=-\subline@numR
1165     \else
1166       \@l@tempcnta=-\line@numR
1167     \fi
1168     \advance\@l@tempcnta by -5000\relax
1169     \xright@appenditem{\the\@l@tempcnta}\to\actions@listR
1170   \else
1171     \xright@appenditem{\the\absline@num}\to\actionlines@list
1172     \ifsublines@
1173       \@l@tempcnta=-\subline@num
1174     \else
1175       \@l@tempcnta=-\line@num
1176     \fi
1177     \advance\@l@tempcnta by -5000\relax
1178     \xright@appenditem{\the\@l@tempcnta}\to\actions@list

```

```

1179 \fi}
1180 %

```

\sub@action \sub@action adds an entry to the action-code list to turn sub-lineation on or off, according to the current value of the \ifsublines@ flag.

```

1181
1182 \newcommand*{\sub@action}{%
1183   \ifledRcol
1184     \xright@appenditem{\the\absline@numR}\to\actionlines@listR
1185     \ifsublines@
1186       \xright@appenditem{-1001}\to\actions@listR
1187     \else
1188       \xright@appenditem{-1002}\to\actions@listR
1189     \fi
1190   \else
1191     \xright@appenditem{\the\absline@num}\to\actionlines@list
1192     \ifsublines@
1193       \xright@appenditem{-1001}\to\actions@list
1194     \else
1195       \xright@appenditem{-1002}\to\actions@list
1196     \fi
1197   \fi}
1198 %

```

\lock@on \lock@on adds an entry to the action-code list to turn line number locking on. The current setting of the sub-lineation flag tells us whether this applies to line numbers or sub-line numbers.

Adding commands to the action list is slow, and it is very often the case that a lock-on command is immediately followed by a lock-off command in the line-list file, and therefore really does nothing. We use a look-ahead scheme here to detect such pairs, and add nothing to the line-list in those cases.

```

1199 \newcommand*{\lock@on}{\futurelet\next\do@lockon}
1200
1201 \newcommand*{\do@lockon}{%
1202   \ifx\next\lock@off
1203     \global\let\lock@off=\skip@lockoff
1204   \else
1205     \ifledRcol
1206       \do@lockonR
1207     \else
1208       \do@lockonL
1209     \fi
1210   \fi}
1211
1212
1213 \newcommand*{\do@lockonL}{%
1214   \xright@appenditem{\the\absline@num}\to\actionlines@list

```

```

1215 \ifsublines@
1216 \xright@appenditem{-1005}\to\actions@list
1217 \ifnum\sub@lock=\z@
1218 \sub@lock \@ne
1219 \else
1220 \ifnum\sub@lock=\thr@@
1221 \sub@lock \@ne
1222 \fi
1223 \fi
1224 \else
1225 \xright@appenditem{-1003}\to\actions@list
1226 \ifnum\@lock=\z@
1227 \@lock \@ne
1228 \else
1229 \ifnum\@lock=\thr@@
1230 \@lock \@ne
1231 \fi
1232 \fi
1233 \fi}
1234
1235 %

```

\lock@off \lock@off adds an entry to the action-code list to turn line number locking off.

```

\do@lockoff
\do@lockoffL
\skip@lockoff
1236 \newcommand*{\do@lockoffL}{%
1237 \xright@appenditem{\the\absline@num}\to\actionlines@list
1238 \ifsublines@
1239 \xright@appenditem{-1006}\to\actions@list
1240 \ifnum\sub@lock=\tw@
1241 \sub@lock \thr@@
1242 \else
1243 \sub@lock \z@
1244 \fi
1245 \else
1246 \xright@appenditem{-1004}\to\actions@list
1247 \ifnum\@lock=\tw@
1248 \@lock \thr@@
1249 \else
1250 \@lock \z@
1251 \fi
1252 \fi}
1253
1254 \newcommand*{\do@lockoff}{%
1255 \reset@current@annot%
1256 \ifledRcol
1257 \do@lockoffR
1258 \else
1259 \do@lockoffL
1260 \fi}
1261 \newcommand*{\skip@lockoff}{\global\let\lock@off=\do@lockoff}

```

```

1262 \global\let\lock@off=\do@lockoff
1263
1264 %

```

\n@num These macros implement the `\skipnumbering` command. They use action code 1007.

```

1265 \newcommand*{\n@num}{%
1266   \ifledRcol%
1267     \xright@appenditem{\the\absline@numR}\to\actionlines@listR
1268     \xright@appenditem{-1007}\to\actions@listR
1269   \else%
1270     \xright@appenditem{\the\absline@num}\to\actionlines@list%
1271     \xright@appenditem{-1007}\to\actions@list%
1272   \fi%
1273 }%
1274
1275 %

```

\n@num@stanza This macro implements the `\skipnumbering` for stanza command. It uses action code 1008.

```

1276 \newcommand*{\n@num@stanza}{%
1277   \ifledRcol%
1278     \xright@appenditem{\the\absline@numR}\to\actionlines@listR%
1279     \xright@appenditem{-1008}\to\actions@listR%
1280   \else%
1281     \xright@appenditem{\the\absline@num}\to\actionlines@list%%
1282     \xright@appenditem{-1008}\to\actions@list%
1283   \fi%
1284 }
1285 %

```

\ifl@dhidenumber `\hidenum`bering hides number in margin. It uses action code 1009. `\hidenum`beringonleftpage and `\hidenum`beringonrightpage are variants, using action code only conditionnaly

\hidenumberingonleftpage

\hidenumberingonrightpage

```

1286 \newif\ifl@dhidenumber
1287 \newcommand*{\hidenum}{%
1288   \ifledRcol%
1289     \write\linenum@outR{\string\hide@num}%
1290   \else%
1291     \write\linenum@out{\string\hide@num}%
1292   \fi%
1293 }%
1294 \newcommand*{\hide@num}{%
1295   \ifledRcol%
1296     \xright@appenditem{\the\absline@numR}\to\actionlines@listR%
1297     \xright@appenditem{-1009}\to\actions@listR%
1298   \else%

```

```

1299 \xright@appenditem{\the\absline@num}\to\actionlines@list%%
1300 \xright@appenditem{-1009}\to\actions@list%
1301 \fi%
1302 }
1303 \newcommand*{\hidenumberingonleftpage}{%
1304 \ifledRcol%
1305 \write\linenum@outR{\string\hide@num@left}%
1306 \else%
1307 \write\linenum@out{\string\hide@num@left}%
1308 \fi%
1309 }%
1310
1311 \newcommand*{\hide@num@left}{%
1312 \ifledRcol%
1313 \ifodd\page@numR\else%
1314 \xright@appenditem{\the\absline@numR}\to\actionlines@listR%
1315 \xright@appenditem{-1009}\to\actions@listR%
1316 \fi%
1317 \else%
1318 \ifodd\page@num\else%
1319 \xright@appenditem{\the\absline@num}\to\actionlines@list%%
1320 \xright@appenditem{-1009}\to\actions@list%
1321 \fi%
1322 \fi%
1323 }%
1324
1325 \newcommand*{\hidenumberingonrightpage}{%
1326 \ifledRcol%
1327 \write\linenum@outR{\string\hide@num@right}%
1328 \else%
1329 \write\linenum@out{\string\hide@num@right}%
1330 \fi%
1331 }%
1332
1333 \newcommand*{\hide@num@right}{%
1334 \ifledRcol%
1335 \ifodd\page@numR%
1336 \xright@appenditem{\the\absline@numR}\to\actionlines@listR%
1337 \xright@appenditem{-1009}\to\actions@listR%
1338 \fi%
1339 \else%
1340 \ifodd\page@num%
1341 \xright@appenditem{\the\absline@num}\to\actionlines@list%%
1342 \xright@appenditem{-1009}\to\actions@list%
1343 \fi%
1344 \fi%
1345 }%
1346
1347 %

```

`\@ref` `\@ref` marks the start of a passage, for creation of a footnote reference. It takes two arguments:

- #1, the number of entries to add to `\insertlines@list` for this reference. This value, here and within `\edtext`, which computes it and writes it to the line-list file, will be stored in the count `\insert@count`.

```
1348 \newcount\insert@count
1349 %
```

- #2, a sequence of other line-list-file commands, executed to determine the ending line-number. (This may also include other `\@ref` commands, corresponding to uses of `\edtext` within the first argument of another instance of `\edtext`.)

`\dummy@ref` When nesting of `\@ref` commands does occur, it is necessary to temporarily redefine `\@ref` within `\@ref`, so that we are only doing one of these at a time.

```
1350 \newcommand*\@dummy@ref}[2]{#2}
1351 %
```

`\@ref@reg` The first thing `\@ref` (i.e. `\@ref@reg`) itself does is to add the specified number of items to the `\insertlines@list` list.

```
1352 \newcommand*\@ref}[2]{%
1353   \ifledRcol%
1354     \@ref@regR{#1}{#2}%
1355   \else%
1356     \@ref@reg{#1}{#2}%
1357   \fi%
1358 }%
1359 \newcommand*\@ref@reg}[2]{%
1360   \global\insert@count=#1\relax
1361   \global\advance\@edtext@level by 1%
1362   \loop\ifnum\insert@count>\z@
1363     \xright@appenditem{\the\absline@num}\to\insertlines@list
1364     \global\advance\insert@count \m@ne
1365   \repeat
1366   %
```

Next, process the second argument to determine the page and line numbers for the end of this lemma. We temporarily equate `\@ref` to a different macro that just executes its argument, so that nested `\@ref` commands are just skipped this time. Some other macros need to be temporarily redefined to suppress their action.

```
1367 \begingroup
1368   \let\@ref=\@dummy@ref
1369   \let\@lopL\@gobble
1370   \let\page@action=\relax
1371   \let\sub@action=\relax
1372   \let\set@line@action=\relax
1373   \let\@lab=\relax
```

```

1374 \let\@lemma=\relax%
1375 \let\@sw\@gobblethree%
1376 \let\store@annot@to@absline\@gobble%
1377 #2
1378 \global\endpage@num=\page@num
1379 \global\endline@num=\line@num
1380 \global\endsubline@num=\subline@num
1381 \global\let\endcurrent@annot=\current@annot%
1382 \endgroup
1383 %

```

Now store all the information about the location of the lemma's start and end in `\line@list`.

```

1384 \xright@appenditem%
1385   {\the\page@num|\the\line@num|%
1386    \ifsublines@ \the\subline@num \else 0\fi}%
1387   \the\endpage@num|\the\endline@num|%
1388   \ifsublines@ \the\endsubline@num \else 0\fi}\to\line@list
1389 \xright@appenditem%
1390   {\current@annot|\endcurrent@annot}\to\annot@list%
1391 %

```

And now, call `\@ref@reg@parsearg`, which can be also called by `\@ref@later`

```

1392 \@ref@reg@parse{#2}%
1393 %

```

Decrease edtext level counter.

```

1394 \global\advance\@edtext@level by -1%
1395 }
1396 %

```

`\@ref@reg@parse` The `\@ref@reg@parsearg` command parses the second argument of a `\@ref` or the unique argument of `\@ref@later` written in the auxiliary fill.

First, create a list which stores every second argument of each `\@sw` in this lemma, at this level. Also set the boolean about the use of lemma in this edtext level to false.

```

1397 \newcommand{\@ref@reg@parse}[1]{%
1398   \expandafter\list@create\expandafter{\csname sw@list@edtext@tmp@\the\
1399   @edtext@level\endcsname}%
1400   \providebool{lemmacommand@\the\@edtext@level}%
1401   \boolfalse{lemmacommand@\the\@edtext@level}%
1402 }
1403 %

```

Execute the second argument of `\@ref` again, to perform for real all the commands within it.

```

1402 #1%
1403 %

```

Now, we store the list of `\@sw` of this current `\edtext` as an element of the global list of list of `\@sw` for a `\edtext` depth.

```

1404 \ifnum\@edtext@level>0%
1405   \def\create@this@edtext@level{\expandafter\list@create\expandafter{\
csname sw@list@edtext@\the\@edtext@level\endcsname}}%
1406   \ifcsundef{sw@list@edtext@\the\@edtext@level}{\create@this@edtext@level
}%
1407   \letcs{\@tmp}{sw@list@edtext@\the\@edtext@level}%
1408   \letcs{\@tmpp}{sw@list@edtext@tmp@\the\@edtext@level}%
1409   \xright@appenditem{\expandonce\@tmpp}\to\@tmp%
1410   \global\cslet{sw@list@edtext@\the\@edtext@level}{\@tmp}%
1411 \fi%
1412 %

1413 }
1414
1415 %

```

`\ref@reg@later` This macro is stored in the auxiliary file when using `\edtextlater`. It is used only to get the correct value for the `\sameword` tools.

```

1416 \newcommand{\@ref@later}[1]{%
1417   \global\advance\@edtext@level by \@ne%
1418   \ifledRcol%
1419     \@ref@reg@parseR{#1}%
1420   \else%
1421     \@ref@reg@parse{#1}%
1422   \fi%
1423   \global\advance\@edtext@level by -\@ne%
1424 }%
1425 %

```

V.12 Writing to the line-list file

We have now defined all the counters, lists, and commands involved in reading the line-list file at the start of a section. Now we will cover the commands that `reledmac` uses within the text of a section to write commands out to the line-list.

`\linenum@out` The file will be opened on output stream `\linenum@out`.

```

1426 \newwrite\linenum@out
1427 %

```

`\iffirst@linenum@out@` Once any file is opened on this stream, we keep it open forever, or else switch to another file that we keep open. The reason is that we want the output routine to write the page number for every page to this file; otherwise we would have to write it at the start of every line. But it is not very easy for the output routine to tell whether an output stream is open or not. There is no way to test the status of a particular output stream directly, and the asynchronous nature of output routines makes the status hard to determine by other means.

`\first@linenum@out@true`

`\first@linenum@out@false`

We can manage pretty well by means of the `\iffirst@linenum@out@` flag; its inelegant name suggests the nature of the problem that made its creation necessary. It is set to be true before any `\linenum@out` file is opened. When such a file is opened for the first time, it is done using `\immediate`, so that it will at once be safe for the output routine to write to it; we then set this flag to false.

```
1428 \newif\iffirst@linenum@out@
1429 \first@linenum@out@true
1430 %
```

`\this@line@list@version` The commands allowed in the line-list file and their arguments can change between two version of `reledmac`. The `\this@line@list@version` command is upgraded when it happens. It is written in the file list. If we process a line-list file which used a older version, that means the commands used inside are deprecated, and we can't use them.

```
1431 \newcommand{\this@line@list@version}{7}%
1432 %
```

`\line@list@stuff` The `\line@list@stuff{<file>}` macro, which is called by `\beginnumbering`, performs all the line-list operations needed at the start of a section. Its argument is the name of the line-list file.

`\next@line@list@stuff`

```
1433 \let\next@line@list@stuff\relax%
1434 \newcommand*{\line@list@stuff}[1]{%
1435 %
```

First, define a toggle set to true when we are not in the first run.

```
1436 \global\newtoggle{notfirststrun@#1}%
1437 \IfFileExists{\l@auxdir#1}%
1438 {\global\toggletrue{notfirststrun@#1}}%
1439 {\global\togglefalse{notfirststrun@#1}}%
1440 %
```

A internal hook (not used yet).

```
1441 \next@line@list@stuff%
1442 \global\let\next@line@list@stuff\relax%
1443 %
```

Use the commands of the previous section to interpret the line-list file from the last run.

```
1444 \read@linelist{#1}%
1445 %
```

Now close the current output line-list file, if any, and open a new one. The first time we open a line-list file for output, we do it using `\immediate`, and clear the `\iffirst@linenum@out@` flag. `reledmac` and `reledpar` can fill the `\next@line@list@stuff` hook between a `\endnumbering` (associated with numbered file n) and a `\beginnumbering` (associated with numbered file $n + 1$). It allows adding content to the numbered file $n + 1$ and not n .

```

1446 \iffirst@linenum@out@
1447 \global\first@linenum@out@false%
1448 \immediate\openout\linenum@out=\l@auxdir#1\relax%
1449 \immediate\write\linenum@out{\string\line@list@version{\
this@line@list@version}}}%
1450 \ifl@dpaging%
1451 \immediate\write\linenum@out{\string\@par@sync@option{\
@par@this@sync@option}}}%
1452 \fi%
1453 \else
1454 %

```

If we get here, then this is not the first line-list we have seen, so we do not open or close the files immediately.

```

1455 \if@minipage%
1456 \leavevmode%
1457 \fi%
1458 \closeout\linenum@out%
1459 \openout\linenum@out=\l@auxdir#1\relax%
1460 \write\linenum@out{\string\line@list@version{\this@line@list@version}}
%
1461 \ifl@dpaging%
1462 \write\linenum@out{\string\@par@sync@option{\@par@this@sync@option}}
%
1463 \fi%
1464 \fi%
1465 }%
1466
1467 %

```

`\new@line` The `\new@line` macro sends the `\@n1` command to the line-list file, to mark the start of a new text line, and its page number. It writes the two forms of the page number:

- Raw form (`\the\c@page`, which can be used for numeric tests).
- Formatted form (for example, in Roman).

Actually, only the first form is used by `\@n1`. If we use the `\sameparallelpagenunder` option of `reledpar`, we must write not the real page number (i.e. page counter, defined in standard \LaTeX) but the printed page number (i.e. `par@page` counter, defined only on `reledmac`).

- For the raw form, we use `\the\c@page@page` macro, because the `{par@page}` counter is increased for each page.
- For the formatted version, `\thepage` is patched through `\par@patch@thepage`. So we have nothing to change.

```

1468 \newcommand*{\new@line}{%
1469   \set@this@c@page%
1470   \ifnumberline%
1471     \IfStrEq{\led@pb@setting}{after}%
1472       {\xifinlist{\the\absline@num}{\l@prev@nopb}%
1473        {\xifinlist{\the\absline@num}{\normal@page@break}%
1474         {\numgdef{\@next@page}{\c@par@page+\@ne}%
1475          \write\linenum@out{\string\@nl[\@next@page][\@next@page]}}%
1476        }%
1477       {\write\linenum@out{\string\@nl[\the\@this@c@page][\thepage]}}%
1478     }%
1479     {\write\linenum@out{\string\@nl[\the\@this@c@page][\thepage]}}}%
1480   {}%
1481   \IfStrEq{\led@pb@setting}{before}%
1482     {\numgdef{\next@absline}{\the\absline@num+\@ne}%
1483      \xifinlist{\next@absline}{\l@prev@nopb}%
1484      {\xifinlist{\the\absline@num}{\normal@page@break}%
1485       {\numgdef{\nc@page}{\c@par@page+\@ne}%
1486        \write\linenum@out{\string\@nl[\nc@page][\nc@page]}}%
1487      }%
1488      {\write\linenum@out{\string\@nl[\the\@this@c@page][\thepage]}}%
1489    }%
1490    {\write\linenum@out{\string\@nl[\the\@this@c@page][\thepage]}}%
1491  }%
1492  {}%
1493  \IfStrEqCase{\led@pb@setting}%
1494    {%
1495      {before}{\relax}%
1496      {after}{\relax}%
1497    }[%
1498      \write\linenum@out{\string\@nl[\the\@this@c@page][\thepage]}}%
1499  ]%
1500  \fi%
1501 }
1502
1503 \newcount\@this@c@page%%
1504 \newcommand{\set@this@c@page}{%
1505   \ifboolexpr{%
1506     bool{sameparallelpagenumber}%
1507     or bool{prevpgnotnumbered}%
1508   }%
1509   {\global\@this@c@page=\c@par@page}%
1510   {\global\@this@c@page=\c@page}%
1511 }%
1512 %

```

\if@noneed@Footnote \if@noneed@Footnote is a boolean to check if we have to print a error message when a \edtext is called without any critical notes.

`\flag@start` We enclose a lemma marked by `\edtext` in `\flag@start` and `\flag@end`: these send the `\@ref` command to the line-list file. `\edtext` is responsible for setting the value of `\insert@count` appropriately; it actually gets done by the various footnote macros.

`\flag@end`

```

1513 \newif\if@noneed@Footnote%
1514
1515 \newcommand*{\flag@start}{%
1516   \ifledRcol%
1517     \edef\next{\write\linenum@outR{%
1518       \string\@ref[\the\insert@countR] []}}%
1519     \next%
1520     \ifnum\insert@countR<1%
1521       \if@noneed@Footnote\else%
1522         \led@err@EdtextWithoutFootnote%
1523       \fi%
1524     \fi%
1525   \else%
1526     \edef\next{\write\linenum@out{%
1527       \string\@ref[\the\insert@count] []}}%
1528     \next%
1529     \ifnum\insert@count<1%
1530       \if@noneed@Footnote\else%
1531         \led@err@EdtextWithoutFootnote%
1532       \fi%
1533     \fi%
1534   \fi}%
1535
1536 \newcommand*{\flag@end}{%
1537   \ifledRcol%
1538     \write\linenum@outR{}}%
1539   \else%
1540     \write\linenum@out{}}%
1541   \fi}%
1542
1543
1544 %

```

`\flag@start@RTL` With Xe_{La}TeX, there is a problem when using RTL: the writing of a command in the numbered auxiliary files (.1, .2 etc) is reversed when the first argument of `\edtext` is typeset in one line, but it is **not** reversed when this first argument is typeset in two lines or more.²⁸

`\flag@end@RTL`

To solve this problem, we use a crossref mechanism. At the first run, we put a label, but we do not write any `\@ref` command. When the value of the label can be tested, that is after three runs, we're doing:

²⁸This problem is caused by the way Xe_{La}TeX manages right-to-left typesetting. David Carlisle explains it on <http://tex.stackexchange.com/a/333373/7712> and provides a potential solution, using `\vadjust`. However in some cases this adds spurious vertical spaces in reledmac. That is why we are using the solution explained below.

- If the first argument of `\edtext` is typeset on only one line, we first call `\flag@end`, at the point we normally call `\flag@start`, at the beginning of the content of the first argument, and we call `\flag@end` at the point we normally call `\flag@start`, at the end of the content of the first argument.
- If the first argument of `\edtext` is typeset on only two lines, we use the normal order.

This system is a workaround for the problem of order when writing in auxiliary files.

The `\flag@start@RTL` and `\flag@end@RTL` macro put the label, do the test and call the right commands.

```

1545 \newcommand{\flag@start@RTL}{%
1546   \edlabel{edtext:start:\csuse{thisedtext@the\@edtext@level}}%
1547   \IfStrEq{\xabslineref{edtext:start:\csuse{thisedtext@the\@edtext@level}}
1548     {000}%
1549     {}%
1550     {%
1551       \ifnumequal%
1552         {\xabslineref{edtext:start:\csuse{thisedtext@the\@edtext@level}}}%
1553         {\xabslineref{edtext:end:\csuse{thisedtext@the\@edtext@level}}}%
1554         {\flag@end}%
1555         {\flag@start}%
1556     }%
1557 }%
1558
1559 \newcommand{\flag@end@RTL}{%
1560   \edlabel{edtext:end:\csuse{thisedtext@the\@edtext@level}}%
1561   \IfStrEq{\xabslineref{edtext:start:\csuse{thisedtext@the\@edtext@level}}
1562     {000}%
1563     {}%
1564     {%
1565       \ifnumequal%
1566         {\xabslineref{edtext:start:\csuse{thisedtext@the\@edtext@level}}}%
1567         {\xabslineref{edtext:end:\csuse{thisedtext@the\@edtext@level}}}%
1568         {\flag@start}%
1569         {\flag@end}%
1570     }%
1571 }%
1572 %

```

`\flag@start@later` `\flag@start@later` and `\flag@end@later`: these send the `\@ref@later` to the line-list file command to the line-list file

```

1573 \newcommand*{\flag@start@later}{%
1574   \ifledRcol%
1575     \write\linenum@outR{\string\@ref@later []}%
1576   \else%

```

```

1577 \write\linenum@out{\string\@ref@later{}}%
1578 \fi%
1579 }%
1580 \newcommand{\flag@end@later}{%
1581 \ifledRcol%
1582 \write\linenum@outR{}}%
1583 \else%
1584 \write\linenum@out{}}%
1585 \fi%
1586 }
1587 %

```

\startsub **\endsub** `\startsub` and `\endsub` turn sub-lineation on and off, by writing appropriate instructions to the line-list file. When sub-lineation is in effect, the line number counter is frozen and the sub-line counter advances instead. If one of these commands appears in the middle of a line, it does not take effect until the next line; in other words, a line is counted as a line or sub-line depending on what it started out as, even if that changes in the middle.

We tinker with `\lastskip` because a command of either sort really needs to be attached to the last word preceding the change, not the first word that follows the change. This is because sub-lineation will often turn on and off in mid-line—stage directions, for example, often are mixed with dialogue in that way—and when a line is mixed we want to label it using the system that was in effect at its start. But when sub-lineation begins at the very start of a line we have a problem, if we don't put in this code.

```

1588
1589
1590 \newcommand*{\startsub}{\dimen0\lastskip
1591 \ifdim\dimen0>0pt \unskip \fi
1592 \ifledRcol \write\linenum@outR{\string\sub@on}%
1593 \else \write\linenum@out{\string\sub@on}%
1594 \fi
1595 \ifdim\dimen0>0pt \hskip\dimen0 \fi}
1596 \def\endsub{\dimen0\lastskip
1597 \ifdim\dimen0>0pt \unskip \fi
1598 \ifledRcol \write\linenum@outR{\string\sub@off}%
1599 \else \write\linenum@out{\string\sub@off}%
1600 \fi
1601 \ifdim\dimen0>0pt \hskip\dimen0 \fi}
1602
1603 %

```

\advanceline You can use `\advanceline{<num>}` in running text to advance the current visible line-number by a specified value, positive or negative.

```

1604 \newcommand*{\advanceline}[1]{\leavevmode%
1605 \ifledRcol \write\linenum@outR{\string\@adv[#1]}%
1606 \else \write\linenum@out{\string\@adv[#1]}%
1607 \fi%

```

```
1608 }
1609 %
```

\setline You can use `\setline{<num>}` in running text (i.e., within `\pstart... \pend`) to set the current visible line-number to a specified positive value.

```
1610
1611 \newcommand*{\setline}[1]{%
1612   \leavevmode%
1613   \ifnum#1<\z@
1614     \led@warn@BadSetline%
1615   \else%
1616     \ifledRcol%
1617       \write\linenum@outR{\string\@set[#1]}%
1618     \else%
1619       \write\linenum@out{\string\@set[#1]}%
1620     \fi%
1621   \fi%
1622 }%
1623
1624 %
```

\setlinenum You can use `\setlinenum{<num>}` before a `\pstart` to set the visible line-number to a specified positive value. It writes a `\l@d@set` command to the line-list file.

```
1625
1626 \newcommand*{\setlinenum}[1]{%
1627   \ifnum#1<\z@
1628     \led@warn@BadSetlinenum
1629   \else
1630     \ifledRcol \write\linenum@outR{\string\l@d@set[#1]}
1631     \else      \write\linenum@out{\string\l@d@set[#1]} \fi
1632   \fi}
1633
1634 %
```

\startlock You can use `\startlock` or `\endlock` in running text to start or end line number locking at the current line. They decide whether line numbers or sub-line numbers are affected, depending on the current state of the sub-lineation flags.

```
1635
1636 \newcommand*{\startlock}{%
1637   \ifledRcol \write\linenum@outR{\string\lock@on}%
1638   \else      \write\linenum@out{\string\lock@on}%
1639   \fi}
1640 \def\endlock{%
1641   \ifledRcol \write\linenum@outR{\string\lock@off}%
1642   \else      \write\linenum@out{\string\lock@off}%
1643   \fi}
1644 %
```

`\ifl@dskipnumber` In numbered text `\skipnumbering` will suspend the numbering for that particular line.
`\ifl@dskipversenumber`

```

\l@dskipnumbertrue
\l@dskipnumberfalse
\skipnumbering
1645 \newif\ifl@dskipnumber
1646 \newif\ifl@dskipversenumber%
1647 \newcommand*{\skipnumbering}{%
1648   \leavevmode%
1649   \ifledRcol%
1650     \ifinstanza%
1651       \write\linenum@outR{\string\n@num@stanza}%
1652     \else%
1653       \write\linenum@outR{\string\n@num}%
1654     \fi%
1655     \advanceline{-1}%
1656   \else%
1657     \ifinstanza%
1658       \write\linenum@out{\string\n@num@stanza}%
1659     \else%
1660       \write\linenum@out{\string\n@num}%
1661     \fi%
1662     \advanceline{-1}%
1663   \fi%
1664 }%
1665
1666 %

```

VI Marking text for notes

The `\edtext` macro is used to create all footnotes and endnotes, as well as to print the portion of the main text to which a given note or notes is keyed. The idea is to have that lemma appear only once in the `.tex` file: all instances of it in the main text and in the notes are copied from that one appearance.

The `\edtext` macro takes two arguments.

```
\edtext{#1}{#2}
```

- `#1` is the piece of the main text being glossed; it gets added to the main text, and is also used as a lemma for notes to it.
- `#2` is a series of subsidiary macros that generate various kinds of notes.

The `\edtext` macro may be used (somewhat) recursively; that is, `\edtext` may be used within its own first argument. The code would be much simpler without this feature, but nested notes will commonly be necessary: it is quite likely that we will have an explanatory note for a long passage and notes on variants for individual words within that passage. The situation we can't handle is overlapping notes that are not nested: for example, one note covering lines 10–15, and another covering 12–18. You can handle such cases by using the `\lemma` and `\linenum` macros within `#2`: they alter the copy

of the lemma and the line numbers that are passed to the notes, and hence allow you to overcome any limitations of this system, albeit with extra effort.

The recursive operation of `\edtext` will fail if you try to use a copy that is called something other than `\edtext`. In order to handle recursion, `\edtext` needs to redefine its own definition temporarily at one point, and that does not work if the macro you are calling is not actually named `\edtext`. There is no problem as long as `\edtext` is not invoked in the first argument. If you want to call `\edtext` something else, it is best to create instead a macro that expands to an invocation of `\edtext`, rather than copying `\edtext` and giving it a new name; otherwise you will need to add an appropriate definition for your new macro to `\morenoexpands`.

Side-effects of our line-numbering code make it impossible to use the usual footnote macros directly within a paragraph whose lines are numbered (see comments to `\do@line`, VII.2.1 p. 160). Instead, the appropriate note-generating command is appended to the list macro `\inserts@list`, and when `\pend` completes the paragraph it inserts all the notes at the proper places.

Note that we do not provide previous-note information, although it is often wanted; your own macros must handle that. We cannot do it correctly without keeping track of what kind of notes have gone past: it is not just a matter of remembering the line numbers associated with the previous invocation of `\edtext`, because that might have been for a different kind of note. It is preferable for your footnote macros to store and recall this kind of information if they need it.

VI.1 `\edtext` itself

The various note-generating macros might want to request that commands be executed not at once, but in close connection with the start or end of the lemma. For example, footnote numbers in the text should be connected to the end of the lemma; or, instead of a single macro to create a note listing variants, you might want to use several macros in series to create individual variants, which would each add information to a private macro or token register, which in turn would be formatted and output when all of #2 for the lemma has been read.

`\end@lemmas` To accomodate this, we provide a list macro to which macros may add commands that should subsequently be executed at the end of the lemma when that lemma is added to the text of the paragraph. A macro should add its contribution to `\end@lemmas` by using `\xleft@appenditem`. (Anything that needs to be done at the *start* of the lemma may be handled using `\aftergroup`, since the commands specified within `\edtext`'s second argument are executed within a group that ends just before the lemma is added to the main text.)

`\end@lemmas` is intended for the few things that need to be associated with the end of the lemma, like footnote numbers. Such numbers are not implemented in the current version, and indeed no use is currently made of `\end@lemmas` or of the `\aftergroup` trick. The general approach would be to define a macro to be used within the second argument of `\edtext` that would add the appropriate command to `\end@lemmas`.

Commands that are added to this list should always take care not to do anything that adds possible line-breaks to the output; otherwise line numbering could be thrown off.

```
1667 \list@create{\end@lemmas}
1668 %
```

`\dummy@edtext` We now need to define a number of macros that allow us to weed out nested instances of `\edtext`, and other problematic macros, from our lemma. This is similar to what we did in reading the line-list file using `\dummy@ref` and various redefinitions—and that is because nested `\edtexts` macros create nested `\@ref` entries in the line-list file.

```
1669 \newcommand{\dummy@edtext}[2]{#1}
1670 %
```

`\dummy@edtext@showlemma` Some time, we want to obtain only the first argument of `\edtext`, while also wrapping it in `\showlemma`. For example, when printing a `\eledsection`.

```
1671 \newcommand{\dummy@edtext@showlemma}[2]{\showlemma{#1}}%
1672 %
```

We are going to need another macro that takes one argument and ignores it entirely. This is supplied by the \TeX `\@gobble{arg}`.

`\no@expands` We need to turn off macro expansion for certain sorts of macros we are likely to see within the lemma and within the notes.

The first class is font-changing macros. We suppress expansion for them by letting them become equal to zero.²⁹ This is done because we want to pass into our notes the generic commands to change to roman or whatever, and not their expansions that will ask for a particular style at a specified size. The notes may well be in a smaller font, so the command should be expanded later, when the note’s environment is in effect.

A second sort to turn off includes a few of the accent macros. Most are not a problem: an accent that is expanded to an `\accent` command may be harder to read but it works just the same. The ones that cause problems are: those that use alignments— \TeX seems to get confused about the difference between alignment parameters and macro parameters; those that use temporary control sequences; and those that look carefully at what the current font is.

(The `\copyright` macro defined in `PLAIN \TeX` has this sort of problem as well, but is not used enough to bother with. That macro, and any other that causes trouble, will get by all right if you put a `\protect` in front of it in your file.)

We also need to eliminate all `reledmac` macros like `\edlabel` and `\setline` that write things to auxiliary files: that writing should be done only once. And we make `\edtext` itself, if it appears within its own argument, do nothing but copy its first argument.

Finally, we execute `\morenoexpands`. The version of `\morenoexpands` defined here does nothing; but you may define a version of your own when you need to add more expansion suppressions as needed with your macros. That makes it possible to make such additions without needing to copy or modify the standard `reledmac` code. If you define your own `\morenoexpands`, you must be very careful about spaces: if the

²⁹Since ‘control sequences equivalent to characters are not expandable’—*The \TeX book*, answer to Exercise 20.14.

macro adds any spaces to the text when it runs, extra space will appear in the main text when `\edtext` is used.

The `\newseries` command also adds `\let\footnote⟨X⟩\@gobble` to the end of the `\noexpands` macro for the series `⟨X⟩`.

(A related problem, not addressed by these two macros, is that of characters whose category code are changed by any of the macros used in the arguments to `\edtext`. Since the category codes are set when the arguments are scanned, macros that depend on changing them will not work. We have most often encountered this with characters that are made ‘active’ within text in some, but not all, of the languages used within the document. One way around the problem, if it takes this form, is to ensure that those characters are *always* active. Within languages that make no special use of them, their associated control sequences should simply return the proper character. A simpler solution is to avoid active characters, using LuaTeX or XeLaTeX.)

```

1673 \newcommand*{\noexpands}{%
1674   \let\select@lemmafnt=0%
1675   \let\startsub=\relax \let\endsub=\relax
1676   \let\startlock=\relax \let\endlock=\relax
1677   \let\edlabel=\@gobble
1678   \let\setline=\@gobble \let\advanceline=\@gobble
1679   \let\sameword\samewordinedtext%
1680   \let\edtext=\dummyedtext
1681   \let\edindex\dummyedindex%
1682   \l@dtabnoexpands
1683   \l@noexpandsedgl%
1684   \let\linenumannotation=\@gobble%
1685   \morenoexpands}
1686 \let\morenoexpands=\relax
1687
1688 %

```

`\@tag` Now, we define an empty `\@tag` command. It will be redefine by `\edtext`: its value is the first argument. It will be used by the `\Xfootnote` commands.

```

1689 \newcommand{\@tag}{}
1690 %

```

`\@edtext@level` This counter is increased by 1 at each level of `\edtext`.

```

1691 \newcount\@edtext@level%
1692 \@edtext@level=0%
1693 %

```

`\if@edtext@secondarg@` This boolean is set to TRUE before reading the second argument of a `\edtext`. It is tested on some macro which must be executed only inside a second argument.

```

1694 \newif\if@edtext@secondarg@%
1695 %

```

`\theedtext` The `edtext` counter is increased at each `\edtext` command. It is used to add to insert hyperlinks between a notes and the lemma.

```
1696 \newcounter{edtext}
1697 \renewcommand{\theedtext}{\edtxt@\the\c@edtext}%
1698 %
```

`\edtext` When executed, `\edtext` first ensures that we are in horizontal mode.

```
1699 \newcommand{\edtext}[2]{\leavevmode%
1700 %
```

Then, check if we are in a numbered paragraph (`\pstart... \pend`).

```
1701 \ifnumberedpar{}%
1702 %
```

Check the content of the arguments, to be certain there is no forbidden command inside.

```
1703 \@check@edtext@args{#1}{#2}%
1704 %
```

We increment the `\@edtext@level` \TeX counter to know in which level of `\edtext` we are.

```
1705 \global\advance\@edtext@level by 1%
1706 %
```

We also increase the `edtext` \TeX counter to insert a `hypertarget` if the `hyperref` package is loaded, and also works with `\edtext` on right-to-left typesetting with \XeTeX .

We store the value for the current level in a global macro. So we have one macro by level of `\edtext`. That is required, because `\edtext` can contain `\edtext`.

```
1707 \stepcounter{edtext}%
1708 \csxdef{thisedtext@\the\@edtext@level}{\theedtext}%
1709 %
```

By default, we do not use `\lemma`

```
1710 \global\@lemmacommand@false%
1711 %
```

```
1712 \begingroup%
1713 %
```

We get the next series of `samewords` data in the list of `samewords` data for the current `edtext` level. We push them inside `\sw@inthisedtext`.

```
1714 \ifledRcol%
1715 \ifcvoid{sw@list@edtextR@\the\@edtext@level}%
1716 { \global\let\sw@inthisedtext\empty}%
1717 { \expandafter\glp\cswname sw@list@edtextR@\the\
@edtext@level\endcsname\to\sw@inthisedtext}%
1718 \else%
1719 \ifcvoid{sw@list@edtext@\the\@edtext@level}%
```

```

1720         {\global\let\sw@inthisedtext\empty}%
1721         {\expandafter\glp\cswname sw@list@edtext@the\@edtext@level
\endcswname\to\sw@inthisedtext}%
1722     \fi%
1723 %

```

\@tag Our normal lemma is just argument #1; but that argument could have further invocations of `\edtext` within it. We get a copy of the lemma without any `\edtext` macros within it by temporarily redefining `\edtext` to just copy its first argument and ignore the other, and then expand #1 into `\@tag`, our lemma.

This is done within a group that starts here, in order to get the original `\edtext` restored; within this group we have also turned off the expansion of those control sequences commonly found within text that can cause trouble for us.

```

1724     \global\renewcommand{\@tag}{%
1725         \no@expands #1%
1726     }%
1727 %

```

\l@d@nums Prepare more data for the benefit of note-generating macros: the line references and font specifier for this lemma go to `\l@d@nums`.

```

1728     \set@line%
1729 %

```

`\insert@count` will be altered by the note-generating macros: it counts the number of deferred footnotes or other insertions generated by this instance of `\edtext`. If we are in a right column (`reledpar`), we use `\insert@countR` instead of `\insert@count`.

```

1730     \ifledRcol \global\insert@countR \z@%
1731     \else      \global\insert@count \z@ \fi%
1732 %

```

Now process the note-generating macros in argument #2 (i.e., `\Afootnote`, `\lemma`, etc.). `\ignorespaces` is here to skip over any spaces that might appear at the start of #2; otherwise they wind up in the main text. Footnote and other macros that are used within #2 should all end with `\ignorespaces` as well, to skip any spaces between macros when several are used in series.

```

1733     \@edtext@secondarg@true%
1734     \ignorespaces #2\relax%
1735     \@edtext@secondarg@false%
1736 %

```

With \LaTeX , you must track whether the language reads left to right (English) or right to left (Arabic). `reledmac` defines an `\if@RTL` boolean test is not already defined.

```

1737     \if@RTL%
1738         \flag@start@RTL%
1739     \else%

```

```

1740     \flag@start%
1741     \fi%
1742 %

```

We write in the numbered file whether the current `\edtext` has a `\lemma` in the the second argument.

```

1743     \if@lemmacommand%
1744     \ifledRcol%
1745     \write\linenum@outR{\string\@lemma}%
1746     \else%
1747     \write\linenum@out{\string\@lemma}%
1748     \fi%
1749     \fi%
1750 %

```

Finally, we are ready to admit the first argument into the current paragraph.

It is important that we generate and output all the notes for this chunk of text *before* putting the text into the paragraph: notes that are referenced by line number should generally be tied to the start of the passage they gloss, not the end. That should all be done within the expansion of #2 above, or in `\aftergroup` commands within that expansion.

```

1751     \endgroup%
1752     \ifdef{\hypertarget}%
1753     {%
1754     \Hy@raisedlink@left{\hypertarget{\csuse{thisedtext@the\
@edtext@level}:start}{}}%
1755     \showlemma{#1}%
1756     \Hy@raisedlink{\hypertarget{\csuse{thisedtext@the\@edtext@level}:
end}{}}%
1757     }%
1758     {%
1759     \showlemma{#1}%
1760     }%
1761 %

```

Finally, we add any insertions that are associated with the *end* of the lemma. Footnotes that are identified by symbols rather than by where the lemma begins in the main text need to be done here, and not above.

```

1762     \ifx\end@lemmas\empty \else%
1763     \glp\end@lemmas\to\x@lemma%
1764     \x@lemma%
1765     \global\let\x@lemma=\relax%
1766     \fi%
1767     \if@RTL%
1768     \flag@end@RTL%
1769     \else%
1770     \flag@end%
1771     \fi%
1772 %

```

We switch some flags to false.

- The one that checks having footnotes inside a `\edtext`.
- The one that says we are inside a `\edtext`. In fact, it is not a flag, but a counter which is increased to 1 in each level of `\edtext`.
- The one that says we are inside a `\@lemma`.

```
1773 \global\@noneed@Footnotefalse%
1774 \global\advance\@edtext@level by -1%
1775 \global\@lemmacommand@false%
1776 %
```

We also reset `\@beforeinsertofthisedtext`

```
1777 \global\let\@beforeinsertofthisedtext\relax%
1778 %
```

If we are outside of a numbered paragraph, we send an error message and print the first argument.

```
1779 \else%
1780 \showlemma{#1} (\textbf{\textsc{Edtext outside numbered paragraph}})\
led@err@edtextoutsidestart%
1781 \fi%
1782 }%
1783
1784
1785 %
```

`\@check@edtext@args` A macro which just checks the arguments of the `\edtext` and let know if there is some probleme, like, for example, `\pstart` inside.

```
1786 \newcommand{\@check@edtext@args}[2]{%
1787 \begingroup%
1788 \noexpandarg%
1789 \IfSubStr{#1}{\pstart}{\led@err@PstartInEdtext{first}}{}%
1790 \IfSubStr{#1}{\pend}{\led@err@PendInEdtext{first}}{}%
1791 \IfSubStr{#2}{\pstart}{\led@err@PstartInEdtext{second}}{}%
1792 \IfSubStr{#2}{\pend}{\led@err@PendInEdtext{second}}{}%
1793 \endgroup%
1794 }%
1795 %
1796 %
```

`\@beforeinsertofthisedtext` `\@beforeinsertofthisedtext` is an internal macro. `reledmac` or `reledpar` can add in this macro any content required to be executed before doing any `\insert` related to a `\edtext`. Its content is `\let` equal to `\relax` at the end of every `\edtext`.

```
1797 \let\@beforeinsertofthisedtext\relax
1798 %
```

`\ifnumberline` The `\ifnumberline` option can be set to FALSE to disable line numbering.

```
1799 \newif\ifnumberline
1800 \numberlinetrue
1801 %
```

`\set@line` The `\set@line` macro is called by `\edtext` to put the line-reference field and font specifier for the current block of text into `\l@d@nums`.

One instance of `\edtext` may generate several notes, or it may generate none — it is legitimate for argument #2 to `\edtext` to be empty. But `\flag@start` and `\flag@end` induce the generation of a single entry in `\line@list` during the next run, and it is vital to also remove one and only one `\line@list` entry here.

If no more lines are listed in `\line@list`, something is wrong — probably just some change in the input. We set all the numbers to zeros, following an old publishing convention for numerical references that have not yet been resolved.

```
1802 \newcommand*{\set@line}{%
1803   \ifl@edRcol
1804     \ifx\line@list\empty
1805       \global\noteschanged@true
1806       \xdef\l@d@nums{000|000|000|000|000|000|000|\edfont@info}%
1807     \else
1808       \gl@p\line@list\to\@tempb
1809       \xdef\l@d@nums{\@tempb|\edfont@info}%
1810       \global\let\@tempb=undefined
1811     \fi
1812     \ifx\annot@list\empty%
1813       \xdef\l@current@annotR{||}%
1814     \else%
1815       \gl@p\annot@list\to\@tempb%
1816       \xdef\l@current@annotR{\@tempb}%
1817       \global\let\@tempb=undefined%
1818     \fi%
1819   \else
1820     \ifx\line@list\empty
1821       \global\noteschanged@true
1822       \xdef\l@d@nums{000|000|000|000|000|000|000|\edfont@info}%
1823     \else
1824       \gl@p\line@list\to\@tempb
1825       \xdef\l@d@nums{\@tempb|\edfont@info}%
1826       \global\let\@tempb=undefined
1827     \fi
1828     \ifx\annot@list\empty%
1829       \xdef\l@current@annotR{||}%
1830     \else%
1831       \gl@p\annot@list\to\@tempb%
1832       \xdef\l@current@annotR{\@tempb}%
1833       \global\let\@tempb=undefined%
1834     \fi%
1835   \fi}
```

```
1836
1837 %
```

\edfont@info The macro `\edfont@info` returns coded information about the current font.

```
1838 \newcommand*\edfont@info{\f@encoding/\f@family/\f@series/\f@shape}
1839
1840 %
```

VI.2 Substitute lemma

\lemma The `\lemma{<text>}` macro allows you to change the lemma that is passed on to the notes. Read about `\@tag` in normal `\edtext` macro for more details about `\sw@list@inedtext` and `\no@expands` (VI.1 p. 141).

```
1841 \newcommand*\lemma[1]{%
1842   \global\@lemmacommand@true%
1843   \global\renewcommand{\@tag}{%
1844     \no@expands #1%
1845   }%
1846   \ignorespaces%
1847 }%
1848 %
```

\@lemma The `\@lemma` is written in the numbered file to set which `\edtext` has an `\lemma` as second argument.

```
1849 \newcommand{\@lemma}{%
1850   \booltrue{lemmacommand@the\@edtext@level}%
1851 }%
1852 %
```

\if@lemmacommand@ This boolean is set to TRUE inside a `\edtext` (or `\critext`) when a `\lemma` command is called. That is useful for some commands which can have a different behavior if the lemma in the note is different from the lemma in the main text.

```
1853 \newif\if@lemmacommand@%
1854 %
```

VI.3 Substitute line numbers

\linenum The `\linenum` macro can change any or all of the page and line numbers that are passed on to the notes.

As argument `\linenum` takes a set of seven parameters separated by vertical bars, in the format used internally for `\l@d@nums` (see V.9 p. 109): the starting page, line, and sub-line numbers, followed by the ending page, line, and sub-line numbers, and then the font specifier for the lemma. However, you can omit any parameters you do not want to change, and you can omit a string of vertical bars at the end of the argument. Hence

`\linenum{18|4|0|18|7|1|0}` is an invocation that changes all the parameters, but `\linenum{3}` only changes the starting line number, and leaves the rest unaltered.

We use `\\` as an internal separator for the macro parameters.

```

1855 \newcommand*{\linenum}[1]{%
1856   \xdef\@tempa{#1|}|}|}|}|noexpand\\l@d@nums}%
1857   \global\let\l@d@nums=\empty
1858   \expandafter\line@set\@tempa|\\ignorespaces}
1859 %

```

`\line@set` `\linenum` calls `\line@set` to do the actual work; it looks at the first number in the argument to `\linenum`, sets the corresponding value in `\l@d@nums`, and then calls itself to process the next number in the `\linenum` argument, if there are more numbers in `\l@d@nums` to process.

```

1860 \def\line@set#1|#2\\#3|#4\\{%
1861   \gdef\@tempb{#1}%
1862   \ifx\@tempb\empty
1863     \l@d@add{#3}%
1864   \else
1865     \l@d@add{#1}%
1866   \fi
1867   \gdef\@tempb{#4}%
1868   \ifx\@tempb\empty\else
1869     \l@d@add{|}\line@set#2\\#4\\%
1870   \fi}
1871 %

```

`\l@d@add` `\line@set` uses `\l@d@add` to tack numbers or vertical bars onto the right hand end of `\l@d@nums`.

```

1872 \newcommand{\l@d@add}[1]{\xdef\l@d@nums{\l@d@nums#1}}
1873
1874 %

```

`\lineannot` Last but not least, `\lineannot` allows us to substitute line number annotation. It is different from `\linenum` for backward compatibility with older versions of `reledmac`. It calls `\lineannot@set` to determine whether we must change only one annotation or two, or none.

```

1875 \newcommand*{\lineannot}[1]{%
1876   \lineannot@set#1|}%
1877 }%
1878 \def\lineannot@set#1|#2|{%
1879   \expandafter\parse@annot#1|#2|%
1880   \IfStrEq{#1}{-}%
1881     {\let\@tempa\annot@start}%
1882     {\def\@tempa{#1}}%
1883   \IfStrEq{#2}{-}%
1884     {\let\@tempb\annot@start}%

```

```

1885 {\def\@tempb{#2}}%
1886 \xdef\l@current@annot{\@tempa|\@tempb}%
1887 }%
1888 %

```

VI.4 Lemma disambiguation

The mechanism which counts the occurrence of a same word in a same line is quite complex, because, when \LaTeX reads a command between a `\pstart` and a `\pend`, it does not know yet which are the line numbers.

The general mechanism is the following:

- **At the first run**, each `\sameword` command increments an `etoolbox` counter the name of which contains the argument of the `\sameword` commands.
- Then this counter associated with the argument of `\sameword` is stored with the `\@sw` command in the auxiliary file of the current `reledmac` section (the `.1`, `.2...` file).
- **When this auxiliary file is read at the second run**, different operations are achieved:

1. Get the rank of each `\sameword` in a line (relative rank) from the rank of each `\sameword` in all the numbered section (absolute rank):
 - For each paired `\sameword` argument and absolute line number, a counter is defined. Its value corresponds to the number of times `\sameword{<argument>}` is called from the beginning of the lineation to the end of the current line. We also store the same data for the preceding absolute line number, if it does not have `\sameword{<argument>}`.
 - For each `\sameword` having the same argument, we subtract from its absolute rank the number stored for the paired `\sameword` argument and previous absolute line number. Consequently, we obtain the relative rank.
 - See the following example which explains how, for same `\sameword`, absolute ranks are transformed to relative ranks.

```

At line 1:
absolute rank 1 becomes relative rank 1-0 = 1
1 is stored for this \sameword and line 1
At line 2:
absolute rank 2 becomes relative rank 2-1 = 1
absolute rank 3 becomes relative rank 3-1 = 2
3 is stored for this \sameword and line 2
At line 3:
no \sameword for this line.
3 is stored for this \sameword and line 3
At line 4:
absolute rank 4 becomes relative rank 4-3 = 1

```

4 is stored for this \sameword and line 4

2. Create lists of lists of \sameword by depth of \edtext. That is: create a list for \edtexts of level 1, a list for \edtexts of level 2, a list for \edtexts of level 3 etc. For each \edtext in these lists, we store all of the relative ranks of \saweword which are called as lemma information. That is: 1) either called in the first argument of \sameword, or, 2) called in the \lemma macro of the second argument of \sameword AND marked by the optional argument of \saweword in first argument of \edtext.

For example, suppose a line with nested \edtexts which contains some word marked by \sameword and having the following relative rank:

bar¹ foo¹ foo² bar² foo³ (A)(B) foo⁴ bar³ (C) foo⁵ (D) bar⁴ (E)

In this example, all lemma information for \edtext is framed. The text in parenthesis is the content of critical notes associated to the preceding frame. As you can see, we have two levels of \edtext.

The list for \edtexts of level 1 is $\{\{1, 2, 2, 3, 4, 3\}, \{5, 4\}\}$.

The list for \edtexts of level 2 is $\{\{1, 2, 2, 3\}, \{5\}\}$.

As you can see, the mandatory argument of \sameword does not matter: we store the rank informations for every word potentially ambiguous.

- At the second run, when a critical notes is called, we associate it to the next item of the list associated to its \edtext level. So, in the previous example:
 - Critical notes (A) and (B) are associated with $\{1, 2, 2, 3\}$.
 - Critical note (C) is associated with $\{1, 2, 2, 3, 4, 3\}$.
 - Critical note (D) is associated with $\{5\}$.
 - Critical note (E) is associated with $\{5, 4\}$.
- At the second run, when a critical note is printed:
 - The \sameword command is let \sameword@inedtext.
 - At each call of this \sameword@inedtext, we step to the next element of the list associated to the note. Let it be r .
 - For the word marked by \sameword, we calculate how many time it is called in its line. To do it:
 - * We get the absolute line number of the current \sameword. This absolute line number was stored with a list of relative ranks for the current \edtext. That means, in the previous example, that if the absolute line number of \edtext was 1, that critical notes (A) and (B) were not associated with $\{1, 2, 2, 3\}$ but with $\{(1, 1), (2, 1), (2, 1), (3, 1)\}$. Such a method of knowing the absolute line number associated to a \sameword is required because a \edtext can overlap many lines, but \sameword can't get it.

- * When reading the auxiliary file, we get the value associated to the pair composed by the current marked word and the current absolute line number. To this value, we subtract the value associated to the pair composed by the current marked word and the previous absolute line number. Let the result be n .
- If $n > 1$, that means the current word appears more than once in its line. In this case, we call `\showwordrank` with the word as the first argument and r as the second argument. If the word is called only once, we just print it.

After theory, implementation. First, getting a sanitized form of the argument of `\sameword`

```
\get@sw@txt 1889 \newcommand{\get@sw@txt}[1]{%
1890   \begingroup%
1891   \swnoexpands%
1892   %.
```

Using case sensibility option.

```
1893   \ifsw@caseinsensitive%
1894     \def\tmpa##1{\lowercase{##1}}%
1895   \else%
1896     \def\tmpa##1{##1}%
1897   \fi%
1898   %
```

And now, define `\sw@txt`.

```
1899   \@tmpa{\protected@xdef\sw@txt{#1}}%
1900   \endgroup%
1901 }%
1902 %
```

Allow some macros inside `\sameword`. We use `\RenewExpandableDocumentCommand` to get expandable command with optional argument. Cf. <https://tex.stackexchange.com/a/384783/7712>.

```
\sw@noexpand 1903 \newcommand{\swnoexpands}{%
1904   \let\sameword\l@secondmandarg% Allow to have nested \sameword
1905   \let\emph\@firstofone%
1906   \let\textit\@firstofone%
1907   \let\textbf\@firstofone%
1908   \let\textsc\@firstofone%
1909   \let\framebox\@firstofone%
1910   \let\edtext\dummy@edtext%
1911   \RenewExpandableDocumentCommand{\edindex}{om}{}%
1912   \ifdefined\index%
1913     \RenewExpandableDocumentCommand{\index}{om}{}%
1914   \fi%
1915   \let\selectlanguage\@gobble%
```

```

1916 \let\foreignlanguage\@secondoftwo%
1917 \ifdefined\xpg@loaded%
1918 \renewcommand\do[1]{%
1919 \expandafter\RenewExpandableDocumentCommand\expandafter{\csname
text##1\endcsname}{om}{####2}%
1920 }%
1921 \expandafter\docsvlist\expandafter{\xpg@loaded}%
1922 \fi%
1923 }%
1924 %

```

`\sameword` The high level macro `\sameword`, used by the editor.

```

1925 \newcommandx\sameword}[2][1,usedefault]{%
1926 \ifxetex%
1927 \if@RTL%
1928 \led@err@samewordRTL%
1929 \fi%
1930 \fi%
1931 \leavevmode%
1932 \get@sw@txt{#2}%
1933 %

```

Now, the real code. First, increment the counter corresponding to the argument.

```

1934 \unless\ifledRcol%
1935 \csnumgdef{sw@\sw@txt}{\csuse{sw@\sw@txt}+\@ne}%
1936 %

```

Then, write its value to the numbered file.

```

1937 \protected@write\linenum@out{\string\@sw{\sw@txt}{\csuse{sw@\sw@txt}
}}{#1}}%
1938 %

```

Do the same thing if we are in the right column.

```

1939 \else%
1940 \csnumgdef{sw@\sw@txt}{\csuse{sw@\sw@txt}+\@ne}%
1941 \protected@write\linenum@outR{\string\@sw{\sw@txt}{\csuse{sw@\sw@txt}
}}{#1}}%
1942 \fi%
1943 %

```

And print the word.

```

1944 #2%
1945 }%
1946 %

```

A flag set to true if a `\@sw` relative rank must be added to the list of ranks for a specific `\edtext`.

```
\if@addsw#7 \newif\if@addsw%
1948 %
```

\@sw The command printed in the auxiliary files.

```
1949 \newcommand{\@sw}[3]{%
1950   \get@sw@txt{#1}%
1951   \unless\ifledRcol%
1952 %
```

First, define a counter which store the second argument as value for a each paired absolute line number/first argument

```
1953   \csxdef{sw@\sw@txt @\the\absline@num @\the\section@num}{#2}%
1954 %
```

If such argument was not defined for the preceding line, define it.

```
1955   \numdef{\prev@line}{\the\absline@num-1}%
1956   \ifcsundef{sw@\sw@txt @\prev@line @\the\section@num}{%
1957     \csnumgdef{sw@\sw@txt @\prev@line @\the\section@num}{#2-1}%
1958   }{}%
1959 %
```

Then, calculate the position of the word in the line.

```
1960   \numdef{\the@sw}{#2-\csuse{sw@\sw@txt @\prev@line @\the\section@num}}%
1961 %
```

And do the same thing for the right side.

```
1962 \else%
1963   \csxdef{sw@\sw@txt @\the\absline@numR @\the\section@numR @R}{#2}%
1964   \numdef{\prev@line}{\the\absline@numR-1}%
1965   \ifcsundef{sw@\sw@txt @\prev@line @\the\section@numR @R}{%
1966     \csnumgdef{sw@\sw@txt @\prev@line @\the\section@numR @R}{#2-1}%
1967   }{}%
1968   \numdef{\the@sw}{#2-\csuse{sw@\sw@txt @\prev@line @\the\section@numR @R}}%
1969 \fi%
1970 %
```

And now, add it to the list of \@sw for the current edtext, in all depth.

```
1971 \@tempcnta=\@edtext@level
1972 \@whilenum{\@tempcnta>0}\do{%
1973   \ifcsdef{sw@list@edtext@tmp@\the\@tempcnta}%
1974     {%
1975       \@addswfalse%
1976       \notbool{lemmacommand@\the\@tempcnta}%
1977       {\@addswtrue}%
1978       {\IfStrEq{#3}{inlemma}%
1979         {\@addswtrue}%
1980       }%

```

```

1981         \def\do##1{%
1982             \ifnumequal{##1}{\the\@tempcnta}%
1983             {\@addswtrue\listbreak}%
1984             {}%
1985         }%
1986         \docsvlist{#3}%
1987     }%
1988 }%
1989 \if@addsw%
1990     \letcs{\@tmp}{sw@list@edtext@tmp@\the\@tempcnta}%
1991     \ifledRcol%
1992         \xright@appenditem{\the@sw}{\the\absline@numR}}\to\@tmp%
1993     \else%
1994         \xright@appenditem{\the@sw}{\the\absline@num}}\to\@tmp%
1995     \fi%
1996     \cslet{sw@list@edtext@tmp@\the\@tempcnta}{\@tmp}%
1997     \fi%
1998 }%
1999 {}%
2000 \advance\@tempcnta by -1%
2001 }%
2002 }%
2003 %

```

`\sameword@inedtext` The command called when `\sameword` is called in a `\edtext`.

```

2004 \newcommandx{\sameword@inedtext}[2][1,usedefault]{%
2005     \get@sw@txt{#2}%
2006     \unless\ifledRcol%
2007 %

```

Just a precaution.

```

2008     \ifx\sw@list@inedtext\empty%
2009         \def\the@sw{999}%
2010         \def\this@absline{-99}%
2011     \else%
2012 %

```

But in many cases, at this step, we should have some content in the list `\sw@list@inedtext`, which contains the reference for `\edtext`.

```

2013     \gl@p\sw@list@inedtext\to\@tmp%
2014     \edef\the@sw{\expandafter\@firstoftwo\@tmp}%
2015     \edef\this@absline{\expandafter\@secondoftwo\@tmp}%
2016     \fi%
2017 %

```

First, calculate the number of occurrences of the word in the current line

```

2018     \ifcsdef{sw@\sw@txt @\this@absline @\the\section@num}{%
2019         \numdef{\prev@line}{\this@absline-1}%

```

```

2020 \numdef{\sw@atthisline}{\csuse{sw\sw@txt @\this@absline @\the\
section@num}-\csuse{sw\sw@txt @\prev@line @\the\section@num}}%
2021 }%
2022 {\numdef{\sw@atthisline}{0}}%
2023 %

```

Finally, print the rank, but only if there is more than one occurrence of the word in the current line.

```

2024 \ifnumgreater{\sw@atthisline}{1}%
2025 {\showwordrank{#2}{\the@sw}}%
2026 {#2}%
2027 %

```

And the same for right side.

```

2028 \else%
2029 \ifx\sw@list@inedtext\empty%
2030 \def\the@sw{999}%
2031 \def\this@absline{-99}%
2032 \else%
2033 \gl@p\sw@list@inedtext\to\@tmp%
2034 \edef\the@sw{\expandafter\@firstoftwo\@tmp}%
2035 \edef\this@absline{\expandafter\@secondoftwo\@tmp}%
2036 \fi%
2037 \ifcsdef{sw\sw@txt @\this@absline @\the\section@numR @R}{%
2038 \numdef{\prev@line}{\this@absline-1}%
2039 \numdef{\sw@atthisline}{\csuse{sw\sw@txt @\this@absline @\the\
section@numR @R}-\csuse{sw\sw@txt @\prev@line @\the\section@numR @R}}%
2040 }%
2041 {\numdef{\sw@atthisline}{0}}%
2042 \ifnumgreater{\sw@atthisline}{1}%
2043 {\showwordrank{#2}{\the@sw}}%
2044 {#2}%
2045 \fi%
2046 }%
2047 %

```

`\showwordrank` Finally, the way the rank will be printed.

```

2048 \newcommand{\showwordrank}[2]{%
2049 #1\textsuperscript{#2}%
2050 }%
2051 %

```

VII Paragraph decomposition and reassembly

In order to be able to count the lines of text and affix line numbers, we add an extra stage of processing for each paragraph. We send the paragraph into a box register, rather than straight onto the vertical list, and when the paragraph ends we slice the paragraph into

its component lines; to each line we add any notes or line numbers, add a command to write to the line-list, and then at last send the line to the vertical list. This section contains all the code for this processing.

VII.1 Boxes, counters, \pstart and \pend

`\raw@text` Here are numbers and flags that are used internally in the course of the paragraph decomposition.
`\ifnumberedpar@`
`\numberedpar@true` When we first form the paragraph, it goes into a box register, `\raw@text`, instead
`\numberedpar@false` of onto the current vertical list. The `\ifnumberedpar@` flag will be true while a para-
`\num@lines` graph is being processed in that way. `\num@lines` will store the number of lines in the
`\one@line` paragraph when it is complete. When we chop it up into lines, each line in turn goes
`\par@line` into the `\one@line` register, and `\par@line` will be the number of that line within the
paragraph.

```
2052 \newbox\raw@text
2053 \newif\ifnumberedpar@
2054 \newcount\num@lines
2055 \newbox\one@line
2056 \newcount\par@line
2057 %
```

`\pstarts@typeset@L` The `\pstarts@typeset@L` counts the number of LEFT `\pstart` typeset. A left
`\pstarts@read@L` `\pstart` can be a `\pstart` typeset in normal mode, or `\pstart` typeset in left column
or page in parallel mode (`withreledpar`). In the first case, its value is increased at every
`\pstart` command. In the second case, its value is increased in `\Columns` or `\Pages`
when we prepare to typeset a left `\pstart`. The `\pstarts@read@L` counts the number
of LEFT `\pstart` read. A left `\pstart` can be a `\pstart` typeset in normal mode, or
`\pstart` typeset in left column or page in parallel mode (`withreledpar`). In the first
case, its value is increased at every `\pstart` command. In the second case, its value is
increased at every `\pstarL`.

```
2058 \newcount\pstarts@typeset@L%
2059 \newcount\pstarts@read@L%
2060 %
```

`\pstart` `\pstart` starts the paragraph by clearing the `\inserts@list` list and other relevant
`\AtEveryPstart` variables, and then arranges for the subsequent text to go into the `\raw@text` box.
`\AtStartEveryPstart` `\pstart` needs to appear at the start of every paragraph that is to be numbered; the
`\numberpstarttrue` `\autopar` command below may be used to insert these commands automatically.
`\numberpstartfalse` Beware: everything that occurs between `\pstart` and `\pend` is happening within
`\labelpstarttrue` a group; definitions must be global if you want them to survive past the end of the
`\labelpstartfalse` paragraph.
`\thepstart`

```
2061 \ifat@every@pstart@star@
2062 \newcommand{\AtStartEveryPstart}[1]{%
2063   \ifstrempy{#1}%
2064   {\gdef\@at@start@every@pstart{}}}%

```

```

2065     {\gdef\@at@start@every@pstart{#1}}%
2066   }%
2067   \def\@at@start@every@pstart{}%
2068
2069   \newif\ifat@every@pstart@star%
2070   \newcommand{\AtEveryPstart}[1]{%
2071     \ifstrempy{#1}%
2072     {\gdef\at@every@pstart{}}%
2073     {\gdef\at@every@pstart{\noindent#1}}%
2074     \global\at@every@pstart@star@false%
2075   }%
2076   \WithSuffix\newcommand\AtEveryPstart*[1]{%
2077     \ifstrempy{#1}%
2078     {\gdef\at@every@pstart{}}%
2079     {\gdef\at@every@pstart{#1}}%
2080     \global\at@every@pstart@star@true%
2081   }%
2082   \def\at@every@pstart{}%
2083
2084   \newcounter{pstart}
2085   \renewcommand{\thepstart}{\bfseries\@arabic{c@pstart}. }
2086   \newif\ifnumberpstart
2087   \numberpstartfalse
2088   \newif\iflabelpstart
2089   \labelpstartfalse
2090   \newcommandx*\pstart}[2][1,2,usedefault]{%
2091     \normal@pars%
2092     \ifboolexpr{%
2093       test {\ifstrempy{#1}}%
2094       and test {\ifstrempy{#2}}%
2095     }%
2096     {\at@every@pstart}%
2097     {%
2098       \ifstrempy{#1}{\noindent#1}%
2099       \ifstrempy{#2}{#2}%
2100     }%
2101     \ifautopar%
2102       \autopar%
2103     \fi%
2104     \ifluatex%
2105       \edef\l@luatexttextdir@L{\the\textdir}%
2106     \fi%
2107     \@nobraektrue%
2108     \ifnumbering \else%
2109       \led@err@PstartNotNumbered%
2110       \beginnumbering%
2111     \fi%
2112     \ifnumberedpar%
2113       \led@err@PstartInPstart%
2114     \pend%

```

```

2115 \fi%
2116 \list@clear{\inserts@list}%
2117 \global\let\next@insert=\empty%
2118 \begingroup\normal@pars%
2119 \global\advance \l@dnumstartL\@ne
2120 \global\advance \pstarts@typesetL\@ne%
2121 \global\advance \pstarts@readL\@ne%
2122 \global\setbox\raw@text=\vbox\bgroup%
2123 \if@nobreak%
2124 \if@afterindent\else%
2125 \noindent%
2126 \global\@afterindenttrue%
2127 \fi%
2128 \fi%
2129 \ifboolexpr{%
2130 bool{autopar}%
2131 and bool{by@autopar}%
2132 }%
2133 {}%
2134 {%
2135 \ifnumberpstart%
2136 \ifinstanza\else%
2137 \ifsidepstartnum\else%
2138 \thepstart%
2139 \fi%
2140 \fi%
2141 \fi%
2142 }%
2143 \numberedpar@true%
2144 \iflabelpstart%
2145 \protected@edef\@currentlabel{\p@pstart\thepstart}%
2146 \fi%
2147 \l@dzeropenalties%
2148 \@at@start@every@pstart%
2149 \global\by@autoparfalse%
2150 \ignorespaces%because not automatically ignored if an optional argument
is used (classical TeX behavior for space after commands)
2151 }
2152 %

```

\pend \pend must be used to end a numbered paragraph.

```

2153 \newcommand*{\pend}[2][1,2,usedefault]{\ifnumbering \else%
2154 \led@err@PendNotNumbered%
2155 \fi%
2156 \global\l@dskipversenumberfalse%
2157 \ifnumberedpar@ \else%
2158 \led@err@PendNoPstart%
2159 \fi%
2160 %

```

We set all the usual interline penalties to zero and then immediately call `\endgraf` to end the paragraph; this ensures that there will be no large interline penalties to prevent us from slicing the paragraph into pieces. These penalties revert to the values that you set when the group for the `\vbox` ends. Then we call `\do@line` to slice a line off the top of the paragraph, add a line number and footnotes, and restore it to the page; we keep doing this until there are not any more lines left.

```

2161 \l@dzeropenalties%
2162 \@at@end@every@pend%
2163 \endgraf\global\num@lines=\prevgraf\egroup%
2164 \global\par@line=0%
2165 %

```

Output the lines.

```

2166 \loop\ifvbox\raw@text%
2167   \do@line%
2168 \repeat%
2169 %

```

Deal with any leftover notes, and then end the group that was begun in the `\pstart`.

```

2170 \flush@notes%
2171 \endgroup%
2172 \ignorespaces%
2173 %

```

Increase `pstart` counter.

```

2174 \ifnumberpstart%
2175   \global\pstartnumtrue%
2176 \fi%
2177 \addtocounter{pstart}{1}%
2178 \ifcontinuousnumberingwithcolumns%
2179   \addtocounter{pstartL}{1}%
2180   \addtocounter{pstartR}{1}%
2181 \fi%
2182 %

```

Print the optional arguments of `\pend` or the content printed after every `\pend`

```

2183 \normal@pars%
2184 \ifboolexpr{%
2185   test {\ifstrempy{#1}}%
2186   and test {\ifstrempy{#2}}%
2187 }%
2188   {\@at@every@pend}%
2189   {%
2190     \ifstrempy{#1}{\noindent#1}%
2191     \ifstrempy{#2}{\#2}%
2192   }%
2193 %

```

Restore standard “nobreak” and “autopar” settings. Normally, `\if@nobreak` is true only immediately after a sectioning command (see `latex.ltx` file). As a `\pstart... \pend` structure can’t contain any sectioning command, we set `\if@nobreak` to false.

```
2194 \@nobreakfalse%
2195 \ifautopar%
2196 \autopar%
2197 \fi%
2198 %
```

At the very end, we check if the lineation is made by `\pstart`. In this case, we reset the line number, using `\setlinenum`, as we are, technically, already out of `\pstart\pend` structure.

```
2199 \ifbypstart%
2200 \begingroup%
2201 \let\leavevmode\relax%
2202 \setlinenum{0}%
2203 \endgroup%
2204 \resetprevline%
2205 \fi%
2206 }
2207 %
```

Here, two macros to insert content after every `\pend`, between numbered line. `\AtEveryPend` is the user macro, `\at@every@pend` is macro set by it.

```
\AtEveryPend
\at@every@pend
\ifat@every@pend@star%
2211 \newif\ifat@every@pend@star%
2212 \newcommand{\AtEveryPend}[1]{%
2213 \ifstrempy{#1}%
2214 {\gdef\at@every@pend{}}%
2215 {\gdef\at@every@pend{\noindent#1}}%
2216 \global\at@every@pend@star@false%
2217 }%
2218 \WithSuffix\newcommand\AtEveryPend*[1]{%
2219 \ifstrempy{#1}%
2220 {\gdef\at@every@pend{}}%
2221 {\gdef\at@every@pend{#1}}%
2222 \global\at@every@pend@star@true%
2223 }%
2224 \xdef\at@every@pend{}%
2225 %
```

`\AtEndEveryPend` Here a macro to insert automatically any content at the end of `\pend`, in numbered lines.

```
2226 \newcommand{\AtEndEveryPend}[1]{%
2227 \ifstrempy{#1}%
```

```

2228 {\xdef\@at@end@every@pend{}}}%
2229 {\gdef\@at@end@every@pend{#1}}}%
2230 }%
2231 \def\@at@end@every@pend{}%
2232 %

```

\l@deropenalties A macro to zero penalties for \pend or \pstart.

```

2233 \newcommand*\l@deropenalties{%
2234   \brokenpenalty \z@ \clubpenalty \z@
2235   \displaywidowpenalty \z@ \interlinepenalty \z@ \predisplaypenalty \z@
2236   \postdisplaypenalty \z@ \widowpenalty \z@}
2237 %
2238 %

```

\autopar In most cases it is only an annoyance to have to label the paragraphs to be numbered with \pstart and \pend. \autopar will do that automatically, allowing you to start a paragraph with its first word and no other preliminaries, and to end it with a blank line or a \par command. The command should be issued within a group, after \beginnumbering has been used to start the numbering; all paragraphs within the group will be affected.

A few situations can cause problems. One is a paragraph that begins with a begin-group character or command: \pstart will not get invoked until after such a group beginning is processed; as a result the character that ends the group will be mistaken for the end of the \vbox that \pstart creates, and the rest of the paragraph will not be numbered. Such paragraphs need to be started explicitly using \indent, \noindent, or \leavevmode — or \pstart, since you can still include your own \pstart and \pend commands even with \autopar on.

Prematurely ending the group within which \autopar is in effect will cause a similar problem. You must either leave a blank line or use \par to end the last paragraph before you end the group.

The functioning of this macro is more tricky than the usual \everypar: we do not want anything to go onto the vertical list at all, so we have to end the paragraph, erase any evidence that it ever existed, and start it again using \pstart. We remove the paragraph-indentation box using \lastbox and save the width, and then skip backwards over the \parskip that has been added for this paragraph. Then we start again with \pstart, restoring the indentation that we saved, and locally change \par so that it will do our \pend for us.

The boolean \ifautopar is set to TRUE while \autopar is enabled, and the \ifby@autopar is set to TRUE at each \pstart automatically called by the \autopar feature. A manual \pstart will have a \ifby@autopar set to FALSE.

```

2239 \newif\ifautopar
2240 \newif\ifby@autopar%
2241 \newcommand*\autopar{%
2242   \ifledRcol
2243     \ifnumberingR \else
2244       \led@err@AutoparNotNumbered

```

```

2245 \beginnumberingR
2246 \fi
2247 \else
2248 \ifnumbering \else
2249 \led@err@AutoparNotNumbered
2250 \beginnumbering
2251 \fi
2252 \fi
2253 \autopartrue
2254 \everypar{\setbox0=\lastbox
2255 \endgraf \vskip-\parskip
2256 \global\by@autopartrue%
2257 \pstart \noindent \kern\wd0%
2258 \ifnumberpstart%
2259 \ifinstanza\else%
2260 \thepstart%
2261 \fi%
2262 \fi%
2263 \let\par=\pend}%
2264 \ignorespaces}
2265 %

```

`\normal@pars` We also define a macro which we can rely on to turn off the `\autopar` definitions at various important places, if they are in force. We will want to do this within a footnotes, for example.

```

2266 \newcommand*{\normal@pars}{\everypar{}\let\par\endgraf}
2267
2268 %

```

`\ifautopar@pause` We define a boolean test switched to true at the beginning of the `\pausenumbering` command if the autopar is enabled. This boolean will be tested at the beginning of `\resumenumbering` to continue the autopar if needed.

```

2269 \newif\ifautopar@pause
2270 %

```

VII.2 Processing one line

VII.2.1 General process

`\do@line` The `\do@line` macro is called by `\pend` to do all the processing for a single line of text. The `\l@dunhbox@line` macro only `\unhboxes` one line, but packages like `\microtype` can override it as required.

```

2271 \newcommand*{\l@dunhbox@line}[1]{\unhbox #1}
2272 \newcommand*{\do@line}{%
2273 {\vbadness=10000
2274 \splittopskip=\z@

```

```

2275 \do@linehook
2276 \l@demptyd@ta
2277 \global\setbox\one@line=\vsplit\raw@text to\baselineskip}%
2278 \unvbox\one@line \global\setbox\one@line=\lastbox
2279 \getline@num
2280 \IfStrEq{\led@pb@setting}{before}{\led@check@pb\led@check@nopb}{\}
2281 \ifnum\@lock>\@ne
2282 \inserthangingsymboltrue
2283 \else
2284 \inserthangingsymbolfalse
2285 \fi
2286 \check@pb@in@verse
2287 \ifl@dhiddenumber%
2288 \global\l@dhiddenumberfalse%
2289 \f@x@l@cks%
2290 \else%
2291 \affixline@num%
2292 \fi%
2293 %

```

Depending whether a sectioning command is called at this pstart or not we print sectioning command or normal line,

```

2294 \xifinlist{\the\pstarts@typeset@L}{\led@sections@@}%
2295 {\print@eledsection}%
2296 {\print@line}%
2297 \IfStrEq{\led@pb@setting}{after}{\led@check@pb\led@check@nopb}{\}
2298 }%
2299 %

```

VII.2.2 Process for “normal” line

\print@line \print@line is for normal line, i. e. line without sectioning command.

```

2300 \def\print@line{
2301 %

```

Insert the pstart number inside, if we are in the first line of a pstart.

```

2302 \affixpstart@num%
2303 %

```

The line will be boxed, to have the good width.

```

2304 \hb@xt@ \linewidth{%
2305 %

```

User hooks.

```

2306 \do@insidelinehook%
2307 \csuse{insidethis@the\absline@num @the\section@num}%
2308 \global\csundef{insidethis@the\absline@num @the\section@num}%
2309 %

```

Left line number

```
2310 \l@dld@ta%
2311 %
```

Prepare text to be inserted before notes.

```
2312 \if@firstlineofpage%
2313 \set@Xtxtbeforenotes%
2314 \set@txtbeforenotesX%
2315 \global\@firstlineofpagefalse%
2316 \fi%
2317 %
```

Insert footnotes made of manuscripts data and critical footnotes.

```
2318 \ifdefstring{\ms@data@position}{msdata-regular}{%
2319 \insert@msdata%
2320 \add@inserts%
2321 \add@Xgroupbyline%
2322 }{%
2323 \add@inserts%
2324 \add@Xgroupbyline%
2325 \insert@msdata%
2326 }%
2327 %
```

Insert marginal notes.

```
2328 \affixside@note%
2329 %
```

Print left notes.

```
2330 \l@dlsn@te
2331 %
```

Boxes the line, writes information about new line in the numbered file.

```
2332 {\ledllfill\hb@xt@ \wd\one@line{%
2333 \new@line%
2334 %
```

If we use the continuousnumberingwithcolumns, we increase right line number.

```
2335 \continuousnumberingwithcolumns@sync@linenumber@singletext%
2336 %
```

If we use Lua \TeX then restore the direction.

```
2337 \ifluatex%
2338 \textdir\l@luatextextdir@L%
2339 \fi%
2340 %
```

Insert, if needed, the hanging symbol.

```

2341 \inserthangingsymbol%
2342 %

```

And so, print the line.

```

2343 \l@dunhbox@line{\one@line}}%
2344 %

```

Right line number

```

2345 \ledrlfill\l@drd@ta%
2346 %

```

Print right notes.

```

2347 \l@drsn@te%
2348 }}%
2349 %

```

And reinsert penalties (for page breaking)...

```

2350 \add@penalties%
2351 }
2352 %

```

VII.2.3 Process for line containing \eledsection command

`\print@eledsection` `\print@eledsection` to print sectioning command with line number. It sets the correct spacing, depending whether a sectioning command was called at previous `\pstart`, calls the sectioning command, prints the normal line outside of the paper, to be able to have critical footnotes. Because of how this prints, a vertical spacing correction is added.

```

2353 \def\print@eledsection{%
2354   \disable@edindex%
2355   \if@firstlineofpage%
2356     \set@Xtxtbeforenotes%
2357     \set@txtbeforenotesX%
2358     \global\@firstlineofpagefalse%
2359   \fi%
2360   \ifdefstring{\ms@data@position}{msdata-regular}{}%
2361     \insert@msdata%
2362     \add@inserts%
2363     \add@Xgroupbyline%
2364   }{%
2365     \add@inserts%
2366     \add@Xgroupbyline%
2367     \insert@msdata%
2368   }%
2369   \affixside@note%
2370   \numdef{\temp@}{\pstarts@typeset@L-1}%
2371   \xifinlist{\temp@}{\eled@sections@}{\@nbreaktrue}{\@nbreakfalse}%
2372   \@eled@sectioningtrue%
2373   \csuse{eled@sectioning@the\pstarts@typeset@L}%

```

```

2374 \electedsectioningfalse%
2375 \global\csundef{eled@sectioning@the\pstarts@typeset@L}%
2376 \if@RTL%
2377   \hspace{-3\paperwidth}%
2378   {\hbox{\l@dunhbox@line{\one@line}} \new@line}%
2379 \else%
2380   \hspace{3\paperwidth}%
2381   {\new@line \hbox{\l@dunhbox@line{\one@line}}}%
2382 \fi%
2383 \vskip-\baselineskip%
2384 \continuousnumberingwithcolumns@sync@linenumber@singletext%
2385 \restore@edindex%
2386 }
2387 %

```

VII.2.4 Hooks

`\do@linehook` Two hooks into `\do@line`. The first is called at the beginning of `\do@line`, the second
`\do@insidelinehook` is called in the line box. The second can, for example, have a `\markboth` command
inside, the first can not.

```

2388 \newcommand*{\do@linehook}{}
2389 \newcommand*{\do@insidelinehook}{}
2390 %

```

`\dolinehook` These high level commands just redefine the low level commands. They have to be used
`\doinsidelinehook` be user, without `\makeatletter`.

```

2391 \newcommand*{\dolinehook}[1]{\gdef\do@linehook{#1}}%
2392 \newcommand*{\doinsidelinehook}[1]{\gdef\do@insidelinehook{#1}}%
2393
2394 %

```

`\doinsidethislinehook` The `\doinsidethislinehook` can be called directly in the main flood of a text. It will
`\@insidethisline` define a hook executed at a specific line, determined by the position of the command in
the flood of the text.

```

2395 \newcommand{\doinsidethislinehook}[1]{%
2396   \leavevmode%In case it begins with a \pstart, ensure the \@insidethisline
   is written after \@nl
2397   \ifledRcol%
2398     \write\linenum@outR{\string\@insidethisline[\unexpanded{#1}]}%
2399   \else%
2400     \write\linenum@out{\string\@insidethisline[\unexpanded{#1}]}%
2401   \fi%
2402 }%
2403 %

```

The auxiliary files command just store the information to be executed when typesetting the specific line.

```

2404 \newcommand{\@insidethisline}[1]{%
2405   \ifledRcol%
2406     \csgappto{insidethisR@the\absline@numR @the\section@numR}{#1}%
2407   \else%
2408     \csgappto{insidethis@the\absline@num @the\section@num}{#1}%
2409   \fi%
2410 }%
2411 %

```

VII.2.5 Sidenotes and marginal line number initialization

`\l@emptyd@ta` Nulls the `\. . .d@ta`, which may later hold line numbers. Similarly for `\l@dcsnotetext`, `\l@dld@ta` `\l@dcsnotetext@l`, `\l@dcsnotetext@r` for the texts of the sidenotes, left and right notes.

`\l@dcsnotetext` `\l@dcsnotetext@l` `\l@dcsnotetext@r`

```

2412 \newcommand*\l@emptyd@ta{%
2413   \gdef\l@dld@ta{%
2414     \gdef\l@drd@ta{%
2415       \gdef\l@dcsnotetext@l{}%
2416       \gdef\l@dcsnotetext@r{}%
2417       \gdef\l@dcsnotetext{}%
2418     }%
2419   }%

```

`\l@dlsn@te` Zero width boxes of the left and right sidenotes, together with their kerns, and, eventually, with additional space if we are in parallel columns typesetting.

`\l@drsn@te`

```

2420 \newcommand{\l@dlsn@te}{%
2421   \ifboolexpr{%
2422     bool {l@dprintingcolumns}%
2423     and bool {ledRcol}%
2424   }{% If we are on a right column
2425     \@tempdima=\@morespace@leftnote@rightcolumn%
2426   }{%
2427     \@tempdima=\z@%
2428   }%
2429   \hb@xt@ \z@{\hss\box\l@dlp@rbox\kern\ledlsnotesep\hskip\@tempdima}%
2430 }%
2431 \newcommand{\l@drsn@te}{%
2432   \ifboolexpr{%
2433     bool {l@dprintingcolumns}%
2434     and not bool {ledRcol}%
2435   }{% If we are on a left column
2436     \@tempdima=\@morespace@rightnote@leftcolumn%
2437   }{%
2438     \@tempdima=\z@%
2439   }%
2440   \hb@xt@ \z@{\hskip\@tempdima\kern\ledrsnotesep\box\l@drp@rbox\hss}%
2441 }%
2442

```

```

2443 %

\ledllfill These macros are called at the left (\ledllfill) and the right (\ledllfill) of each
\ledrlfill numbered line. The initial definitions correspond to the original code for \do@line.

2444 \newcommand*{\ledllfill}{\hfil}
2445 \newcommand*{\ledrlfill}{\hfil}
2446
2447 %

```

VIII Line and page number computation

\getline@num The `\getline@num` macro determines the page and line numbers for the line we are about to send to the vertical list.

```

2448 \newcommand*{\getline@num}{%
2449   \global\advance\absline@num \@ne%
2450   \do@actions
2451   \do@ballast
2452   \ifnumberline
2453     \ifsublines@
2454       \ifnum\sub@lock<\tw@
2455         \global\advance\subline@num \@ne
2456       \fi
2457     \else
2458       \ifnum\@lock<\tw@
2459         \global\advance\line@num \@ne
2460         \global\subline@num \z@
2461       \fi
2462     \fi
2463   \fi
2464 }
2465 %

```

\do@ballast The real work in the macro above is done in `\do@actions`, but before we plunge into that, let's get `\do@ballast` out of the way. This macro looks to see if there is an action to be performed on the *next* line, and if it is going to be a page break action, `\do@ballast` decreases the count `\ballast@count` counter by the amount of ballast. This means, in practice, that when `\add@penalties` assigns penalties at this point, T_EX will be given extra encouragement to break the page here (see XII.2 p. 180).

\ballast@count First we set up the required counters; they are initially set to zero, and will remain so unless you type `\setcounter{ballast}{\langle some figure \rangle}` in your document.

\c@ballast

```

2466 \newcount\ballast@count
2467 \newcounter{ballast}
2468 \setcounter{ballast}{0}
2469 %

```

And here is `\do@ballast` itself. It advances `\absline@num` within the protection of a group to make its check for what happens on the next line.

```

2470 \newcommand*{\do@ballast}{\global\ballast@count \z@
2471 \begingroup
2472   \advance\absline@num \@ne
2473   \ifnum\next@actionline=\absline@num
2474     \ifnum\next@action>-1001\relax
2475     \global\advance\ballast@count by -\c@ballast
2476   \fi
2477 \fi
2478 \endgroup}
2479 %

```

`\do@actions` The `\do@actions` macro looks at the list of actions to take at particular absolute line numbers, and does everything that is specified for the current line.

It may call itself recursively, and to do this efficiently (using \TeX 's optimization for tail recursion), we define a control-sequence called `\do@actions@next` that is always the last thing that `\do@actions` does. If there could be more actions to process for this line, `\do@actions@next` is set equal to `\do@actions`; otherwise it is just `\relax`.

```

2480 \newcommand*{\do@actions}{%
2481   \global\let\do@actions@next=\relax
2482   \ifnum\absline@num<\next@actionline\else
2483   %

```

First, page number changes, which will generally be the most common actions. If we are restarting lineation on each page, this is where it happens.

```

2484   \ifnum\next@action>-1001
2485     \global\page@num=\next@action
2486     \ifresumenumbering@start%
2487       \setbox0=\hbox{ }%Required to get the correct page number, when the
\resumenumbering is just after a \newpage
2488       \ifnum\pausenumbering@page@num<\page@num%
2489         \global\resumenumbering@startfalse%
2490       \fi%
2491     \fi%
2492     \ifboolexpr{%
2493       bool{resumenumbering@start}%
2494       and test {\ifdimgreater{\pagedepth}{\z@}}%
2495     }%
2496     {}%
2497     {\global\@firstlineofpagetrue}%
2498     \ifcsdef{reset@line\the\absline@num @\the\section@num}%
2499     {%
2500       \global\line@num=\z@%
2501       \global\subline@num=\z@%
2502       \resetprevline@%
2503     }%
2504     {}%

```

```

2505 \global\resumenumbers@startfalse%
2506 \add@msdata@firstlineofpage%
2507 %

```

Next, we handle commands that change the line-number values. (We subtract 5001 rather than 5000 here because the line number is going to be incremented automatically in `\getline@num`.)

```

2508 \else
2509 \ifnum\next@action<-4999
2510 \@l@tempcnta=-\next@action
2511 \advance\@l@tempcnta by -5001
2512 \ifsublines@
2513 \global\subline@num=\@l@tempcnta
2514 \else
2515 \global\line@num=\@l@tempcnta
2516 \fi
2517 %

```

We rescale the value in `\@l@tempcnta` so that we can use a case statement.

```

2518 \else
2519 \@l@tempcnta=-\next@action
2520 \advance\@l@tempcnta by -1000
2521 \do@actions@fixedcode
2522 \fi
2523 \fi
2524 %

```

Now we get information about the next action off the list, and then set `\do@actions@next` so that we will call ourselves recursively: the next action might also be for this line.

There is no warning if we find `\actionlines@list` empty, since that will always happen near the end of the section.

```

2525 \ifx\actionlines@list\empty
2526 \gdef\next@actionline{1000000}%
2527 \else
2528 \gl@p\actionlines@list\to\next@actionline
2529 \gl@p\actions@list\to\next@action
2530 \global\let\do@actions@next=\do@actions
2531 \fi
2532 \fi
2533 %

```

Make the recursive call, if necessary.

```

2534 \do@actions@next}
2535
2536 %

```

`\do@actions@fixedcode` This macro handles the fixed codes for `\do@actions`. It is one big case statement.

```

2537 \newcommand*{\do@actions@fixedcode}{%
2538   \ifcase\@l@tempcnta
2539     \or%                               % 1001 = starting sublineation
2540       \global\sublines@true
2541     \or%                               % 1002 = ending sublineation
2542       \global\sublines@false
2543     \or%                               % 1003 = starting locking number
2544       \global\@lock=\@ne
2545     \or%                               % 1004 = ending locking number
2546       \ifnum\@lock=\tw@
2547         \global\@lock=\thr@@
2548       \else
2549         \global\@lock=\z@
2550       \fi
2551     \or%                               % 1005 = starting locking subnumber
2552       \global\sub@lock=\@ne
2553     \or%                               % 1006 = ending locking subnumber
2554       \ifnum\sub@lock=\tw@
2555         \global\sub@lock=\thr@@
2556       \else
2557         \global\sub@lock=\z@
2558       \fi
2559     \or%                               % 1007 = skipping numbering
2560       \l@dskipnumbertrue
2561     \or%                               % 1008 = skipping numbering in stanza
2562       \l@dskipversenumbertrue%
2563     \or%                               % 1009 = hiding number
2564       \l@dhidenumbertrue
2565     \or%                               % 1010 = inserting msdata
2566       \add@msdata%
2567     \else
2568       \led@warn@BadAction
2569     \fi}
2570
2571
2572 %

```

VIII.1 Continuous line numbering between parallel typesetting and normal typesetting

`\yinc@linenumber@singletext` The `continuousnumberingwithcolumns` option allows to alternate between single text and two parallel texts, keeping the same line numbers when switching from one layout to the other. The lines counter for the text in a single column and for the text in the left column in parallel typesetting is the same. But the lines counter for the text in the same column is not the same.

When typesetting single column text, if the option is enabled, we need to “simulate” typesetting right line, in order to keep the two counters synchronized. That is the aim of the

`\continuousnumberingwithcolumns@sync@linenumber@singletext` macro.

```

2573 \newcommand{\continuousnumberingwithcolumns@sync@linenumber@singletext}{%
2574   \ifcontinuousnumberingwithcolumns%
2575     \unless\ifafterendnumberingR%
2576       \new@lineR%
2577       \xappto\next@line@list@stuffR{%
2578         \unexpanded{\global\line@numR=}\the\line@num%
2579       }%
2580     \fi%
2581   \fi%
2582 }%
2583 %

```

IX Line number annotation

The `\linenumannotation` allows users to add manual annotations to line numbers, for example to refer to line numbers from an older edition.

That implies that annotations be added

- in marginal line numbers. This feature is implemented by associating annotations with the absolute line numbers when reading the auxiliary numbered files (.1, .2 etc.).
- in critical footnotes. This feature is implemented by associating start / end line number annotations with each `\edtext` when reading the auxiliary numbered files.
- to crossref commands which refer to line numbers (to be completed when I will have resolved this issue).

`\linenumannotation` First, the user-level command, which only writes commands to the numbered files, storing the annotation.

```

2584 \newcommand{\linenumannotation}[1]{%
2585   \leavevmode%In case it begins with a \pstart, ensure the \@annot is
written after \@nl
2586   \ifledRcol%
2587     \write\linenum@outR{\string\@annot[#1]}%
2588   \else%
2589     \write\linenum@out{\string\@annot[#1]}%
2590   \fi%
2591 }%
2592 %

```

`\Xlinenumannotationposition@side` The `\Xlinenumannotationposition@side` macro, to determine the position of line number annotations in lines printed in the side, relative to the line number position. The default value is “after”, but it can be changed to “before”, using the `\Xlinenumannotationposition` macro.

```

2593 \def\Xlinenumannotationposition@side{after}%
2594 %

```

`\xwraplinenumannotation@ref` The `\xwraplinenumannotation@ref` macro is applied to line annotations in crossref.
`\xwraplinenumannotation@side` The `\xwraplinenumannotation@side` macro is applied to line annotation in sides.
 They must be modified by users using `\xwraplinenumannotation`. By default, they call `\textsuperscript`.

We also define toggle `Xnoidenticallinenumannotation@ref` and `Xnoidenticallinenumannotation@ref`

```

2595 \def\xwraplinenumannotation@ref{\textsuperscript}%
2596 \def\xwraplinenumannotation@side{\textsuperscript}%
2597 \newtoggle{Xnoidenticallinenumannotation@ref}%
2598 \newtoggle{Xnoidenticallinenumannotation@side}%
2599 %

```

`\@annot` Then, the numbered files command `\@annot`, which

`\store@annot@to@absline`

- associates the annotation to the absolute lines number.
- stores the current annotation in a macro to be used by the `\@ref@reg` macro, which manages all things related to `\edtext` in numbered files. As we don't want to store it multiple times in the event of nested `\edtext`, we use an auxiliary macro, `\store@annot@to@absline`, which is set to `\@gobble` when we parse nested `\edtext` in numbered auxiliary files.

```

2600 \newcommand{\@annot}[1]{%
2601   \store@annot@to@absline{#1}%
2602   \def\current@annot{#1}%
2603 }%
2604 \newcommand{\store@annot@to@absline}[1]{%
2605   \ifledRcol%
2606     \ifcsdef{annotR@the\absline@numR @the\section@numR}{%
2607       \csgappto{annotR@the\absline@numR @the\section@numR}{\
@linenumannotationsep#1}%
2608     }{%
2609       \csgdef{annotR@the\absline@numR @the\section@numR}{#1}%
2610     }%
2611   \else%
2612     \ifcsdef{annot@the\absline@num @the\section@num}{%
2613       \csgappto{annot@the\absline@num @the\section@num}{\
@linenumannotationsep#1}%
2614     }{%
2615       \csgdef{annot@the\absline@num @the\section@num}{#1}%
2616     }%
2617   \fi%
2618 }%
2619 %

```

`\current@annot` By default, there is no annotation to a line number, so we store an empty `\current@annot`

```
2620 \let\current@annot=\empty%
2621 %
```

\reset@current@annot `\reset@current@annot` is called at each `\@n1` in numbered auxiliary files. It resets the annotation of line numbers at each line.

```
2622 \newcommand{\reset@current@annot}{%
2623   \unless\ifnoresetlinenumannotation@
2624     \let\current@annot\empty%
2625   \fi
2626 }%
2627 %
```

\parse@annot In the `\annot@list` list, each individual `\edtext` is associated with a starting and an ending line number annotation, which is stored this way: `start annotation|end annotation`. The `\parse@annot` reads the format and defines two global macros.

```
2628 \def\parse@annot#1|#2|{%
2629   \gdef\annot@start{#1}%
2630   \gdef\annot@end{#2}%
2631 }%
2632 %
```

\setlinenumannotationsep The separator between the annotations and the way to redefine it.

```
\@linenumannotationsep
2633 \newcommand{\setlinenumannotationsep}[1]{\gdef\@linenumannotationsep{#1}}%
2634 \def\@linenumannotationsep{, }%
2635 %
```

X Line number printing

\affixline@num `\affixline@num` just puts a left line number into `\l@dld@ta` or a right line number into `\l@drrd@ta` as required.

To determine whether we need to affix a line number to this line, we compute the following:

$$\begin{aligned} n &= \text{int}((\text{linenum} - \text{firstlinenum}) / \text{linenumincrement}) \\ m &= \text{firstlinenum} + (n \times \text{linenumincrement}) \end{aligned}$$

(where *int* truncates a real number to an integer). *m* will be equal to *linenum* only if we are to paste a number on here. However, the formula breaks down for the first line to number (and any before that), so we check that case separately: if `\line@num ≤ \firstlinenum`, we compare the two directly instead of making these calculations.

We compute, in the scratch counter `\@l@dttempcnta`, the number of the next line that should be printed with a number (*m* in the above discussion), and move the current line number into the counter `\@l@dttempcntb` for comparison.

First, the case when we are within a sub-line range.

```

2636 \newcommand*{\affixline@num}{%
2637 %

```

No number is attached if `\ifl@dskipnumber` is TRUE (and then it is set to its normal FALSE value). No number is attached if `\ifnumberline` is FALSE (the normal value is TRUE).

```

2638 \ifledgroupnotesL@else
2639 \ifnumberline
2640 \ifl@dskipnumber
2641 \global\l@dskipnumberfalse
2642 \else
2643 \ifsublines@
2644 \l@dttempcntb=\subline@num
2645 \ifnum\subline@num>\c@firstsublinenum
2646 \l@dttempcnta=\subline@num
2647 \advance\l@dttempcnta by-\c@firstsublinenum
2648 \divide\l@dttempcnta by\c@sublinenumincrement
2649 \multiply\l@dttempcnta by\c@sublinenumincrement
2650 \advance\l@dttempcnta by\c@firstsublinenum
2651 \else
2652 \l@dttempcnta=\c@firstsublinenum
2653 \fi
2654 %

```

That takes care of computing the values for comparison, but if line number locking is in effect we have to make a further check. If this check fails, then we disable the line-number display by setting the counters to arbitrary but unequal values.

```

2655 \ch@cksub@l@ck
2656 %

```

Now the line number case, which works the same way.

```

2657 \else
2658 \l@dttempcntb=\line@num
2659 %

```

Check on the `\linenumberlist` If it is `\empty` use the standard algorithm.

```

2660 \ifx\linenumberlist\empty
2661 \ifnum\line@num>\c@firstlinenum
2662 \l@dttempcnta=\line@num
2663 \advance\l@dttempcnta by-\c@firstlinenum
2664 \divide\l@dttempcnta by\c@linenumincrement
2665 \multiply\l@dttempcnta by\c@linenumincrement
2666 \advance\l@dttempcnta by\c@firstlinenum
2667 \else
2668 \l@dttempcnta=\c@firstlinenum
2669 \fi
2670 \else
2671 %

```

The `\linenumberlist` was not `\empty`, so here is Wayne's numbering mechanism. This takes place in \TeX 's mouth.

```

2672         \@l@dtmpcnta=\line@num
2673         \edef\rem@inder{\,\linenumberlist,\number\line@num,}%
2674         \edef\sc@n@list{\def\noexpand\sc@n@list
2675             ###1,\number\@l@dtmpcnta,###2|{\def\noexpand\rem@inder
2676 {####2}}}%
2677         \sc@n@list\expandafter\sc@n@list\rem@inder|
2678         \ifx\rem@inder\empty%
2679             \advance\@l@dtmpcnta\@ne
2680         \fi
2681     \fi
%
```

A locking check for lines, just like the version for sub-line numbers above.

```

2682         \ch@ck@l@ck
2683     \fi
2684 %
```

The following tests are true if we need to print a line number.

```

2685         \ifnum\@l@dtmpcnta=\@l@dtmpcntb
2686         \ifl@dskipversenumber\else
2687 %
```

If we got here, we are going to print a line number; so now we need to calculate a number that will tell us which side of the page will get the line number. We start from `\line@margin`, which asks for one side always if it is less than 2; and then if the side does depend on the page number, we simply add the page number to this side code—because the values of `\line@margin` have been devised so that this produces a number that is even for left-margin numbers and odd for right-margin numbers.

For $\mathcal{E}\mathcal{T}\mathcal{E}\mathcal{X}$ we have to consider two column documents as well. In this case Peter Wilson thought we need to put the numbers at the outside of the column — the left of the first column and the right of the second. Do the `twocolumn` stuff before going on with the original code.

`\l@dld@ta` A left line number is stored in `\l@dld@ta` and a right one in `\l@drd@ta`.

```

\l@drd@ta
2688         \if@twocolumn
2689             \if@firstcolumn
2690                 \gdef\l@dld@ta{\llap{\leftlinenum}}%
2691             \else
2692                 \gdef\l@drd@ta{\rlap{\rightlinenum}}%
2693             \fi
2694         \else
2695             \ifboolexpr{bool {l@dprintingcolumns} and test {
2696 ifnumgreater{\line@margin@columns}{\m@ne}}}%
2697                 {\@l@dtmpcntb=\line@margin@columns}%
2698                 {\@l@dtmpcntb=\line@margin}%
2699             \ifnum\@l@dtmpcntb>\@ne
```

```

2725         \f@x@l@cks
2726     \fi
2727 \fi
2728 \fi
2729 }
2730
2731 %

```

```
2732 \newcommand*{\ch@cksub@l@ck}{%
2733   \ifcase\sub@lock
2734     \or
2735     \ifnum\sublock@disp=\@ne
2736       \@l@dttempcntb=\z@ \@l@dttempcnta=\@ne
2737     \fi
```

```

2738     \or
2739     \ifnum\sublock@disp=\tw@ \else
2740         \@l@tempcntb=\z@ \@l@tempcnta=\@ne
2741     \fi
2742     \or
2743     \ifnum\sublock@disp=\z@
2744         \@l@tempcntb=\z@ \@l@tempcnta=\@ne
2745     \fi
2746 \fi}
2747 %

```

Similarly for line numbers.

```

2748 \newcommand*{\ch@ck@l@ck}{%
2749     \ifcase\@lock
2750     \or
2751         \ifnum\lock@disp=\@ne
2752             \@l@tempcntb=\z@ \@l@tempcnta=\@ne
2753         \fi
2754     \or
2755         \ifnum\lock@disp=\tw@ \else
2756             \@l@tempcntb=\z@ \@l@tempcnta=\@ne
2757         \fi
2758     \or
2759         \ifnum\lock@disp=\z@
2760             \@l@tempcntb=\z@ \@l@tempcnta=\@ne
2761         \fi
2762 \fi}
2763 %

```

Fix the lock counters. A value of 1 is advanced to 2; 3 advances to 0; other values are unchanged.

```

2764 \newcommand*{\f@x@l@cks}{%
2765     \ifcase\@lock
2766     \or
2767         \global\@lock=\tw@
2768     \or \or
2769         \global\@lock=\z@
2770     \fi
2771     \ifcase\sub@lock
2772     \or
2773         \global\sub@lock=\tw@
2774     \or \or
2775         \global\sub@lock=\z@
2776     \fi}
2777
2778 %

```

XI Pstart number printing inside

Inside, the printing of the pstart number runs like the printing of the line number. There are only a few differences:

- The pstarts counter is upgraded in the `\pend` command. Consequently, the `\affixpstart@num` command has not to upgrade it, unlike the `\affixline@num` which upgrades the lines counter.
- To print the pstart number only at the beginning of a pstart, and not in every line, a boolean test is made. The `\pstartnum` boolean is set to TRUE at every `\pend`. It is tried in the `\leftpstartnum` and `\rightpstartnum` commands. After the try, it is set to FALSE.

```

\leftpstartnum79
\rightpstartnum80 \newif\ifsidepstartnum
\ifsidepstartnum81 \newcommand*{\affixpstart@num}{%
2782   \ifsidepstartnum
2783     \if@twocolumn
2784       \if@firstcolumn
2785         \gdef\l@dld@ta{\llap{\leftpstartnum}}}%
2786       \else
2787         \gdef\l@drd@ta{\rlap{\rightpstartnum}}}%
2788       \fi
2789     \else
2790       \@l@tempcntb=\line@margin%
2791       \ifnum\@l@tempcntb>\@ne
2792         \advance\@l@tempcntb \page@num
2793       \fi
2794       \ifodd\@l@tempcntb
2795         \gdef\l@drd@ta{\rlap{\rightpstartnum}}}%
2796       \else
2797         \gdef\l@dld@ta{\llap{\leftpstartnum}}}%
2798       \fi
2799     \fi
2800   \fi
2801 }
2802 %
2803
2804
2805 \newif\ifpstartnum
2806 \pstartnumtrue
2807 \newcommand*{\leftpstartnum}{
2808   \ifpstartnum\thepstart
2809   \kern\linenumsep\fi
2810   \global\pstartnumfalse
2811 }
2812 \newcommand*{\rightpstartnum}{
2813   \ifpstartnum

```

```

2814 \kern\linenumsep
2815 \thepstart
2816 \fi
2817 \global\pstartnumfalse
2818 }
2819 %

```

XII Restoring footnotes and penalties

Because of the paragraph decomposition process in order to number line, `reledmac` must hack the standard way \TeX works in order to manage insertion of footnotes, both critical and familiar.

We need to call the `\insert` commands not when the content of `\pstart... \pend` is read by \TeX but when each individual line is typeset.

Consequently, when reading the content of `\pstart... \pend`, we store the insertion (footnotes) in an specific `reledmac`'s list, and we restore them to the vertical list when printing each individual line.

XII.1 Add insertions to the vertical list

`\inserts@list` `\inserts@list` is the list macro that contains the inserts that we save up for one paragraph.

```

2820 \list@create{\inserts@list}
2821 %

```

`\add@inserts` `\add@inserts` is the penultimate macro used by `\do@line`; it takes insertions saved in a list macro and sends them onto the vertical list.

It may call itself recursively, and to do this efficiently (using \TeX 's optimization for tail recursion), we define a control-sequence called `\add@inserts@next` that is always the last thing that `\add@inserts` does. If there could be more inserts to process for this line, `\add@inserts@next` is set equal to `\add@inserts`; otherwise it is just `\relax`.

```

2822 \newcommand*{\add@inserts}{%
2823 \global\let\add@inserts@next=\relax
2824 %

```

If `\inserts@list` is empty, there are not any more notes or insertions for this paragraph, and we need not waste our time.

```

2825 \ifx\inserts@list\empty \else
2826 %

```

The `\next@insert` macro records the number of the line that receives the next footnote or other insert; it is empty when we start out, and just after we have affixed a note or insert.

```

2827 \ifx\next@insert\empty
2828 \ifx\insertlines@list\empty
2829 \global\noteschanged@true
2830 \gdef\next@insert{100000}%
2831 \else
2832 \gl@p\insertlines@list\to\next@insert
2833 \fi
2834 \fi
2835 %

```

If the next insert's for this line, tack it on (and then erase the contents of the insert macro, as it could be quite large). In that case, we also set `\add@inserts@next` so that we will call ourself recursively: there might be another insert for this same line.

```

2836 \ifnum\next@insert=\absline@num
2837 \gl@p\inserts@list\to\@insert
2838 \@insert
2839 \global\let\@insert=\undefined
2840 \global\let\next@insert=\empty
2841 \global\let\add@inserts@next=\add@inserts
2842 \fi
2843 \fi
2844 %

```

Make the recursive call, if necessary.

```

2845 \add@inserts@next}
2846
2847 %

```

\add@Xgroupbyline If you use `\Xgroupbyline`, the insertion of the critical footnotes are not made immediately in `\add@inserts`, but the content to be inserted is stored, in order to be inserted later in one block. This insertion in one block is made by `\add@Xgroupbyline`.

```

2848 \newcommand{\add@Xgroupbyline}{%
2849 \unless\ifnocritical%
2850 \def\do##1{%Looping on the series
2851 \let\olddo\do%Save the old \do macro, that is this macro itself!
2852 \def\do####1{%Looping on the ##1@forinserting command
2853 \ifcsdef{##1@forinserting@####1}{%
2854 \X@beforeinsertion{##1}%
2855 \if@ledgroup%
2856 \global\setbox\@nameuse{mp##1footins}=\vbox%
2857 \else%
2858 \insert\csname ##1footins\endcsname%
2859 \fi%
2860 {%
2861 \Xsetparindent{##1}%
2862 \ifcsdef{Xhsize\csuse{series@display##1}@##1}%
2863 {\hsize \csuse{Xhsize\csuse{series@display##1}@##1}}%
2864 {}}%

```

```

2865         \if@ledgroup%
2866             \unvbox\@nameuse{mp##1footins}%
2867         \fi%
2868         \X@atbegininsertion{##1}%
2869         \ifcsstring{series@display##1}{normal}%
2870             {%
2871                 \Xledsetnormalparstuff{##1}%
2872                 \rule\z@\splittopskip%
2873             }%
2874         {%
2875             \csuse{##1@forinserting@###1}%
2876             \strut\par%
2877         }%
2878         \global\csundef{##1@forinserting@###1}%
2879     }%
2880     {%
2881     }%
2882     \ifcsdef{##1@forinserting}{%
2883         \dolistcsloop{##1@forinserting}%
2884     }{%
2885         \global\csundef{##1@forinserting}%
2886         \let\do\olddo%Restore old do
2887     }%
2888     \dolistloop{\@series}%
2889 \fi%
2890 }%
2891
2892
2893 %

```

XII.2 Penalties

\add@penalties \add@penalties is the last macro used by \do@line. It adds up the club, widow, and interline penalties, and puts a single penalty of the appropriate size back into the paragraph; these penalties get removed by the \vsplit operation. \displaywidowpenalty and \brokenpenalty are not restored, since we have no easy way to find out where we should insert them.

In this code, \num@lines is the number of lines in the whole paragraph, and \par@line is the line we are working on at the moment. The count \@l@tempcnta is used to calculate and accumulate the penalty; it is initially set to the value of \ballast@count, which has been worked out in \do@ballast above (VIII p. 166). Finally, the penalty is checked to see that it does not go below -10000 .

```

2894 \newcommand*{\add@penalties}{\@l@tempcnta=\ballast@count
2895     \ifnum\num@lines>\@ne
2896         \global\advance\par@line \@ne
2897         \ifnum\par@line=\@ne
2898             \advance\@l@tempcnta \clubpenalty
2899         \fi

```

```

2900 \l@ldtempcntb=\par@line \advance\l@ldtempcntb \@ne
2901 \ifnum\l@ldtempcntb=\num@lines
2902   \advance\l@ldtempcnta \widowpenalty
2903 \fi
2904 \ifnum\par@line<\num@lines
2905   \advance\l@ldtempcnta \interlinepenalty
2906 \fi
2907 \fi
2908 \ifnum\l@ldtempcnta=\z@
2909   \relax
2910 \else
2911   \ifnum\l@ldtempcnta>-10000
2912     \penalty\l@ldtempcnta
2913   \else
2914     \penalty -10000
2915   \fi
2916 \fi}
2917
2918 %

```

XII.3 Printing leftover notes

\flush@notes The `\flush@notes` macro is called after the entire paragraph has been sliced up and sent on to the vertical list. If the number of notes to this paragraph has increased since the previous run of \TeX , then there can be leftover notes that have not yet been printed. An appropriate error message will be printed elsewhere; but it is best to go ahead and print these notes somewhere, even if it is not in quite the right place. What we do is dump them all out here, so that they should be printed on the same page as the last line of the paragraph. We can hope that is not too far from the proper location, to which they will move on the next run. For the first run, we do not flush the notes, as that means all the notes will be added at the end of numbered section, and so, very far of the expected position

```

2919 \newcommand*{\flush@notes}{%
2920   \iftoggle{notfirstrun@jobname.\extensionchars\the\section@num}{%
2921     \@xloop%
2922     \ifx\inserts@list\empty \else%
2923       \gl@p\inserts@list\to\@insert%
2924       \@insert%
2925       \global\let\@insert=\undefined%
2926     \repeat%
2927   }{}%
2928 }%
2929
2930
2931 %

```

\@xloop `\@xloop` is a variant of the PLAIN \TeX `\loop` macro, useful when it's hard to construct a positive test using the \TeX `\if` commands—as in `\flush@notes` above. One types

`\xloop ... \if ... \else ... \repeat`, and the action following `\else` is repeated as long as the `\if` test fails. (This macro will work wherever the `PLAIN TEX \loop` is used, too, so we could just call it `\loop`; but it seems preferable not to change the definitions of any of the standard macros.)

This variant of `\loop` was introduced by Alois Kabelschacht in *TUGboat* **8** (1987), pp. 184–5.

```

2932 \def\xloop#1\repeat{%
2933   \def\body{#1\expandafter\body\fi}%
2934   \body}
2935
2936 %

```

XII.4 Text before notes

`\set@Xtxtbeforenotes` The `\set@Xtxtbeforenotes` macro resets the `Xtxtbeforenotes@⟨series⟩@typeset` boolean to false. Just before the first note of the `⟨series⟩` in a page, the `\Xtextbeforenotes` will be inserted.

```

2937 \newcommand{\set@Xtxtbeforenotes}{%
2938   \unless\ifnocritical{%
2939     \def\do##1{%
2940       \nottoggle{Xtxtbeforenotesonlyonce@##1}{%
2941         \global\togglefalse{Xtxtbeforenotes@##1@typeset}%
2942       }{}%
2943     }%
2944     \dolistloop{\@series}%
2945   \fi%
2946 }%
2947 %

```

`\set@txtbeforenotesX` The `\set@txtbeforenotesX` does the same for the `\textbeforenotesX`.

```

2948 \newcommand{\set@txtbeforenotesX}{%
2949   \unless\ifnofamiliar{%
2950     \def\do##1{%
2951       \nottoggle{txtbeforenotesonlyonceX@##1}{%
2952         \global\togglefalse{txtbeforenotesX@##1@typeset}%
2953       }{}%
2954     }%
2955     \dolistloop{\@series}%
2956   \fi%
2957 }%
2958 %

```

`\insert@Xtxtbeforenotes` `\insert@Xtxtbeforenotes{⟨series⟩}`, called when inserting a familiar footnote, will insert the text before the note if it is not already inserted. For paragraphed footnotes, it will insert it as a component of the first footnote. For other types of footnotes, it will insert it as a regular footnote.

`\insert@txtbeforenotesX` is the same for familiar footnotes.

```

2959 \newcommand{\insert@Xtxtbeforenotes}[1]{%
2960 \nottoggle{Xtxtbeforenotes@#1@typeset}{%
2961   \global\toggletrue{Xtxtbeforenotes@#1@typeset}%
2962   \ifcvoid{Xtxtbeforenotes@#1}{}%
2963     \ifcsstring{series@display#1}{paragraph}%
2964     {\noindent\csuse{Xtxtbeforenotes@#1}}%
2965     {\expandafter\insert\csname#1footins\endcsname%
2966       \bgroup%
2967         \noindent%
2968         \ifcsdef{\csuse{series@display#1}@begin@insert}{%
2969           \csuse{\csuse{series@display#1}@begin@insert}{#1}%
2970         }{}%
2971         \strut\csuse{Xnotefontsize@#1}%
2972         \csuse{Xtxtbeforenotes@#1}%
2973       \egroup%
2974     }%
2975   }%
2976 }%
2977 {}%
2978 }%
2979
2980
2981 \newcommand{\insert@txtbeforenotesX}[1]{%
2982 \nottoggle{txtbeforenotesX@#1@typeset}{%
2983   \global\toggletrue{txtbeforenotesX@#1@typeset}%
2984   \ifcvoid{txtbeforenotesX@#1}{}%
2985     \ifcsstring{series@displayX#1}{paragraph}%
2986     {\noindent\csuse{txtbeforenotesX@#1}}%
2987     {\expandafter\insert\csname footins#1\endcsname%
2988       \bgroup%
2989         \noindent%
2990         \ifcsdef{\csuse{series@displayX#1}@begin@insert}{%
2991           \csuse{\csuse{series@displayX#1}@begin@insert}{#1}%
2992         }{}%
2993         \strut\csuse{notefontsizeX@#1}\csuse{txtbeforenotesX@#1}%
2994       \egroup%
2995     }%
2996   }%
2997 }%
2998 {}%
2999 }%
3000
3001
3002 %

```

XIII Critical footnotes

The footnote macros are adapted from those in PLAIN T_EX, but they differ in these respects: the outer-level commands must add other commands to a list macro rather than doing insertions immediately; there are many separate levels of the footnotes, not just one; and there are options to reformat footnotes into paragraphs or into multiple columns.

XIII.1 Fonts

Before getting into the details of formatting the notes, we set up some font macros. It is the notes that present the greatest challenge for our font-handling mechanism, because we need to be able to take fragments of our main text and print them in different forms: it is common to reduce the size, for example, without otherwise changing the fonts used.

`\select@lemmfont` `\select@lemmfont` is provided to set the right font for the lemma in a note. This macro extracts the font specifier from the line and page number cluster, and issues the associated font-changing command, so that the lemma is printed in its original font.

```

3003 \def\select@lemmfont#1|#2|#3|#4|#5|#6|#7|{\select@lemmfont#7|}
3004 \def\select@lemmfont#1/#2/#3/#4|{%
3005   {\fontencoding{#1}\fontfamily{#2}\fontseries{#3}\fontshape{#4}%
3006   \selectfont}
3007
3008 %

```

XIII.2 Individual note options

`\footnoteoptions@` The `\footnoteoption@` [*side*] [*options*] [*value*] changes the value of on options of Xfootnote, to switch between true and false.

```

3009 \newcommand*\footnoteoptions@[3]{%
3010   \def\do##1{%
3011     \ifstrequal{#1}{L}{% On the left side
3012       \xright@appenditem{\noexpand\setkeys[mac]{#3footnoteoption}{\
3013       unexpanded{##1}}}{\to\inserts@list%
3014       \global\advance\insert@count \@ne% Increment the left insert
3015       counter.
3016     }%
3017     \xright@appenditem{\noexpand\setkeys[mac]{#3footnoteoption}{\
3018     unexpanded{##1}}}{\to\inserts@listR%
3019     \global\advance\insert@countR \@ne% Increment the right insert
3020     counter insert.
3021   }%
3022   \notblank{#2}{\docsvlist{#2}}}% Parsing all options
3023 }
3024 %

```

XIII.3 Notes language

`\footnotelang@lua` `\footnotelang@lua` is called to remember the information about the direction of a lemma when Lua¹TeX is used.

```

3023 \newcommand*{\footnotelang@lua}[1][1=L,usedefault]{%
3024   \ifstrequal{#1}{L}{%
3025     \xright@appenditem{\csxdef{footnote@luatextextdir}{\the\textdir}}{\to\
inserts@list%Know the dir of lemma
3026     \global\advance\insert@count \@ne%
3027     \xright@appenditem{\csxdef{footnote@luatexpardir}{\the\pardir}}{\to\
inserts@list%Know the dir of lemma
3028     \global\advance\insert@count \@ne%
3029   }%
3030   {%
3031     \xright@appenditem{\csxdef{footnote@luatextextdir}{\the\textdir}}{\to\
inserts@listR%Know the dir of lemma
3032     \global\advance\insert@countR \@ne%
3033     \xright@appenditem{\csxdef{footnote@luatexpardir}{\the\pardir}}{\to\
inserts@listR%Know the dir of lemma
3034     \global\advance\insert@countR \@ne%
3035   }%
3036 }
3037 %

```

`\footnotelang@poly` `\footnotelang@poly` is called to remember the information about the language of a lemma when polyglossia is used.

```

3038 \newcommand*{\footnotelang@poly}[1][1=L,usedefault]{%
3039   \ifstrequal{#1}{L}{%
3040     \if@RTL%
3041       \xright@appenditem{\csxdef{footnote@dir}{@RTLtrue}}{\to\
inserts@list%Know the language used in the lemma
3042       \global\advance\insert@count \@ne%
3043     }%
3044     \else
3045       \xright@appenditem{\csxdef{footnote@dir}{@RTLfalse}}{\to\
inserts@list%Know the language of lemma
3046       \global\advance\insert@count \@ne%
3047     }%
3048     \fi%
3049     \xright@appenditem{\csxdef{footnote@lang}{\expandonce\language}}{\to\
inserts@list%Know the language of lemma
3050     \global\advance\insert@count \@ne%
3051   }%
3052   {%
3053     \if@RTL
3054       \xright@appenditem{\csxdef{footnote@dir}{@RTLtrue}}{\to\
inserts@listR%Know the language of lemma
3055       \global\advance\insert@countR \@ne%
3056     }%
3057     \else
3058       \xright@appenditem{\csxdef{footnote@dir}{@RTLfalse}}{\to\
inserts@listR%Know the language of lemma

```

```

3056 \global\advance\insert@countR \@ne%
3057 \fi
3058 \xright@appenditem{{\csxdef{footnote@lang}{\expandonce\language}}}\
to\inserts@listR%Know the language of lemma
3059 \global\advance\insert@countR \@ne%
3060 }%
3061 }
3062 %

```

XIII.4 General survey of the way we manage notes

The processing of each note is done by four principal macros: the `\vfootnote` macro takes the text of the footnote and does the `\insert`; it calls on the `\footfmt` macro to select the right fonts, print the line number and lemma, and do any other formatting needed for that individual note. Within the output routine, the two other macros, `\footstart` and `\footgroup`, are called; the first prints extra vertical space and a footnote rule, if desired; the second does any reformatting of the whole set of the footnotes in this series for this page—such as paragraphing or division into columns—and then sends them to the page.

These four macros, and the other macros and parameters shown here, are distinguished by the ‘series letter’ that indicates which set of the footnotes we are dealing with—A, B, C, D, or E. The series letter always precedes the string `foot` in macro and parameter names. Hence, for the A series, the four macros are called `\vAfootnote`, `\Afootfmt`, `\Afootstart`, and `\Afootgroup`.

These macros are changed depending of the footnotes arrangement: “normal”, “paragraphed”, “two columns” or “three columns”.

XIII.5 General setup

`\footsplitskips` Some setup code that is common for a variety of the footnotes. The setup is for:

- `\interlinepenalty`.
- `\splittopskip` (skip before last part of notes that flow from one page to another).
- `\splitmaxdepth`.
- `\floatingpenalty`, that is penalty values being added when a long note flows from one page to another. Here, we let it to 0 when we are processing parallel pages in `eledpar`, in order to allow notes to flow from left to right pages and *vice-versa*. Otherwise, we let it to `\@MM`, which is the standard \TeX `\floatingpenalty`.

```

3063 \newcommand*{\footsplitskips}{%
3064 \interlinepenalty=\interfootnotelinepenalty
3065 \unless\ifl@dprintingpages%
3066 \floatingpenalty=\@MM%
3067 \fi%

```

```

3068 \splittopskip=\ht\strutbox \splitmaxdepth=\dp\strutbox
3069 \leftskip=\z@skip \rightskip=\z@skip
3070
3071 %

```

\normalfootnoterule \normalfootnoterule is a standard footnote-rule macro, for use by a footstart macro: just the same as the PLAIN T_EX footnote rule.

```

3072 \let\normalfootnoterule=\footnoterule
3073 %

```

XIII.6 Footnotes arrangement

XIII.6.1 User level macro

\Xarrangement \Xarrangement[*s*]{*arrangement*} The command calls, for each series, a specific command which set many counters and commands in order to define specific arrangement.

```

3074 \newcommand{\Xarrangement}[2][1,usedefault]{%
3075   \def\do##1{%
3076     \csname Xarrangement@#2\endcsname{##1}%
3077   }%
3078   \ifstrempy{#1}%
3079     {%
3080       \dolistloop{\@series}%
3081     }%
3082     {
3083       \docsvlist{#1}%
3084     }%
3085 }%
3086 %

```

XIII.6.2 Normal footnote

\Xarrangement@normal We can now define all the parameters for the series of footnotes; initially they use the “normal” footnote formatting.

What we want to do here is to insert something like the following for each footnote series. (This is an example, not part of the actual reledmac code.)

```

\skip\Afootins=12pt plus5pt minus5pt
\count\Afootins=1000
\dimen\Afootins=0.8\vsizex
\let\vAfootnote=\normalvfootnote \let\Afootfmt=\normalfootfmt
\let\Afootstart=\normalfootstart \let\Afootgroup=\normalfootgroup
\let\Afootnoterule=\normalfootnoterule

```

(Read *The TeXbook* in order to understand what are the counter, skip and dimen associated to an insertion.)

Instead of repeating ourselves, we define a `\Xarrangement@normal` macro that makes all these assignments for us, for any given series letter. This command is called when people use `\Xarrangement[⟨series⟩]{normal}`

Now we set up the `\Xarrangement@normal` macro itself. It takes one argument: the footnote series letter.

```

3087 \newcommand*{\Xarrangement@normal}[1]{%
3088   \csgdef{series@display#1}{normal}
3089   \expandafter\let\csname #1footstart\endcsname=\normalfootstart
3090   \expandafter\let\csname v#1footnote\endcsname=\normalvfootnote
3091   \expandafter\let\csname #1footfmt\endcsname=\normalfootfmt
3092   \expandafter\let\csname #1footgroup\endcsname=\normalfootgroup
3093   \expandafter\let\csname #1footnoterule\endcsname=%
3094                                     \normalfootnoterule
3095   \count\csname #1footins\endcsname=1000
3096   \dimen\csname #1footins\endcsname=\csuse{Xmaxhnotes@#1}
3097   \skip\csname #1footins\endcsname=\csuse{Xbeforenotes@#1}%
3098   \advance\skip\csname #1footins\endcsname by\csuse{Xafterrule@#1}%
3099   %

```

The `reledpar` provides tools in order to confine notes to one side. The mechanism is explained in the `reledpar`'s handbook. For now, just retain we need to store default value of the counter associated to the notes \TeX 's inserts.

```

3100   \csxdef{default@#1footins}{1000}%Use this to confine the notes to one
3101   side only
3102   %

```

Now do the setup for minipage footnotes. We use as much as possible of the normal setup as we can (so the notes will have a similar layout).

```

3102   \ifnoledgroup@else%
3103     \expandafter\let\csname mpv#1footnote\endcsname=\mpnormalvfootnote
3104     \expandafter\let\csname mp#1footgroup\endcsname=\mpnormalfootgroup
3105     \count\csname mp#1footins\endcsname=1000
3106     \dimen\csname mp#1footins\endcsname=\csuse{Xmaxhnotes@#1}
3107     \skip\csname mp#1footins\endcsname=\csuse{Xbeforenotes@#1}%
3108     \advance\skip\csname mp#1footins\endcsname by\csuse{Xafterrule@#1}%
3109   \fi
3110 }
3111
3112 %

```

`\normalvfootnote` We now begin a series of commands that do 'normal' footnote formatting: a format much like that implemented in PLAIN \TeX , in which each footnote is a separate paragraph.

`\normalvfootnote` takes the series letter as #1 and the entire text of the footnote is #2. It does the `\insert` for this note, calling on the `\footfmt` macro for this note series to format the text of the note.

```

3113 \notbool{parapparatus@}{\newcommand*}{\newcommand}{\normalvfootnote}[2]{%
3114 \iftoggle{Xgroupbyline@#1}{%In the case we use \Xgroupbyline, the
insertion is done later, in \add@Xgroupbyline.
3115 \prepare@Xgroupbyline{#1}{#2}{\normalvfootnote@inserted}%
3116 }{%In the case we don't use \Xgroupbyline, the insertion is made directly
3117 \X@beforeinsertion{#1}%
3118 \insert\csname #1footins\endcsname{%
3119 \X@atbegininsertion{#1}%
3120 \normalvfootnote@inserted{#1}{#2}%
3121 }%
3122 }%
3123 }%
3124 %

```

`\normalvfootnote@inserted` The `\normalvfootnote@inserted` macro is expanded to the content to be added to a `\insert` for normal critical footnote.

```

3125 \notbool{parapparatus@}{\newcommand*}{\newcommand}{\normalvfootnote@inserted}[2]{%
3126 \nottoggle{Xgroupbyline@#1}{\noindent}{\csuse{Xhooknote@#1}%
3127 \csuse{Xnotefontsize@#1}%
3128 \iftoggle{Xgroupbyline@#1}{\strut}{}%
3129 \footsplitskips
3130 \ifl@dpairing\ifl@dpadding\else%
3131 \setXnoteswidthliketwocolumns@{#1}%
3132 \fi\fi%
3133 \setXnotespositionliketwocolumns@{#1}%
3134 \spaceskip=\z@skip \xspaceskip=\z@skip%
3135 \csname #1footfmt\endcsname #2{#1}%
3136 }%
3137 %

```

```

\X@beforeinsertion 3138 \newcommand{\X@beforeinsertion}[1]{%
3139 \if@ledgroup\else%
3140 \insert@Xtxtbeforenotes{#1}%
3141 \fi%
3142 \csuse{Xbeforeinserting@#1}%
3143 }%
3144 %

```

```

\beforeinsertion@X 3145 \newcommand{\beforeinsertion@X}[1]{%
3146 \if@ledgroup\else%
3147 \insert@txtbeforenotesX{#1}%
3148 \fi%
3149 \csuse{beforeinsertingX@#1}%
3150 }%
3151 %

```

```

\X@atbegininsertion52 \newcommand{\X@atbegininsertion}[1]{%
3153   \hsize=\expandafter\dimexpr\csuse{Xwidth@#1}\relax%
3154 }%
3155 %

```

And somewhat different versions of `\normalvfootnote` and `\normalvfootnote@inserted` for minipages.

```

\mpnormalvfootnote56 \notbool{parapparatus@}{\newcommand*}{\newcommand}{\mpnormalvfootnote}[2]{%
3157   \iftoggle{Xgroupbyline@#1}{%
3158     \prepare@Xgroupbyline{#1}{#2}{\mpnormalvfootnote@inserted}%
3159   }%
3160   {%
3161     \global\setbox\@nameuse{mp#1footins}%
3162     \vbox{%
3163       \unvbox\@nameuse{mp#1footins}%
3164       \mpnormalvfootnote@inserted{#1}{#2}%
3165     }%
3166   }%
3167 }%
3168 %
3169 %

```

```

\mpnormalvfootnote@inserted70 \newcommand{\mpnormalvfootnote@inserted}[2]{%
3171   \noindent\csuse{Xhooknote@#1}%
3172   \csuse{Xnotefontsize@#1}%
3173   \hsize\columnwidth%
3174   \@parboxrestore%
3175   \color@begingroup%
3176   \csname #1footfmt\endcsname #2{#1}\color@endgroup%
3177 }%
3178 %

```

`\normalfootfmt` `\normalfootfmt` is a ‘normal’ macro to take the footnote line and page number information (see V.9 p. 109), and the desired text, and output what’s to be printed. Argument #1 contains the line and page number information and lemma font specifier; #2 is the lemma; #3 is the note’s text; #4 is the note’s series. This version is very rudimentary—it uses `\printlines` to print just the range of line numbers, followed by a square bracket, the lemma, and the note text.

```

3179 \notbool{parapparatus@}{\newcommand*}{\newcommand}{\normalfootfmt}[4]{%
3180   \Xstorelineinfo{#1}{#4}%
3181   \nottoggle{Xgroupbyline@#4}{\Xledsetnormalparstuff{#4}}{}%
3182   \Xsethangindent{#4}%
3183   \nottoggle{Xgroupbyline@#4}{\rule{z@}{\splittopskip}}{}%
3184   {\printlinefootnote{#1}{#4}}%
3185   \print@lemma{#1}{#2}{#4}%
3186   \csuse{Xwrapcontent@#4}{#3}%

```

```

3187 \nottoggle{Xgroupbyline@#4}{\strut\par}{}%
3188 }%
3189 %

```

\normalfootstart `\normalfootstart` is a standard footnote-starting macro, called in the output routine whenever there are footnotes of this series to be printed: it skips a bit and then draws a rule.

Any `\footstart` macro must put onto the page something that takes up space exactly equal to the `\skipXfootins` value for the associated series of notes. \TeX makes page computations based on that `\skip` value, and the output pages will suffer from spacing problems if what you add takes up a different amount of space.

But if the `\skipXprenotes@` is greater than 0 pt, it is used instead of `\skipXfootins` for the first printed series in one page.

The `\leftskip` and `\rightskip` values are both zeroed here. Similarly, these skips are cancelled in the `\vfootnote` macros for the various types of notes. Strictly speaking, this is necessary only if you are using paragraphed footnotes, but we have put it here and in the other `\vfootnote` macros too so that the behavior of `reledmac` in this respect is general across all footnote types. What this means is that any `\leftskip` and `\rightskip` you specify applies to the main text, but not the footnotes. The footnotes continue to be of width `\hsize`.

```

3190 \newcommand*{\normalfootstart}[1]{%
3191 %

```

The first series of notes printed in a page can have a specific skip before it. In order to insert this specific skip without overlap the bottom margin of the page, Maïeul Rouquette have defined an algorithm explained in XIX p. 245. Here is part of this algorithm, when the block of notes are ready to be printed.

```

3192 \ifdimequal{0pt}{\Xprenotes@}{}%
3193 {%
3194   \iftoggle{Xprenotes@}{%
3195     \togglefalse{Xprenotes@}%
3196     \skip\csname #1footins\endcsname=%
3197     \glueexpr\csuse{Xprenotes@}+\csuse{Xafterrule@#1}\relax%
3198   }%
3199   {%
3200     }%
3201   \vskip\skip\csname #1footins\endcsname%
3202 %

```

And now, the problem of left and right skip for notes. Especially when using one feature of `reledpar` which allows to have the footnotes horizontal size as the size of columns printed by `\Columns`. Read XVI p. 243 for the general description of the problem.

```

3203 \leftskip0pt \rightskip0pt
3204 \ifl@dpairing\else%
3205   \hsize=\old@hsize%
3206 \fi%
3207 \setXnoteswidthliketwocolumns@{#1}%

```

```

3208 \setXnotespositionliketwocolumns@{#1}%
3209 %

```

And now, print the footnote's rule to finish the footnote's introduction.

```

3210 \print@Xfootnoterule{#1}%
3211 }%
3212 %

```

\normalfootgroup \normalfootgroup is a standard footnote-grouping macro: it sends the contents of the footnote-insert box to the output page without alteration.

```

3213 \newcommand*{\normalfootgroup}[1]{%
3214 \csuse{Xhookgroup@#1}%
3215 \unvbox\csname #1footins\endcsname%
3216 \hsize=\old@hsize%
3217 }%
3218
3219 %

```

\mpnormalfootgroup A somewhat different version for minipages. Note that, in this case, we do not make distinctions between the \Xfootgroup and \Xfootstarts macros.

```

3220 \unless\ifnoledgroup@
3221 \newcommand*{\mpnormalfootgroup}[1]{%
3222 \vskip\skip\@nameuse{mp#1footins}
3223 \ifl@dpairing\ifparledgroup%
3224 \leavevmode\marks\parledgroup@{begin}%
3225 \marks\parledgroup@series{#1}%
3226 \marks\parledgroup@type{Xfootnote}%
3227 \fi\fi\normalcolor%
3228 \ifparledgroup%
3229 \ifl@dpairing%
3230 \else%
3231 \setXnoteswidthliketwocolumns@{#1}%
3232 \setXnotespositionliketwocolumns@{#1}%
3233 \print@Xfootnoterule{#1}%%
3234 \fi%
3235 \else%
3236 \setXnoteswidthliketwocolumns@{#1}%
3237 \setXnotespositionliketwocolumns@{#1}%
3238 \print@Xfootnoterule{#1}%%
3239 \fi%
3240 \setlength{\parindent}{0pt}
3241 \csuse{Xhookgroup@#1}%
3242 \unvbox\csname mp#1footins\endcsname}}
3243 \fi
3244 %

```

XIII.6.3 Paragraphed footnotes

The paragraphed-footnote option reformats all the footnotes of one series for a page into a single paragraph; this is especially appropriate when the notes are numerous and brief. The code is based on *The TeXbook*, pp. 398–400, with alterations for our environment. This algorithm uses a considerable amount of save-stack space: a \TeX of ordinary size may not be able to handle more than about 100 notes of this kind on a page.

`\Xarrangement@paragraph` The `\Xarrangement@paragraph` macro sets up everything for one series of the footnotes so that they will be paragraphed; it takes the series letter as argument. We include the setting of `\count\footins` to 1000 for the footnote series just in case user is switching to paragraphed footnotes after having columnar ones, since they change this value (see below).

The argument of `\Xarrangement@footparagraph` is the letter denoting the series of notes to be paragraphed.

```

3245 \newcommand*\Xarrangement@paragraph}[1]{%
3246   \csgdef{series@display#1}{\paragraph}
3247   \expandafter\let\csname #1footstart\endcsname=\parafootstart
3248   \expandafter\let\csname v#1footnote\endcsname=\paravfootnote
3249   \expandafter\let\csname #1footfmt\endcsname=\parafootfmt
3250   \expandafter\let\csname #1footgroup\endcsname=\parafootgroup
3251   \count\csname #1footins\endcsname=1000
3252   \csxdef{default@#1footins}{1000}%Use this to confine the notes to one
side only
3253   \dimen\csname #1footins\endcsname=\csuse{Xmaxhnotes@#1}
3254   \skip\csname #1footins\endcsname=\csuse{Xbeforenotes@#1}%
3255   \advance\skip\csname #1footins\endcsname by\csuse{Xafterrule@#1}%
3256   \para@footsetup{#1}
3257   %

```

And the extra setup for minipages.

```

3258 \ifnoledgroup@else
3259   \expandafter\let\csname mpv#1footnote\endcsname=\mpparavfootnote
3260   \expandafter\let\csname mp#1footgroup\endcsname=\mpparafootgroup
3261   \count\csname mp#1footins\endcsname=1000
3262   \dimen\csname mp#1footins\endcsname=\csuse{Xmaxhnotes@#1}
3263   \skip\csname mp#1footins\endcsname=\csuse{Xbeforenotes@#1}%
3264   \advance\skip\csname mp#1footins\endcsname by\csuse{Xafterrule@#1}%
3265   \fi
3266 }
3267 %

```

`\footfudgefiddle` For paragraphed footnotes \TeX has to estimate the amount of space required. If it underestimates this then the notes may get too long and run off the bottom of the text block. `\footfudgefiddle` can be increased from its default 64 (say, to 70) to increase the estimate.

```

3268 \providecommand{\footfudgefiddle}{64}
3269 %

```

`\para@footsetup` `\footparagraph` calls the `\para@footsetup` macro to calculate a special fudge factor, which is the ratio of the `\baselineskip` to the `\hsize`. We assume that the proper value of `\baselineskip` for the footnotes (normally 9pt) has been set already. The argument of the macro is again the note series letter.

Peter Wilson thinks that `\columnwidth` should be used here for \TeX not `\hsize`. Peter Wilson have also included `\footfudgefiddle`.

```

3270 \newcommand*{\para@footsetup}[1]{\csuse{Xhookgroup@#1}\csuse{
Xnotefontsize@#1}
3271 \setXnoteswidthliketwocolumns@{#1}%
3272 \ifcempty{Xwidth@#1}%
3273 {}%
3274 {\columnwidth=\expandafter\dimexpr\csuse{Xwidth@#1}\relax}%
3275 \dimen0=\baselineskip
3276 \multiply\dimen0 by 1024
3277 \divide \dimen0 by \columnwidth \multiply\dimen0 by \footfudgefiddle\
relax
3278 \csxdef{#1footfudgefactor}{%
3279 \expandafter\strip@pt\dimen0 }}
3280
3281 %

```

`\strip@pt` strip the characters pt from a dimen value.

`\parafootstart` `\parafootstart` is the same as `\normalfootstart`, but we give it again to ensure that `\rightskip` and `\leftskip` are zeroed (this needs to be done before `\para@footgroup` in the output routine). The size of paragraphed notes is calculated using a fudge factor which in turn is based on `\hsize`. So the paragraph of notes needs to be that wide.

The argument of the macro is again the note series letter.

```

3282 \newcommand*{\parafootstart}[1]{%
3283 \rightskip=0pt \leftskip=0pt%
3284 \Xsetparindent{#1}%
3285 \ifdimequal{0pt}{\Xprenotes@}{}%
3286 {%
3287 \iftoggle{Xprenotes@}{%
3288 \togglefalse{Xprenotes@}%
3289 \skip\csname #1footins\endcsname=%
3290 \glueexpr\csuse{Xprenotes@}+\csuse{Xafterrule@#1}\relax%
3291 }%
3292 }%
3293 }%
3294 \vskip\skip\csname #1footins\endcsname%
3295 \setXnoteswidthliketwocolumns@{#1}%
3296 \setXnotespositionliketwocolumns@{#1}%
3297 \print@Xfootnoterule{#1}%
3298 \let\old@bidi@RTL@everypar\bidi@RTL@everypar%
3299 \let\bidi@RTL@everypar@empty%
3300 \noindent\leavevmode%

```

```

3301 \let\bidirTL@everypar\old@bidirTL@everypar%
3302 }%
3303 %

```

\paravfootnote `\paravfootnote` is a version of the `\vfootnote` command that is used for paragraphed notes. It gets appended to the `\inserts@list` list by an outer-level footnote command like `\Afootnote`. The first argument is the note series letter; the second is the full text of the printed note itself, including line numbers, lemmata, and footnote text.

The initial model for this insertion is, of course, the `\insert\footins` definition in *The TeXbook*, p. 398. There, the footnotes are first collected up in `hboxes`, and these `hboxes` are later unpacked and stuck together into a paragraph.

However, Michael Downes has pointed out that because text in `hboxes` gets typeset in restricted horizontal mode, there are some undesirable side-effects if you later want to break such text across lines. In restricted horizontal mode, where \TeX does not expect to have to break lines, it does not insert certain items like `\discretionary`s. If you later unbox these `hboxes` and stick them together, as the *TeXbook* macros do to make these footnotes, you lose the ability to hyphenate after an explicit hyphen. This can lead to overfull `hboxes` when you would not expect to find them, and to the uninitiated it might be very hard to see why the problem had arisen.³⁰

Wayne Sullivan pointed out to us another subtle problem that arises from the same cause: \TeX also leaves the `\language` whatsit nodes out of the horizontal list.³¹ So changes from one language to another will not invoke the proper hyphenation rules in such footnotes. Since critical editions often do deal with several languages, especially in a footnotes, we really ought to get this bit of code right.

To get around these problems, Wayne suggested emendations to the *TeXbook* versions of these macros which are broadly the same as those described by Michael: the central idea (also suggested by Donald Knuth in a letter to Michael) is to avoid collecting the text in an `hbox` in the first place, but instead to collect it in a `vbox` whose width is (virtually) infinite. The text is therefore typeset in unrestricted horizontal mode, as a paragraph consisting of a single long line. Later, there is an extra level of unboxing to be done: we have to unpack the `vbox`, as well as the `hboxes` inside it, but that is not too hard. For details, we refer you to Michael's article, where the issues are clearly explained.³² Michael's unboxing macro is called `\Xunvxh`: `unvbox`, extract the last line, and `unhbox` it.

Doing things this way has an important consequence: as Michael pointed out, you really can't put an explicit line-break into a note built in a `vbox` the way we are doing.³³ In other words, be very careful not to use `\break`, or `\penalty-10000`, or any equivalent inside your para-footnote. If you do, most of the note will probably disappear. You *are* allowed to make strong suggestions; in fact `\penalty-9999` will be quite okay. Just do not make the break mandatory. We have not applied any of Michael's solutions

³⁰Michael Downes, 'Line Breaking in \unhboxed Text', *TUGboat* **11** (1990), pp. 605–612.

³¹See *The TeXbook*, p. 455 (editions after January 1990).

³²Wayne supplied his own macros to do this, but since they were almost identical to Michael's, Peter Wilson have used the latter's `\Xunvxh` macro since it is publicly documented.

³³'Line Breaking', p. 610.

here, since we feel that the problem is exiguous, and `reledmac` is quite baroque enough already. If you think you are having this problem, look up Michael's solutions.

One more thing; we set `\leftskip` and `\rightskip` to zero. This has the effect of neutralizing any such skips which may apply to the main text (cf. XIII.6.2 p. 191 above). We need to do this, since `\footfudgefactor` is calculated on the assumption that the notes are `\hsize` wide.

So, finally, here is the modified foot-paragraph code, which sets the footnote in vertical mode so that language and discretionary nodes are included.

```

3304 \newcommand*{\paravfootnote}[2]{%
3305   \csuse{Xbeforeinserting@#1}%
3306   \insert\csname #1footins\endcsname
3307   \bgroup
3308     \csuse{Xnotefontsize@#1}
3309     \footplitskips
3310     \setbox0=\vbox{\hsize=\maxdimen%
3311       \let\bidir@RTL@everypar\@empty%
3312       \insert@Xtxtbeforenotes{#1}%
3313       \noindent\csuse{Xhooknote@#1}%
3314       \csname #1footfmt\endcsname #2{#1}}%
3315     \setbox0=\hbox{\Xunvxh{0}{#1}}%
3316     \dp0=0pt
3317     \ht0=\csname #1footfudgefactor\endcsname\wd0
3318   %

```

Here we produce the contents of the footnote from box 0, and add a penalty of 0 between boxes in this insert.

```

3319   \if@RTL\noindent \leavevmode\fi\box0%
3320   \penalty0
3321   \egroup}
3322 %
3323 %

```

The final penalty of 0 was added here at Wayne's suggestion to avoid a weird page-breaking problem, which occurs on those occasions when \TeX attempts to split foot paragraphs. After trying out such a split (see *The TeXbook*, p. 124), \TeX inserts a penalty of -10000 here, which nearly always forces the break at the end of the whole footnote paragraph (since individual notes can't be split) even when this leads to an overfull vbox. The change above results in a penalty of 0 instead which allows, but does not force, such breaks. This penalty of 0 is later removed, after page breaks have been decided, by the `\unpenalty` macro in `\makehboxofhboxes`. So it does not affect how the footnote paragraphs are typeset (the notes still have a penalty of -10 between them, which is added by `\parafootfmt`).

`\mpparavfootnote` This version is for minipages.

```

3324 \newcommand*{\mpparavfootnote}[2]{%
3325   \global\setbox\@nameuse{mp#1footins}\vbox{%
3326     \unvbox\@nameuse{mp#1footins}%
3327     \csuse{Xnotefontsize@#1}

```

```

3328 \footssplitskips
3329 \setbox0=\vbox{\hsize=\maxdimen%
3330 \let\bidir@RTL@everypar\@empty%
3331 \insert@Xtxtbeforenotes{#1}%
3332 \noindent\color@begingroup%
3333 \csuse{Xbhooknote@#1}%
3334 \csname #1footfmt\endcsname #2{#1}\color@endgroup}%
3335 \setbox0=\hbox{\Xunvxh{0}{#1}}%
3336 \dp0=\z@
3337 \ht0=\csname #1footfudgefactor\endcsname\wd0
3338 \box0
3339 \penalty0
3340 }}
3341
3342 %

```

\Xunvxh Here is (modified) Michael's definition of `\unvxh`, used above. Michael's macro also takes care to remove some unwanted penalties and glue that \TeX automatically attaches to the end of paragraphs. When \TeX finishes a paragraph, it throws away any remaining glue, and then tacks on the following items: a `\penalty` of 10000, a `\parfillskip` and a `\rightskip` (*The TeXbook*, pp. 99–100). `\unvxh` cancels these unwanted paragraph-final items using `\unskip` and `\unpenalty`.

```

3343 \newcommand*{\Xunvxh}[2]{%
3344 \setbox0=\vbox{\unvbox#1%
3345 \global\setbox1=\lastbox}%
3346 \unhbox1
3347 \unskip % remove \rightskip,
3348 \unskip % remove \parfillskip,
3349 \unpenalty % remove \penalty of 10000,
3350 \hskip\csuse{Xafternote@#2}\relax}% add the glue to go between the notes
3351
3352 %

```

\parafootfmt `\parafootfmt` is `\normalfootfmt` adapted to do the special stuff needed for paragraphed notes — leaving out the `\endgraf` at the end, sticking in special penalties and kern and leaving out the `\footstrut`. The first argument is the line and page number information, the second is the lemma, the third is the text of the footnote, and the fourth is the series (optional, for backward compatibility).

```

3353 \newcommand*{\parafootfmt}[4]{%
3354 \Xstorelineinfo{#1}{#4}%
3355 \Xinsertparafootsep{#4}%
3356 \ledsetnormalparstuff@common%
3357 \printlinefootnote{#1}{#4}%
3358 \print@lemma{#1}{#2}{#4}%
3359 \csuse{Xwrapcontent@#4}{#3}%
3360 \penalty-10 }
3361 %

```

Note that in the above definition, the penalty of -10 encourages a line break between notes, so that notes have a slight tendency to begin on new lines. The `\Xinsertparafootsep` command is used to insert the `\Xparafootsep@series` between each note in the *same* page.

`\parafootgroup` This footgroup code is modelled on the macros in *The TeXbook*, p. 399. The only difference is the `\unpenalty` in `\makehboxofhboxes`, which is there to remove the penalty of 0 which was added to the end of each footnote by `\paravfootnote`.

The call to `\Xnotefontsize@s` is to ensure that the correct `\baselineskip` for the footnotes is used. The argument is the note series letter.

```

3362 \newcommand*{\parafootgroup}[1]{%
3363   \hsize=\expandafter\dimexpr\csuse{Xwidth@#1}\relax%
3364   \unvbox\csname #1footins\endcsname
3365   \ifcsstring{Xragged@#1}{L}{\RaggedLeft}{}%
3366   \ifcsstring{Xragged@#1}{R}{\RaggedRight}{}%
3367   \makehboxofhboxes
3368   \setbox0=\hbox{\unhbox0 \removehboxes}%
3369   \csuse{Xbhookgroup@#1}%
3370   \csuse{Xnotefontsize@#1}%
3371   \unhbox0\par%
3372   \global\hsize=\old@hsize%
3373 }%
3374
3375 %

```

`\mpparafootgroup` The minipage version.

```

3376 \newcommand*{\mpparafootgroup}[1]{%
3377   \setXnoteswidthliketwocolumns@{#1}%
3378   \vskip\skip\@nameuse{mp#1footins}
3379   \ifl@dpairing\ifparledgroup%
3380     \leavevmode\marks\parledgroup@{begin}%
3381     \marks\parledgroup@series{#1}%
3382     \marks\parledgroup@type{Xfootnote}%
3383   \fi\fi\normalcolor
3384   \ifparledgroup%
3385     \ifl@dpairing%
3386     \else%
3387       \setXnoteswidthliketwocolumns@{#1}%
3388       \setXnotespositionliketwocolumns@{#1}%
3389       \print@Xfootnoterule{#1}%
3390     \fi%
3391   \else%
3392     \setXnoteswidthliketwocolumns@{#1}%
3393     \setXnotespositionliketwocolumns@{#1}%
3394     \print@Xfootnoterule{#1}%
3395   \fi%
3396   \unvbox\csname mp#1footins\endcsname
3397   \ifcsstring{Xragged@#1}{L}{\RaggedLeft}{}%

```

```

3398 \ifcsstring{Xragged@#1}{R}{\RaggedRight}{}%
3399 \makehboxofhboxes
3400 \setbox0=\hbox{\unhbox0 \removehboxes}%
3401 \csuse{Xbhookgroup@#1}%
3402 \csuse{Xnotefontsize@#1}%
3403 \Xsetparindent{#1}%
3404 \unhbox0\par}}
3405
3406 %

```

And finally, the two macros which are required to transform the long horizontal box stored in the insert' box to a printable text.

```

\makehboxofhboxes07 \newcommand*{\makehboxofhboxes}{\setbox0=\hbox{}}%
\removehboxes08 \loop
3409 \unpenalty
3410 \setbox2=\lastbox
3411 \ifhbox2
3412 \setbox0=\hbox{\box2\unhbox0}%
3413 \repeat}
3414
3415 \newcommand*{\removehboxes}{\setbox0=\lastbox
3416 \ifhbox0{\removehboxes}\unhbox0 \fi}
3417
3418 %

```

Insertion of the footnotes separator The command `\Xinsertparafootsep{<series>}` must be called at the beginning of `\parafootftm`.

```

\prevpage@num19 \newcommand{\Xinsertparafootsep}[1]{%
\Xinsertparafootsep20 \ifledRcol{%
3421 \ifnumequal{\csuse{#1prevpage@numR}}{\page@numR}%
3422 {\ifcsdef{prevline#1}% Be sur \prevline#1 exists.
3423 {\ifcsequal{prevline#1}{lineinfo@}%
3424 {\ifcsequal{Xsymlinenum@#1}{\csuse{Xparafootsep@#1}}{}}%
3425 {\csuse{Xparafootsep@#1}}%
3426 }%
3427 {\csuse{Xparafootsep@#1}}%
3428 }%
3429 {}}%
3430 \global\csname #1prevpage@numR\endcsname=\page@numR%
3431 \else%
3432 \ifnumequal{\csuse{#1prevpage@num}}{\page@num}%
3433 {\ifcsdef{prevline#1}% Be sur \prevline#1 exists.
3434 {\ifcsequal{prevline#1}{lineinfo@}%
3435 {\ifcsequal{Xsymlinenum@#1}{\csuse{Xparafootsep@#1}}{}}%
3436 {\csuse{Xparafootsep@#1}}%
3437 }%

```

```

3438     {\csuse{Xparafootsep@#1}}}%
3439   }%
3440   {}%
3441   \global\csname #1prevpage@num\endcsname=\page@num%
3442   \fi%
3443 }
3444 %

```

XIII.6.4 Columnar footnotes

Common tools

`\rigidbalance` We will now define macros for three-column notes and two-column notes. Both sets of macros will use `\rigidbalance`, which splits a box (#1) into a number (#2) of columns, each with a space (#3) between the top baseline and the top of the `\vbox`. The `\Xrigidbalance` `\dosplits` `\splitoff` `\@h` `\@k` `\rigidbalance` macro is taken from *The TeXbook*, p. 397, with a slight change to the syntax of the arguments so that they do not depend on white space. Note also the extra unboxing in `\splitoff`, which allows the new `\vbox` to have its natural height as it goes into the alignment.

The \LaTeX `\line` macro has no relationship to the TeX `\line`. The \LaTeX equivalent is `\@@line`.

We do not call directly `\rigidbalance`, but we call `\Xrigidbalance` for critical notes and `\rigidbalanceX` for familiar notes. Both of them call `\rigidbalance`.

```

3445 \newcount\@k \newdimen\@h
3446 \newcommand*\Xrigidbalance}[3]{%
3447   \hsize=\expandafter\dimexpr\csuse{Xwidth@\@currentseries}\relax%
3448   \rigidbalance{#1}{#2}{#3}%
3449 }%
3450
3451 \newcommand*\rigidbalanceX}[3]{%
3452   \hsize=\expandafter\dimexpr\csuse{widthX@\@currentseries}\relax%
3453   \rigidbalance{#1}{#2}{#3}%
3454 }%
3455
3456 \newcommand*\rigidbalance}[3]{%
3457   \setbox0=\box#1 \@k=#2 \@h=#3%
3458   \@@line{\splittopskip=\@h \vbadness=\@M \hfilneg
3459     \valign{##\vfil\cr\dosplits}}}%
3460
3461 \newcommand*\dosplits{\ifnum\@k>0 \noalign{\hfil}\splitoff
3462   \global\advance\@k-1\cr\dosplits\fi}
3463
3464 \newcommand*\splitoff{\dimen0=\ht0
3465   \divide\dimen0 by\@k \advance\dimen0 by\@h
3466   \setbox2 \vsplit0 to \dimen0
3467   \unvbox2 }
3468
3469 %

```

Three columns

```
\Xarrangement@threecol 170 \newcommand*{\Xarrangement@threecol}[1]{%
3471 \csgdef{series@display#1}{threecol}
3472 \expandafter\let\csname v#1footnote\endcsname=\threecolvfootnote
3473 \expandafter\let\csname #1footfmt\endcsname=\threecolfootfmt
3474 \expandafter\let\csname #1footgroup\endcsname=\threecolfootgroup
3475 \dimen\csname #1footins\endcsname=\csuse{Xmaxhnotes@#1}%
3476 \skip\csname #1footins\endcsname=\csuse{Xbeforenotes@#1}%
3477 \advance\skip\csname #1footins\endcsname by\csuse{Xafterrule@#1}%
3478 \threecolfootsetup{#1}
3479 %
```

The additional setup for minipages.

```
3480 \ifnoledgroup@else
3481 \expandafter\let\csname mpv#1footnote\endcsname=\mpnormalvfootnote
3482 \expandafter\let\csname mp#1footgroup\endcsname=\mpthreecolfootgroup
3483 \skip\csname mp#1footins\endcsname=\csuse{Xbeforenotes@#1}%
3484 \advance\skip\csname mp#1footins\endcsname by\csuse{Xafterrule@#1}%
3485 \mpthreecolfootsetup{#1}
3486 \fi
3487 }
3488
3489 %
```

The `\footstart` and `\footnoterule` macros for these notes assume the normal values (XIII.6.2 p. 191 above).

`\threecolfootsetup` The `\threecolfootsetup` macro calculates and sets some numbers for three-column footnotes.

We set the `\count` of the foot insert to 333. Each footnote can be thought of as contributing only one third of its height to the page, since the footnote insertion has been made as a long narrow column, which then gets trisected by the `\rigidbalance` routine (inside `\threecolfootgroup`). These new, shorter columns are saved in a box, and then that box is *put back* into the footnote insert, replacing the original collection of the footnotes. This new box is, therefore, only about a third of the height of the original one.

The `\dimen` value for this note series has to change in the inverse way: it needs to be three times the actual limit on the amount of space these notes are allowed to fill on the page, because when \TeX is accumulating material for the page and checking that limit, it does not apply the `\count` scaling.

```
3490 \newcommand*{\threecolfootsetup}[1]{%
3491 \count\csname #1footins\endcsname 333
3492 \csxdef{default@#1footins}{333}%Use this to confine the notes to one
side only
3493 \multiply\dimen\csname #1footins\endcsname \thr@@}
3494 %
```

`\mpthreecolfootsetup` The setup for minipages.

```

3495 \newcommand*\mpthreecolfootsetup}[1]{%
3496   \count\csname mp#1footins\endcsname 333
3497   \multiply\dimen\csname mp#1footins\endcsname \thr@@}
3498
3499 %

```

`\threecolvfootnote` `\threecolvfootnote` This is the `\vfootnote` command for three-column notes. However, most of the code is deported on `\threecolvfootnote@inserted`. The call to `\Xnotefontsize@<s>` ensures that the `\splittopskip` and `\splitmaxdepth` take their values from the right `\strutbox`: the one used in a footnotes. Note especially the importance of temporarily reducing the `\hsize` to 0.3 of its normal value. This determines the widths of the individual columns. So if the normal `\hsize` is (say) 10 cm, then each column will be $0.3 \times 10 = 3$ cm wide, leaving a gap of 1 cm spread equally between columns (i.e., .5 cm between each).

The arguments are #1 the note series letter and #1 the full text of the note (including numbers, lemma and text).

```

3500 \notbool{parapparatus@}\newcommand*\newcommand*\threecolvfootnote}[2]{%
3501   \iftoggle{Xgroupbyline@#1}{%
3502     \prepare@Xgroupbyline{#1}{#2}\threecolvfootnote@inserted}%
3503   }%
3504   {%
3505     \let\bidir@RTL@everypar\relax%
3506     \X@beforeinsertion{#1}%
3507     \insert\csname #1footins\endcsname{%
3508       \threecolvfootnote@inserted{#1}{#2}%
3509     }%
3510   }%
3511 }%
3512 %

```

```

\threecolvfootnote@inserted 13 \notbool{parapparatus@}\newcommand*\newcommand*\threecolvfootnote@inserted}[2]{%
3514   \hsize=\expandafter\dimexpr\csuse{Xwidth@#1}\relax%
3515   \noindent\csuse{Xhooknote@#1}%
3516   \csuse{Xnotefontsize@#1}%
3517   \footsplitskips%
3518   \csname #1footfmt\endcsname #2{#1}%
3519 }%
3520 %

```

`\threecolfootfmt` `\threecolfootfmt` is the command that formats one note. The arguments are #1 the line numbers, #2 the lemma and #4 the text of the `-footnote` command #4 optional (for backward compatibility): the series.

```

3521 \notbool{parapparatus@}\newcommand*\newcommand*\threecolfootfmt}[4]{%

```

```

3522 \Xstorelineinfo{#1}{#4}%
3523 \threecol@begin@insert{#4}%
3524 \hspace{\parindent}%
3525 \printlinefootnote{#1}{#4}%
3526 \print@lemma{#1}{#2}{#4}%
3527 \csuse{Xwrapcontent@#4}{#3}%
3528 \nottoggle{Xgroupbyline@#4}%
3529   {\strut\par\allowbreak}%
3530   }%
3531 }%
3532 %

```

\threecol@begin@insert The `\threecol@begin@insert` contains code used at the beginning of any `\insert` for critical footnotes in three columns. It is used both by `\threecolfootfmt` and by `\insert@Xtxtbeforenotes`.

```

3533 \newcommand{\threecol@begin@insert}[1]{%
3534   \normal@pars%
3535   \nottoggle{Xgroupbyline@#1}%
3536     {\hsize \csuse{Xhsizethreecol@#1}}%
3537     }%
3538   \Xsetparindent{#1}%
3539   \tolerance=5000%
3540   \Xsethangindent{#1}%
3541   \@tempdima=\parindent%
3542   \csuse{Xcolalign@#1}%
3543   \parindent=\@tempdima%
3544   \strut%
3545 }%
3546 %

```

\threecolfootgroup And here is the `footgroup` macro that is called within the output routine to regroup the notes into three columns. Once again, the call to `\Xnotefontsize@{s}` is there to ensure that it is the right `\splittopskip`—the one used in footnotes—which is used to provide the third argument for `\rigidbalance`. This third argument (`\@h`) is the `topskip` for the box containing the text of the footnotes, and does the job of making sure the top lines of the columns line up horizontally. In *The TeXbook*, p. 398, Donald Knuth suggests retrieving the output of `\rigidbalance`, putting it back into the insertion box, and then printing the box. Here, we just print the `\line` which comes out of `\rigidbalance` directly, without any re-boxing.

```

3547 \newcommand*{\threecolfootgroup}[1]{%
3548   \begin@group%
3549   \csuse{Xhookgroup@#1}%
3550   \csuse{Xnotefontsize@#1}%
3551   \par%
3552   \splittopskip=\ht\strutbox%
3553   \expandafter%
3554   \Xrigidbalance\csname #1footins\endcsname \thr@@ \splittopskip%

```

```

3555 \endgroup%
3556 }%
3557 %

```

\mpthreecolfootgroup The setup for minipages.

```

3558 \newcommand*{\mpthreecolfootgroup}[1]{%
3559 \vskip\skip\@nameuse{mp#1footins}
3560 \ifl@dpairing\ifparledgroup%
3561 \leavevmode\marks\parledgroup@{begin}%
3562 \marks\parledgroup@series{#1}%
3563 \marks\parledgroup@type{Xfootnote}%
3564 \fi\fi\normalcolor
3565 \ifparledgroup%
3566 \ifl@dpairing%
3567 \else%
3568 \setXnoteswidthliketwocolumns@{#1}%
3569 \setXnotespositionliketwocolumns@{#1}%
3570 \print@Xfootnoterule{#1}%
3571 \fi%
3572 \else%
3573 \setXnoteswidthliketwocolumns@{#1}%
3574 \setXnotespositionliketwocolumns@{#1}%
3575 \print@Xfootnoterule{#1}%
3576 \fi%
3577 \csuse{Xbhookgroup@#1}\par%
3578 \splittopskip=\ht\strutbox
3579 \expandafter
3580 \Xrigidbalance\csname mp#1footins\endcsname \thr@@ \splittopskip}}
3581
3582 %

```

Two columns

```

\Xarrangement@twocol 3583 \newcommand*{\Xarrangement@twocol}[1]{%
3584 \csgdef{series@display#1}{twocol}
3585 \expandafter\let\csname v#1footnote\endcsname=\twocolvfootnote
3586 \expandafter\let\csname #1footfmt\endcsname=\twocolfootfmt
3587 \expandafter\let\csname #1footgroup\endcsname=\twocolfootgroup
3588 \dimen\csname #1footins\endcsname=\csuse{Xmaxhnotes@#1}%
3589 \skip\csname #1footins\endcsname=\csuse{Xbeforenotes@#1}%
3590 \advance\skip\csname #1footins\endcsname by\csuse{Xafterrule@#1}%
3591 \twocolfootsetup{#1}
3592 %

```

The additional setup for minipages.

```

3593 \ifnoledgroup@else
3594 \expandafter\let\csname mpv#1footnote\endcsname=\mpnormalvfootnote
3595 \expandafter\let\csname mp#1footgroup\endcsname=\mptwocolfootgroup

```

```

3596 \skip\csname mp#1footins\endcsname=\csuse{Xbeforenotes@#1}%
3597 \advance\skip\csname mp#1footins\endcsname by\csuse{Xafterrule@#1}%
3598 \mptwocolfootsetup{#1}
3599 \fi
3600 }
3601
3602 %

```

`\twocolfootsetup` Here is a series of macros which are very similar to their three-column counterparts. In this case, each note is assumed to contribute only a half a line of text. And the notes are set in columns giving a gap between them of one tenth of the `\hsize`.

```

\begin{macrocode}
\newcommand*{\twocolfootsetup}[1]{%
\count\csname #1footins\endcsname 500
\csxdef{default@#1footins}{500}%
\multiply\dimen\csname #1footins\endcsname \tw@}
\end{macrocode}

\begin{macrocode}
\newcommand*{\twocolvfootnote}[2]{%
\iftoggle{Xgroupbyline@#1}{%
\prepare@Xgroupbyline{#1}{#2}{\twocolvfootnote@inserted}%
}{%
\let\bidir@RTL@everypar\relax%
\X@beforeinsertion{#1}%
\insert\csname #1footins\endcsname{%
\twocolvfootnote@inserted{#1}{#2}%
}%
}%
}%
\end{macrocode}

\begin{macrocode}
\newcommand*{\twocolvfootnote@inserted}[2]{%
\hsize=\expandafter\dimexpr\csuse{Xwidth@#1}\relax%
\noindent\csuse{Xhooknote@#1}%
\csuse{Xnotefontsize@#1}%
\footssplitsskip%
\csname #1footfmt\endcsname #2{#1}%
}%
%
\end{macrocode}

\begin{macrocode}
\newcommand*{\twocolfootfmt}[4]{% 4th
arg is optional, for backward compatibility
\Xstorelineinfo{#1}{#4}%
\twocol@begin@insert{#4}%
\hspace{\parindent}%
\printlinefootnote{#1}{#4}%
\print@lemma{#1}{#2}{#4}%
\csuse{Xwrapcontent@#4}{#3}%
\nottoggle{Xgroupbyline@#4}%
{\strut\par\allowbreak}%
}%
%
\end{macrocode}

```

```

3637 }%
3638 %

3639 \newcommand{\twocol@begin@insert}[1]{%
3640   \normal@pars%
3641   \nottoggle{Xgroupbyline@#1}%
3642   {\hsize \csuse{Xhsizetwocol@#1}}%
3643   {}%
3644   \Xsetparindent{#1}%
3645   \tolerance=5000%
3646   \Xsethangindent{#1}%
3647   \@tempdima=\parindent%
3648   \csuse{Xcolalign@#1}%
3649   \parindent=\@tempdima%
3650   \strut%
3651 }%
3652
3653 \newcommand*\twocolfootgroup[1]{%
3654   \begingroup%
3655   \csuse{Xbhookgroup@#1}%
3656   \csuse{Xnotefontsize@#1}%
3657   \par%
3658   \splittopskip=\ht\strutbox%
3659   \expandafter%
3660   \Xrigidbalance\csname #1footins\endcsname \tw@ \splittopskip%
3661   \endgroup%
3662 }%
3663
3664 %

```

`\mptwocolfootsetup` The versions for minipages.

`\mptwocolfootgroup`

```

3665 \newcommand*\mptwocolfootsetup[1]{%
3666   \count\csname mp#1footins\endcsname 500
3667   \multiply\dimen\csname mp#1footins\endcsname \tw@}
3668 %

3669 \newcommand*\mptwocolfootgroup[1]{%
3670   \vskip\skip\@nameuse{mp#1footins}
3671   \ifl@dpairing\ifparledgroup%
3672     \leavevmode\marks\parledgroup@{begin}%
3673     \marks\parledgroup@series{#1}%
3674     \marks\parledgroup@type{Xfootnote}%
3675   \fi\fi\normalcolor
3676   \ifparledgroup%
3677     \ifl@dpairing%
3678     \else%
3679       \setXnoteswidthliketwocolumns@{#1}%
3680       \setXnotespositionliketwocolumns@{#1}%
3681       \print@Xfootnoterule{#1}%

```

```

3682 \fi%
3683 \else%
3684 \setXnoteswidthliketwocolumns@{#1}%
3685 \setXnotespositionliketwocolumns@{#1}%
3686 \print@Xfootnoterule{#1}%
3687 \fi%
3688 \csuse{Xbhookgroup@#1}\par%
3689 \splittopskip=\ht\strutbox
3690 \expandafter
3691 \Xrigidbalance\csname mp#1footins\endcsname \tw@ \splittopskip}}
3692
3693 %

```

XIII.7 Footnote paragraph indent

\Xsetparindent These two commands set the paragraph indentation of the footnotes, depending of the
\setparindentX settings of the user.

```

3694 \newcommand{\Xsetparindent}[1]{%
3695 \nottoggle{Xparindent@#1}{%
3696 \parindent=\z@%
3697 }%
3698 {%
3699 \ifdef{\parindent@beforestanza}{\parindent=\parindent@beforestanza}{}%
3700 }%
3701 }%
3702 \newcommand{\setparindentX}[1]{%
3703 \nottoggle{parindentX@#1}{%
3704 \parindent=\z@%
3705 }%
3706 {%
3707 \ifdef{\parindent@beforestanza}{\parindent=\parindent@beforestanza}{}%
3708 }%
3709 }%
3710 %

```

XIII.8 Footnote hanging indent

\Xsethangindent \Xsethangindent sets the hangindent for a critical footnote, while \sethangindentX
\sethangindentX does it for a familiar footnote.

```

3711 \newcommand{\Xsethangindent}[1]{%
3712 \if@RTL%
3713 \hangindent=-\csuse{Xhangindent@#1}%
3714 \everypar{\hangindent=-\csuse{Xhangindent@#1}}%
3715 \else%
3716 \hangindent=\csuse{Xhangindent@#1}%
3717 \everypar{\hangindent=\csuse{Xhangindent@#1}}%
3718 \fi%

```

```

3719 }%
3720 \newcommand{\sethangindentX}[1]{%
3721   \if@RTL%
3722     \hangindent=-\csuse{hangindentX@#1}%
3723     \everypar{\hangindent=-\csuse{hangindentX@#1}}%
3724   \else%
3725     \hangindent=\csuse{hangindentX@#1}%
3726     \everypar{\hangindent=\csuse{hangindentX@#1}}%
3727   \fi%
3728 }%
3729 %

```

XIII.9 Critical notes presentation

Here, we define some commons macro which are used in order to print a critical notes, that is a note with 1) line number 2) lemma 3) lemma separator 4) text associated to the lemma.

XIII.9.1 Font tools

`\endashchar` The fonts that are used for printing notes might not have the character mapping we expect: for example, the Computer Modern font that contains old-style numerals does not contain an en-dash or square brackets, and its period and comma are in odd locations. To allow use of the standard footnote macros with such fonts, we use the following macros for certain characters.

The `\endashchar` macro is simply an en-dash from the normal font and is immune to changes in the surrounding font. The same goes for the full stop. These two are used in `\printlines`. The right bracket macro is the same again; it crops up in `\normalfootfmt` and the other footnote macros for controlling the format of the footnotes.

Note that these commands are not directly called by `reledmac`, but are enclosed as default value of specific hooks. Consequently, people should not redefine them, but use instead the `\Xlinrangeseparator`, `\Xendlinrangeseparator`, `\Xsublinesep`, `\Xendsublinesep` and `\Xlemmaseparator` macros.

With `polyglossia`, each critical note has a `\footnote@lang` which shows the language of the lemma, and which can be used to switch the bracket from right to left.

```

3730 \def\endashchar{\textnormal{--}}
3731
3732 \newcommand*{\fullstop}{\textnormal{.}}
3733 \def\Xsublinesep@side{\fullstop}
3734
3735 \newcommand*{\rbracket}{\textnormal{%
3736   \csuse{text\csuse{footnote@lang}}}%
3737   \ifluatex%
3738     \ifdefstring{\footnote@luatextextdir}{TRT}{\thinspace[]\thinspace
3739     ]}%
3740   \else%

```

```

3740     \thinspace]%
3741     \fi}%
3742   }%
3743 }
3744
3745 %

```

XIII.9.2 Pstart number in footnote

`\printpstart` The `\printpstart` macro prints the pstart number for a note.

```

3746 \newcommand{\printpstart}[0]{%
3747   \ifboolexpr{bool{l@dpairing} or bool{l@dprintingpages} or bool{
l@dprintingcolumns}}{%
3748     \ifledRcol%
3749       \thepstartR%
3750     \else%
3751       \thepstartL%
3752     \fi%
3753   }{%
3754     \thepstart%
3755   }%
3756 }
3757 %

```

XIII.9.3 Lemma printing

`\print@lemma` `\print@lemma` is called inside critical footnotes to print the lemma and the lemma separator (#1: line number and font information, #2: lemma, #3: series).

```

3758 %
3759 \newcommand{\print@lemma}[3]{%
3760   \bgroup%
3761   \nottoggle{Xlemmadisablefontselection@#3}%
3762     {\select@lemmafont#1|}%
3763   }%
3764   \bgroup%
3765     \csuse{Xlemmafont@#3}%Deprecated
3766     \csuse{Xwraplemma@#3}{#2}%
3767   \egroup%
3768   \egroup%
3769   \iftoggle{nosep@}{%
3770     \hskip\csuse{Xinplaceoflemmaseparator@#3}%
3771     \relax%
3772   }%
3773   {\ifcsemtty{Xlemmaseparator@#3}%
3774     {%
3775       \hskip\csuse{Xinplaceoflemmaseparator@#3}%
3776       \relax%

```

```

3777 }%
3778 {%
3779   \nobreak%
3780   \hskip\csuse{Xbeforelemmaseparator@#3}%
3781   \csuse{Xlemmaseparator@#3}%
3782   \hskip\csuse{Xafterlemmaseparator@#3}%
3783   \relax%
3784 }%
3785 }%
3786 }%
3787 %

```

XIII.9.4 Line number printing

\Xstorelineinfo The `\Xstorelineinfo` macro is used to store some data about line number of the current critical footnote, data which will be reused later for the `\Xnumberonlyfirstinline` and related setting.

#1 footnote specification for the current footnote; #2 footnote series.

```

3788 \newcommand{\Xstorelineinfo}[2]{%
3789   \l@dp@rsefootspec#1|}%
3790   \iftoggle{Xnumberonlyfirstintwolines@#2}{%
3791     \xdef\lineinfo@{\l@dparsedstartline - \l@dparsedstartsub - \
3792     \l@dparsedendline - \l@dparsedendsub}%
3793   }%
3794   {%
3795     \xdef\lineinfo@{\l@dparsedstartline - \l@dparsedstartsub}%
3796   }%
3797   %

```

\printlinefootnote The `\printlinefootnote` macro is called in each `\<type>footfmt` command. It controls whether the line number is printed or not, according to the series options. Its first argument is the information about lines; its second is the series of the footnote. The printing of the line number is shared in `\printlinefootnotenumbers`.

```

3798 \newcommand{\printlinefootnote}[2]{%
3799   \iftoggle{nonum@}{%Try if the line number must printed for this specific
3800   not (by default, yes)
3801     \hspace{\csuse{Xinplaceofnumber@#2}}%
3802   }%
3803   {%
3804     \iftoggle{Xnonumber@#2}{%Try if the line number must printed (by
3805     default, yes)
3806       {%
3807         \hspace{\csuse{Xinplaceofnumber@#2}}%
3808       }%
3809     }%

```

```

3809      {\iftoggle{Xnumberonlyfirstinline@#2}% If for this series the
line number must be printed only in the first time.
3810      {%
3811      \ifcsdef{prevline#2}%
3812      {%Be sure the \prevline exists.
3813      \ifcsequal{prevline#2}{\lineinfo@}%Try it
3814      {%
3815      \ifcsequal{Xsymlinenum@#2}%
3816      {%
3817      \hspace{\csuse{Xinplaceofnumber@#2}}%
3818      }%
3819      {\printsymlinefootnotearea{#2}}%
3820      }%
3821      {%
3822      \printlinefootnotearea{#1}{#2}%
3823      }%
3824      }%
3825      {%
3826      \printlinefootnotearea{#1}{#2}%
3827      }%
3828      }%
3829      {%
3830      \printlinefootnotearea{#1}{#2}%
3831      }%
3832      \csxdef{prevline#2}{\lineinfo@}%
3833      }%
3834      }%
3835      }%
3836      }%
3837      }
3838      %

```

\printsymlinefootnotearea This macro prints the space before the line symbol, changes the font, when prints the line symbol and the space after it.

```

3839 \newcommand{\printsymlinefootnotearea}[1]{%
3840 \hspace{\csuse{Xbeforeysymlinenum@#1}}%
3841 \csuse{Xnotenumfont@#1}%
3842 \ifdimequal{\csuse{Xboxsymlinenum@#1}}{\z@}%
3843 {\csuse{Xsymlinenum@#1}}%
3844 {\hbox to \csuse{Xboxsymlinenum@#1}%
3845 {\csuse{Xsymlinenum@#1}\hfill}%
3846 }%
3847 \hspace{\csuse{Xaftersymlinenum@#1}}%
3848 }%
3849 %

```

\printlinefootnotearea This macro prints the space before the line number, changes the font, then prints the line number and the space after it. It is called by \printlinefootnote depending of

the options about repeating line numbers. The first argument is line information, the second is the notes series (A, B, C, etc.)

```

3850 \newcommand{\printlinefootnotearea}[2]{%
3851   \printXbeforenumber{#2}%
3852   \csuse{Xnotenumfont@#2}%
3853   \boxfootnotenumbers{#1}{#2}%
3854   \printXafternumber{#2}%
3855 }%
3856 %

```

\boxfootnotenumbers Depending on the user settings, this macro will box line numbers (or not). The first argument is line information, the second is the notes series (A, B, C, etc.) The previous `\printlinefootnotearea` calls it.

```

3857 \newcommand{\boxfootnotenumbers}[2]{%
3858   \ifdimequal{\csuse{Xboxlinenum@#2}}{0pt}{%
3859     \printlinefootnotenumbers{#1}{#2}%
3860   }%
3861   {%
3862     \hbox to \csuse{Xboxlinenum@#2}%
3863     {%
3864       \IfSubStr{RC}{\csuse{Xboxlinenumalign@#2}}{\hfill}{}%
3865       \printlinefootnotenumbers{#1}{#2}%
3866       \IfSubStr{LC}{\csuse{Xboxlinenumalign@#2}}{\hfill}{}%
3867     }%
3868   }%
3869 }%
3870 %

```

\printlinefootnotenumbers This macro prints, if needed, the pstart number and the line number. The first argument is line information, the second is the notes series (A, B, C, etc.) The previous `\boxlinefootnote` calls it.

```

3871 \newcommand{\printlinefootnotenumbers}[2]{%
3872   \xdef\@currentseries{#2}%
3873   \ifboolexpr{%
3874     (togl{Xpstart@#2} and bool{numberpstart})%
3875     or togl{Xpstarteverytime@#2}}%
3876   {\printpstart}{}%
3877   \iftoggle{Xstanza@#2}{%
3878     \ifnumberstanza%
3879     \printstanza%
3880     \csuse{Xstanzaseparator@#2}%
3881   \fi}%
3882 }{}%
3883 \iftoggle{Xonlypstart@#2}{%
3884   \csuse{Xtxtbeforenumber@#2}%
3885   \printlines#1|\ifledRcol@{\@Rlineflag\fi}}%
3886 }%
3887 %

```

`\printXbeforenumber` This macro prints a space (before the line number) in footnote. It is called by `\printlinefootnotearea`. Its only argument is the note series (A, B, C, etc.)

```
3888 \newcommand{\printXbeforenumber}[1]{%
3889   \hspace{\csuse{Xbeforenumber@#1}}%
3890 }%
3891 %
```

`\printXafternumber` This macro prints the space, adding eventually a `\nobreak`, after the line number, in footnote. It is called by `\printlinefootnotearea`. Its only argument is the series

```
3892 \newcommand{\printXafternumber}[1]{%
3893   \iftoggle{Xnonbreakableafternumber@#1}{\nobreak}{}%
3894   \hspace{\csuse{Xafternumber@#1}}%
3895 }%
3896 %
```

If we have decided to print the line number in a specific notes, the `\printlines` macro prints the line numbers for a note—which, in the general case, is a rather complicated task. The seven parameters of the argument are the line numbers as stored in `\l@d@nums`, in the form described on V.9 p. 109: the starting page, line, and sub-line numbers, followed by the ending page, line, and sub-line numbers, and then the font specifier for the lemma.

edmac’ creator have defined six boolean in order to know which component of line number description we have to print:

- `\ifl@d@pnum` for page numbers;
- `\ifl@d@ssub` for starting sub-line;
- `\ifl@d@elin` for ending line;
- `\ifl@d@esl` for ending sub-line; and
- `\ifl@d@dash` for the dash between the starting and ending groups.

There is no boolean for the line number because it is always printed.

Maïeul Rouquette has added `\ifl@d@Xtwolines` and `\ifl@d@Xmorethantwolines` to print a symbol which stands for “and subsequent” when there are two, three or more lines. Is also defines `\@annot@start@print` and `\@annot@end@print` which define annotations associated with the starting and ending line numbers in critical footnotes.

```
\ifl@d@pnum 97 \newif\ifl@d@pnum
\ifl@d@ssub 98 \newif\ifl@d@ssub
\ifl@d@elin 99 \newif\ifl@d@elin
\ifl@d@esl 100 \newif\ifl@d@esl
\ifl@d@dash 101 \newif\ifl@d@dash
\ifl@d@Xtwolines 102 \newif\ifl@d@Xtwolines%
\ifl@d@Xmorethantwolines 103 \newif\ifl@d@Xmorethantwolines%
\@annot@start@print 104 \let\@annot@start@print\relax%
\@annot@end@print 105 \let\@annot@end@print\relax%
106 %
```

```

\l@dp@rsefootsspec \l@dp@rsefootsspec{<spec>}{<lemma>}{<text>} parses a footnote specification. <lemma>
\l@dp@rsefootsspec and <text> are the lemma and text respectively. <spec> is the line and page num-
\l@dp@rsefootsspec ber and lemma font specifier in \l@d@nums style format. The real work is done by
\l@dp@rsefootsspec \l@dp@rsefootsspec which defines macros holding the numeric values. In many cases,
\l@dp@rsefootsspec this last command is called directly. Just a reminder of the arguments:
\l@dp@rsefootsspec \printlines #1 | #2 | #3 | #4 | #5 | #6 | #7
\l@dp@rsefootsspec \printlines start-page | line | subline | end-page | line | subline | fontflag
\l@dp@rsefootsspec
3907 \newcommand*{\l@dp@rsefootsspec}[3]{\l@dp@rsefootsspec#1|}
3908 \def\l@dp@rsefootsspec#1|#2|#3|#4|#5|#6|#7|{%
3909 \gdef\l@dp@rsefootsspec#1{#1}%
3910 \gdef\l@dp@rsefootsspec#2{#2}%
3911 \gdef\l@dp@rsefootsspec#3{#3}%
3912 \gdef\l@dp@rsefootsspec#4{#4}%
3913 \gdef\l@dp@rsefootsspec#5{#5}%
3914 \gdef\l@dp@rsefootsspec#6{#6}%
3915 }
3916 %

```

Initialise the several number value macros.

```

3917 \def\l@dp@rsefootsspec#1{0}%
3918 \def\l@dp@rsefootsspec#2{0}%
3919 \def\l@dp@rsefootsspec#3{0}%
3920 \def\l@dp@rsefootsspec#4{0}%
3921 \def\l@dp@rsefootsspec#5{0}%
3922 \def\l@dp@rsefootsspec#6{0}%
3923
3924 %

```

\setprintlines The macro `\setprintlines` does the work of deciding what numbers should be printed. Its arguments are the same as the first 6 of `\printlines`.

```

3925 \newcommand*{\setprintlines}[6]{%
3926 \let\@cannot@start@print\relax%
3927 \let\@cannot@end@print\relax%
3928 \l@d@pnumfalse%
3929 \l@d@dashfalse%
3930 \l@d@elinfalse%
3931 %

```

We print the page numbers only if: 1) we are doing the lineation by page, and 2) the ending page number is different from the starting page number.a

```

3932 \ifbypage@
3933 \ifnum#4=#1 \else
3934 \l@d@pnumtrue
3935 \l@d@dashtrue
3936 \fi
3937 \fi
3938 %

```

We print the ending line number if: (1) we are printing the ending page number, or (2) the ending line number is different from the starting line number. If either of these conditions is true, we also print the annotation linked to the ending line number annotations.

```

3939 \ifboolexpr{%
3940   bool{!@d@pnum}%
3941   or not test{\ifnumequal{#2}{#5}}}%
3942 }{%
3943   \ld@elintrue%
3944   \ld@dashtrue%
3945   \unless\ifx\relax\annot@end%
3946   \def\@annot@end#print{%
3947     \l@wrapcs@ifnotemptybox{Xwraplinenumannotation@\@currentseries}{\
annot@end}%
3948   }%
3949   \fi%
3950 }{%}%
3951 %

```

We define the starting line number annotation as a merge of the starting annotation and ending annotation if we don't print the ending line number. Otherwise, it is only the starting annotation.

```

3952 \if!@d@elin%
3953   \def\@annot@start#print{%
3954     \l@wrapcs@ifnotemptybox{Xwraplinenumannotation@\@currentseries}{\
annot@start}%
3955   }%
3956   \else%
3957     \ifx\annot@start\annot@end%
3958       \unless\ifx\@annot@start\relax%
3959         \def\@annot@start#print{%
3960           \l@wrapcs@ifnotemptybox{Xwraplinenumannotation@\@currentseries}{\
annot@start}%
3961         }%
3962         \fi%
3963       \else%
3964         \ifx\@annot@end#print\relax%
3965           \def\@annot@start#print{%
3966             \l@wrapcs@ifnotemptybox{Xwraplinenumannotation@\@currentseries}{%
3967               \ifx\annot@start\empty\else%
3968                 \annot@start%
3969                 \ifdefined\linrangesep%
3970                   \linrangesep%
3971                 \else%
3972                   \csuse{Xlinrangeseparator@\@currentseries}%
3973                 \fi%
3974               \fi%
3975             \annot@end%
3976             }%

```

```

3977     }%
3978     \else%
3979         \let\@annot@start@print\@annot@end@print%
3980         \let\@annot@end@print\relax%
3981     \fi%
3982 \fi%
3983 \fi%
3984 %

```

We print the starting sub-line if it is nonzero.

```

3985 \l@d@ssubfalse
3986 \ifnum#3=0 \else
3987     \l@d@ssubtrue
3988 \fi
3989 %

```

We print the ending sub-line if it is nonzero and: (1) it is different from the starting sub-line number, or (2) the ending line number is being printed.

```

3990 \l@d@eslfalse
3991 \ifnum#6=0 \else
3992     \ifnum#6=#3
3993         \ifl@d@elin \l@d@esltrue \else \l@d@eslfalse \fi
3994     \else
3995         \l@d@esltrue
3996         \l@d@dashtrue
3997     \fi
3998 \fi%
3999 %

```

However, if the `\Xtwolines` is set for the current series, we do not print the last line number.

```

4000 \ifl@d@dash%
4001     \ifboolexpr{togl{fulllines@} or test{\ifcempty{Xtwolines@}
4002         \currentseries}}}%
4003     {%
4004         \setistwofollowinglines{#1}{#2}{#4}{#5}%
4005         \ifboolexpr{%
4006             (%
4007                 togl {Xtwolinesbutnotmore@\currentseries}%
4008                 and not%
4009                 (%
4010                     bool {istwofollowinglines@}%
4011                     )%
4012             )%
4013         or%
4014         (%
4015             (not test{\ifnumequal{#1}{#4}})%
4016             and togl{Xtwolinesonlyinsamepage@\currentseries}%

```

```

4017         )%
4018     }%
4019     {}%
4020     {%
4021     \l@d@dashfalse%
4022     \l@d@Xtwolinestrue%
4023     \l@d@elinfalse%
4024     \l@d@eslfalse%
4025     \ifcseempty{Xmorethantwolines@ \@currentseries}%
4026     {%
4027     {ifistwofollowinglines@ \else%
4028     \l@d@Xmorethantwolinstrue%
4029     \fi%
4030     }%
4031     }%
4032 }%
4033 \fi%
4034 %

```

If the `\Xnoidenticallinenumannotation` is set for this series, we check if the ending annotation is identical to the starting. If true, we don't print the ending annotation

```

4035 \iftoggle{Xnoidenticallinenumannotation@ \@currentseries}{%
4036 \ifx\annot@start\annot@end%
4037 \let\@annot@end@print\relax%
4038 \ifx\linenumrep\@gobble%Don't print the dash if we're not printing
the line number
4039 \l@d@dashfalse%
4040 \fi%
4041 \fi%
4042 }{%
4043 %

```

Finally, we check for `\Xlinenumannotationonlyfirst` and `\Xlinenumannotationonlyfirstintwo`, and we redefine, if required, `\@annot@start@print` and `\annot@end@print`. We also store the current line number annotations.

```

4044 \iftoggle{Xlinenumannotationonlyfirst@ \@currentseries}{%
4045 \ifboolexpr{%
4046 (%
4047 togl{Xlinenumannotationonlyfirstintwo@ \@currentseries}%
4048 and test{\ifcsequal{annot@start}{prevannot@start@ \@currentseries}}%
4049 and test{\ifcsequal{annot@end}{prevannot@end@ \@currentseries}}%
4050 )%
4051 or%
4052 (%
4053 not togl{Xlinenumannotationonlyfirstintwo@ \@currentseries}%
4054 test{\ifcsequal{annot@start}{prevannot@start@ \@currentseries}}%
4055 )%
4056 }{%
4057 \def\@annot@start@print{%

```

```

4058 \l@wrapcs@ifnotemptybox{Xwraplinenumannotation@{@currentseries}{\
csuse{Xsymlinenumannotation@{@currentseries}}}%
4059 }%
4060 \let\@annot@end@print\relax%
4061 \ifx\linenumrep\@gobble%Don't print the dash if we're not printing
the line number
4062 \l@d@dashfalse%
4063 \fi%
4064 }{}%
4065 \global\cslet{prevannot@start@{@currentseries}}{\annot@start}%
4066 \global\cslet{prevannot@end@{@currentseries}}{\annot@end}%
4067 }%
4068 {}%
4069 %

End of \setprintlines.

4070 }%
4071 %

```

\setistwofollowinglines The `\ifistwofollowinglines` boolean, used by the `\Xtwolines` and related setting, is set to true by `\setistwofollowinglines`. This command takes the following arguments:

- #1 First page number.
- #2 First line number.
- #3 Last page number.
- #4 Last line number.

If $\#3 - \#2 = 1$, then that means the two lines are subsequent, and consequently `\ifistwofollowinglines` is set to true. However, if we use lineation by page, two given lines can be subsequent if:

- The first line number is equal to the last line number of the first page.
- The last line number is equal to 1.
- $\#3 - \#1$ is equal to 1.

```

4072 \newif\ifistwofollowinglines@%
4073 \newcommand{\setistwofollowinglines}[4]{%
4074 \ifcsdef{lastlinenumberon@#1}%
4075 {\numdef{\tmp}{\csuse{lastlinenumberon@#1}}}%
4076 {\numdef{\tmp}{0}}%
4077 \istwofollowinglines@false%
4078 \ifnumequal{#4-#2}{1}%
4079 {\istwofollowinglines@true}%
4080 {\ifbypage@%

```

```

4081 \ifnumequal{#3-#1}{1}%
4082 {%
4083 \ifnumequal{#2}{\tmp}%
4084 {\ifnumequal{#4}{1}{\istwofollowinglines@true}{}}%
4085 {}%
4086 }%
4087 {%
4088 \fi%
4089 }%
4090 }%
4091 %

```

`\printlines` So, we have decided which part of line number sets will be printed depending of these value. Now we are ready to print them. If the lineation is by pstart, we print the pstart. Arguments are 1) start page number 2) start line number 3) start subline number 4) end page number 5) end line number 6) end subline number 7) font specification 8) side flag

```

4092 \def\printlines#1|#2|#3|#4|#5|#6|#7|#8|{%
4093 \begingroup%
4094 %

```

Decide which part of line number components we will print.

```

4095 \setprintlines{#1}{#2}{#3}{#4}{#5}{#6}%
4096 %

```

One subtlety left here is when to print a period between numbers. But the only instance in which this is tricky is for the ending sub-line number: it could come after the starting sub-line number (in which case we want only the dash) or after an ending line number (in which case we need to insert a period). So, first, print the start line number.

```

4097 \ifdimequal{\csuse{Xboxstartlinenum@}\@currentseries}{0pt}%
4098 {\bgroup}%
4099 {\leavevmode\hbox to \csuse{Xboxstartlinenum@}\@currentseries}{\bgroup\
hfill}}%
4100 \ifcsstring{Xlinenumannotationposition@}\@currentseries}{before}%
4101 {\@annot@start@print}%
4102 {}%
4103 \ifl@d@pnum%
4104 \wrap@edcrossref{\@this@crossref@start}{#1}%
4105 \csuse{Xpagelinesep@}\@currentseries}%
4106 \fi%
4107 \wrap@edcrossref{\@this@crossref@start}{%
4108 \linenumrep{#2}%
4109 \iftoggle{Xlineflag@}\@currentseries}{#8}{}%
4110 }%
4111 \ifl@d@ssub%
4112 \csuse{Xsublinesep@}\@currentseries}%
4113 \wrap@edcrossref{\@this@crossref@start}{\sublinenumrep{#3}}%
4114 \fi
4115 \ifcsstring{Xlinenumannotationposition@}\@currentseries}{after}%

```

```

4116     {\@annot@start@print}%
4117     {}%
4118     \egroup%
4119 %

```

Then print the dash + end line number, or the range symbol.

```

4120     \ifdimequal{\csuse{Xboxendlinenum@\@currentseries}}{0pt}%
4121     {\bgroup}%
4122     {\hbox to \csuse{Xboxendlinenum@\@currentseries}\bgroup}%
4123     \ifl@d@Xtwolines%
4124     \ifl@d@Xmorethantwolines%
4125     \csuse{Xmorethantwolines@\@currentseries}%
4126     \else%
4127     \csuse{Xtwolines@\@currentseries}%
4128     \fi%
4129     \else%
4130     \ifl@d@dash%
4131     \ifdefined\linrangesep%
4132     \linrangesep%
4133     \else%
4134     \csuse{Xlinrangeseparator@\@currentseries}%
4135     \fi%
4136     \fi%
4137     \ifcsstring{Xlinenumannotationposition@\@currentseries}{before}%
4138     {\@annot@end@print}%
4139     {}%
4140     \ifl@d@pnum%
4141     \wrap@edcrossref{\@this@crossref@end}{#4}%
4142     \csuse{Xpagelinesep@\@currentseries}%
4143     \fi%
4144     \ifl@d@elin%
4145     \wrap@edcrossref{\@this@crossref@end}{%
4146     \linenumrep{#5}%
4147     \iftoggle{Xlineflag@\@currentseries}{#8}{}%
4148     }%
4149     \fi%
4150     \ifl@d@esl%
4151     \ifl@d@elin%
4152     \csuse{Xsublinesep@\@currentseries}%
4153     \fi%
4154     \wrap@edcrossref{\@this@crossref@end}{\sublinenumrep{#6}}%
4155     \fi%
4156     \ifcsstring{Xlinenumannotationposition@\@currentseries}{after}%
4157     {\@annot@end@print}%
4158     {}%
4159     \fi%
4160     \ifdimequal{\csuse{Xboxendlinenum@\@currentseries}}{0pt}%
4161     {}%
4162     {\hfill}%Prevent underfull hbox
4163     \egroup%

```

```

4164 \endgroup%
4165 }%
4166 %

```

XIII.9.5 Footnote grouped by line

`\prepare@Xgroupbyline` `\prepare@Xgroupbyline` is a macro called on the `\metaXXXvfootnote` if `\Xgroupbyline` is set to true, instead of calling `\insert` directly. #1 The series
#2 The content of the footnote, which is also the line number indication
#3 This macro, which prepares the contents of the insertion

```

4167 \newcommand{\prepare@Xgroupbyline}[3]{%
4168   \iftoggle{Xgroupbylineseparatetwelines@#1}{%
4169     \l@dparsfootspec#2%
4170     \ifcsdef{#1@forinserting@l@dparsedendpage-l@dparsedendline-l@dparsedendsub}{%
4171       {%
4172         \csgappto{#1@forinserting@l@dparsedendpage-l@dparsedendline-l@dparsedendsub}{%
4173           \hskip\csuse{Xafternote@#1}\relax%
4174         }%
4175       }%
4176     }%
4177     \add@hooktoggle@specific@to@cs{#1@forinserting@l@dparsedendpage-l@dparsedendline-l@dparsedendsub}%
4178     \add@hookarg@specific@to@cs{#1@forinserting@l@dparsedendpage-l@dparsedendline-l@dparsedendsub}%
4179     \csxappto%
4180       {#1@forinserting@l@dparsedendpage-l@dparsedendline-l@dparsedendsub}%
4181     {%
4182       \keep@this@crossref@forinserting%
4183       \unexpanded{%
4184         \ifcseempty{Xsymlinenum@#1}%
4185           {\csuse{Xparafootsep@#1}}%
4186         }%
4187         #3{#1}{#2}%
4188       }%
4189     }%
4190     \listcsxadd{#1@forinserting}{l@dparsedendpage-l@dparsedendline-l@dparsedendsub}%
4191   }{%
4192     \ifcsdef{#1@forinserting@all}{%
4193       \csgappto%
4194         {#1@forinserting@all}%
4195         {\hskip\csuse{Xafternote@#1}\relax}%
4196       }{}%
4197     \add@hooktoggle@specific@to@cs{#1@forinserting@all}%

```

```

4198 \add@hookarg@specific@to@cs{#1@forinserting@all}%
4199 \csxappto%
4200   {#1@forinserting@all}%
4201   {%
4202     \keep@this@crossref@forinserting%
4203     \unexpanded{%
4204       \ifcsemtty{Xsymlinenum@#1}%
4205         {\csuse{Xparafootsep@#1}}%
4206         {}%
4207       #3{#1}{#2}%
4208     }%
4209   }%
4210 }%
4211 \listcs gadd{#1@forinserting}{all}%
4212 }%
4213 %

```

`\keep@this@crossref@forinserting` `\keep@this@crossref@forinserting` is called by `\prepare@Xgroupbyline`. It just ensures that `\@this@crossref@start` and `\this@crossref@end` value are kept in memory.

```

4214 \newcommand{\keep@this@crossref@forinserting}{%
4215   \unexpanded{\gdef\@this@crossref@start}{\@this@crossref@start}%
4216   \unexpanded{\gdef\@this@crossref@end}{\@this@crossref@end}%
4217 }%
4218 %

```

XIV Familiar footnotes

XIV.1 Adjacent footnotes

The original edmac provided users with five series of critical footnotes (`\Afootnote` `\Bfootnote` `\Cfootnote` `\Dfootnote` `\Efootnote`), and \TeX provides a single numbered footnote. The `reledmac` package uses the edmac mechanism to provide six series of numbered footnotes.

First, though, the `footmisc` package has an option whereby two or more consecutive `\footnotes` have their marks separated by commas. This seemed to Peter Wilson such a useful ability that it was provided automatically by `eledmac`.

Maïeul Rouquette has maintained this feature in `reledmac`, despite he thought that is not directly in relationship with the aim of `reledmac`.

`\multiplefootnotemarker` `\multiplefootnotemarker` These macros may have been defined by the `memoir` class, are provided by the `footmisc` package and perhaps by other footnote packages. That is why we use `\providecommand` and not `\newcommand`.

```

4219 \providecommand*{\multiplefootnotemarker}{3sp}
4220 \providecommand*{\multfootsep}{\textsuperscript{\normalfont,}}
4221
4222 %

```

`\m@mmf@prepare` A pair of self-cancelling kerns. This may have been defined in the memoir class.

```
4223 \providecommand*\m@mmf@prepare{%
4224   \kern-\multiplefootnotemarker
4225   \kern\multiplefootnotemarker\relax}
4226 %
```

`\m@mmf@check` This may have been defined in the memoir class. If it recognises the last kern as `\multiplefootnotemarker` it typesets `\multfootsep`.

```
4227 \providecommand*\m@mmf@check{%
4228   \ifdim\lastkern=\multiplefootnotemarker\relax
4229     \edef\x@sf{\the\spacefactor}%
4230     \unkern
4231     \multfootsep
4232     \spacefactor\x@sf\relax
4233   \fi}
4234
4235 %
```

We have to modify `\@footnotetext` and `\@footnotemark`. However, if memoir is used the modifications have already been made.

```
4236 \@ifclassloaded{memoir}{%
4237 %
```

`\@footnotetext` Add `\m@mmf@prepare` at the end of `\@footnotetext`.

```
4238 \apptocmd{\@footnotetext}{\m@mmf@prepare}{}{}
4239 %
```

`\@footnotemark` Modify `\@footnotemark` to cater for adjacent `\footnotes`.

```
4240
4241 \patchcmd{\@footnotemark}
4242   {\nobreak}
4243   {\m@mmf@check
4244    \nobreak
4245   }
4246   {}{}
4247 \patchcmd{\@footnotemark}
4248   {\@makefnmark}
4249   {\@makefnmark
4250    \m@mmf@prepare
4251   }
4252   {}{}
4253 %
```

Finished the modifications for the non-memoir case.

```

4254 }
4255
4256 %

```

XIV.2 Regular footnotes for numbered texts

`\l@doldold@footnotetext` In order to enable the regular `\footnotes` in numbered text we have to play around
`\@footnotetext` with its `\@footnotetext`, using different forms for when in numbered or regular text.

```

4257 \pretocmd{\@footnotetext}{%
4258   \ifnumberedpar@
4259   \edtext{}{\l@dbfnote{#1}}}%
4260 \else
4261 }{}{}
4262 \apptocmd{\@footnotetext}{\fi}{}{}%
4263 %

```

`\l@dbfnote` `\l@dbfnote` adds the footnote to the insert list, and `\vl@dbfnote` calls the original
`\vl@dbfnote` `\@footnotetext`. We also patch `\footnote` in order to get the correct footnote
`\vl@dbfnote` numbers when typesetting parallel texts. This is moved into a `\get@fnmark` command.
`\footnote`
`\get@fnmark`
`\get@thisfootnote`

```

4264
4265 \patchcmd%
4266   {\footnote}%
4267   {\stepcounter\@mpfn}%
4268   {%
4269   \ifboolexpr{bool{l@dpairing} or bool{l@dprintingpages} or bool{
l@dprintingcolumns}}{%
4270     \global\advance\footnote@reading by \@ne%
4271     \get@thisfootnote%
4272     \get@fnmark{\thisc@footnote}%
4273     \ifcsdef{footnotereading\the\footnote@reading=typeset}%
4274       {\setcounter{\@mpfn}{\csuse{footnotereading\the\footnote@reading=
typeset}}}%
4275       {\setcounter{\@mpfn}{\footnote@reading}}%
4276     }{%
4277     \stepcounter\@mpfn%
4278     }%
4279   }%
4280   {}
4281   {}
4282
4283 \newcommand{\get@thisfootnote}{%
4284   \ifboolexpr{bool{l@dpairing} or bool{l@dprintingpages} or bool{
l@dprintingcolumns}}{%
4285     \protected@xdef\thisc@footnote{\the\footnote@reading}%
4286     }{%

```

```

4287 \protected@xdef\thisc@footnote{\the\c@footnote}%
4288 }%
4289 }%
4290
4291 \newcommand{\l@dbfnote}[1]{%
4292 \get@thisfootnote%
4293 \gdef\@tag{#1\relax}%
4294 \ifledRcol%
4295 \xright@appenditem{%
4296 \ifdefined\Hy@footnote@currentHref%
4297 \noexpand\def\noexpand\Hy@footnote@currentHref{\
Hy@footnote@currentHref}%
4298 \fi%
4299 \noexpand\vl@dbfnote{\expandonce\@tag}\thisc@footnote}%
4300 }%
4301 \to\inserts@listR
4302 \global\advance\insert@countR \@ne%
4303 \else%
4304 \xright@appenditem{%
4305 \ifdefined\Hy@footnote@currentHref%
4306 \noexpand\def\noexpand\Hy@footnote@currentHref{\
Hy@footnote@currentHref}%
4307 \fi%
4308 \noexpand\vl@dbfnote{\expandonce\@tag}\thisc@footnote}%
4309 }%
4310 \to\inserts@list
4311 \global\advance\insert@count \@ne%
4312 \fi
4313 \ignorespaces%
4314 }%
4315
4316 \newcommand{\get@fnmark}[1]{%
4317 \ifboolexpr{bool{l@dpairing} or bool{l@dprintingpages} or bool{
l@dprintingcolumns}}%
4318 {%
4319 \stepcounter{footnote@typeset}%
4320 \setcounter{footnote}{\c@footnote@typeset}%
4321 \immediate\write\@mainaux{%
4322 \csgdef{footnotereading#1=typeset}{\the\c@footnote@typeset}%
4323 }%
4324 \def\@thefnmark{\thefootnote}%
4325 }%
4326 {%
4327 \setcounter{footnote}{#1}%
4328 \def\@thefnmark{\thefootnote}%
4329 }%
4330 }%
4331
4332 \newcommand{\vl@dbfnote}[2]{%
4333 \get@fnmark{#2}%

```

```

4334 \footnotetext{#1}%
4335 }%
4336 %

```

XIV.3 Footnote formats

Some of the code for the various formats is remarkably similar to that in section ??.

The following macros generally set things up for the ‘standard’ footnote format.

`\prebodyfootmark` Two convenience macros for use by `\...@footnotemark...` macros.
`\postbodyfootmark`

```

4337 \newcommand*\prebodyfootmark{%
4338   \leavevmode
4339   \ifhmode
4340     \edef\x@sf{\the\spacefactor}%
4341     \m@mmf@check
4342     \nobreak
4343     \fi}
4344 \newcommand*\postbodyfootmark{%
4345   \m@mmf@prepare
4346   \ifhmode\spacefactor\x@sf\fi\relax}
4347
4348 %

```

XIV.4 Footnote arrangement

XIV.4.1 User level macro

`\arrangementX` `\arrangementX[⟨s⟩]{⟨arrangement⟩}` command calls, for each series, a specific command which set many counters and commands in order to define specific arrangement.

```

4349 \newcommandx*\arrangementX[2][1,usedefault]{%
4350   \def\do##1{%
4351     \csname arrangementX@#2\endcsname{##1}%
4352   }%
4353   \ifstrempy{#1}%
4354     {%
4355       \dolistloop{\@series}%
4356     }%
4357     {
4358       \docsvlist{#1}%
4359     }%
4360 }%
4361 %

```

XIV.4.2 Normal footnotes

`\normal@footnotemarkX` `\normal@footnotemarkX{⟨series⟩}` sets up the typesetting of the marker at the point where the footnote is called for.

```

4362 \newcommand*{\normal@footnotemarkX}[1]{%
4363   \prebodyfootmark
4364   \wrapped@bodyfootmarkX{#1}%
4365   \postbodyfootmark}
4366
4367 %

```

`\normalbodyfootmarkX` The `\normalbodyfootmarkX{<series>}` really typesets the in-text marker. The style is the normal superscript.

```

4368 \newcommand*{\normalbodyfootmarkX}[1]{%
4369   \hbox{\textsuperscript{\normalfont\@nameuse{@thefnmark#1}}}%
4370 %

```

`\normalvfootnoteX` `\normalvfootnoteX{<series>}{<text>}` does the `\insert` for the `<series>` and calls the series' `\footfmt...` to format the `<text>`.

```

4371 \notbool{parapparatus@}{\newcommand*{\normalvfootnoteX}[2]{%
4372   \beforeinsertionX{#1}%
4373   \insert\@nameuse{footins#1}\bgroup
4374     \fontseries{seriesdefault}%
4375     \fontshape{shapedefault}%
4376     \hsize=\expandafter\dimexpr\csuse{widthX@#1}\relax%
4377     \noindent\csuse{bhooknoteX@#1}%
4378     \csuse{notefontsizeX@#1}%
4379     \footplitskips
4380     \ifl@dpairing\ifl@dpaging\else%
4381       \setnoteswidthliketwocolumnsX@{#1}%
4382     \fi\fi%
4383     \setnotesXpositionliketwocolumns@{#1}%
4384     \spaceskip=\z@skip \xspaceskip=\z@skip
4385     \csuse{\csuse{footnote@dir}}\@nameuse{footfmt#1}{#1}{#2}\egroup}
4386
4387 %

```

`\mpnormalvfootnoteX` The minipage version.

```

4388 \newcommand*{\mpnormalvfootnoteX}[3]{%
4389   \get@thisfootnoteX{#1}%
4390   \get@fnmarkX{#1}{\thisc@footnote}{#3}%
4391   \ifstrempy{#3}{%
4392     \edef\this@footnoteX@reading{\the\csname footnote#1@reading\endcsname}%
4393   }{%
4394     \edef\this@footnoteX@reading{###3}%
4395   }%
4396   \global\setbox\@nameuse{mpfootins#1}\vbox{%
4397     \unvbox\@nameuse{mpfootins#1}
4398     \noindent\csuse{bhooknoteX@#1}%
4399     \csuse{notefontsizeX@#1}%
4400     \hsize\columnwidth

```

```

4401 \parboxrestore
4402 \color@begingroup
4403 \@nameuse{footfmt#1}{#1}{#2}\color@endgroup}}
4404
4405 %

```

`\normalfootfmtX` `\normalfootfmtX{<series>}{<text>}` typesets the footnote text, prepended by the marker.

```

4406 \notbool{parapparatus@}{\newcommand*}{\newcommand}{\normalfootfmtX}[2]{%
4407 \ifluatex%
4408 \texdir\footnote@luatextextdir%
4409 \pardir\footnote@luatexpardir%
4410 \fi%
4411 \protected@edef\@currentlabel{%
4412 \@nameuse{@thefnmark#1}%
4413 }%
4414 \ledsetnormalparstuffX{#1}%
4415 \sethangindentX{#1}%
4416 \rule\z@\splittopskip%
4417 {\csuse{notenumfontX@#1}\wrapped@footfootmarkX{#1}}%
4418 \csuse{wrapcontentX@#1}{#2}%
4419 \strut\par}}
4420
4421 %

```

`\normalfootfootmarkX` `\normalfootfootmarkX{<series>}` is called by `\normalfootfmtX` to typeset the footnote marker in the footer before the footnote text.

```

4422 \newcommand*{\normalfootfootmarkX}[1]{%
4423 \textsuperscript{\@nameuse{@thefnmark#1}}}
4424
4425 %

```

`\normalfootstartX` `\normalfootstartX{<series>}` is the `<series>` footnote starting macro used in the output routine.

```

4426 \newcommand*{\normalfootstartX}[1]{%
4427 \ifdimequal{Opt}{\prenotesX@}{}%
4428 {%
4429 \iftoggle{prenotesX@}{%
4430 \togglefalse{prenotesX@}%
4431 \skip\csname footins#1\endcsname=%
4432 \glueexpr\csuse{prenotesX@}+\csuse{afterruleX@#1}\relax%
4433 }%
4434 }%
4435 }%
4436 \vskip\skip\csname footins#1\endcsname%
4437 \leftskip=\z@
4438 \rightskip=\z@
4439 \ifl@dpairing\else%

```

```

4440 \hspace=\old@hspace%
4441 \fi%
4442 \setnoteswidthliketwocolumnsX@{#1}%
4443 \setnotesXpositionliketwocolumns@{#1}%
4444 \print@footnoteXrule{#1}%
4445 }%
4446
4447 %

```

\normalfootnoteruleX The rule drawn before the footnote series group.

```

4448 \let\normalfootnoteruleX=\footnoterule
4449
4450 %

```

\normalfootgroupX `\normalfootgroupX{<series>}` sends the contents of the `<series>` insert box to the output page without alteration.

```

4451 \newcommand*\normalfootgroupX}[1]{%
4452 \csuse{bhookgroupX@#1}%
4453 \unvbox\@nameuse{footins#1}%
4454 \hspace=\old@hspace%
4455 }%
4456
4457 %

```

\mpnormalfootgroupX The minipage version.

```

4458 \newcommand*\mpnormalfootgroupX}[1]{%
4459 \vskip\skip\@nameuse{mpfootins#1}
4460 \ifl@dpairing\ifparledgroup%
4461 \leavevmode\marks\parledgroup@{begin}%
4462 \marks\parledgroup@series{#1}%
4463 \marks\parledgroup@type{footnoteX}%
4464 \fi\fi\normalcolor
4465 \ifparledgroup%
4466 \ifl@dpairing%
4467 \else%
4468 \setnoteswidthliketwocolumnsX@{#1}%
4469 \setnotesXpositionliketwocolumns@{#1}%
4470 \print@footnoteXrule{#1}%
4471 \fi%
4472 \else%
4473 \setnoteswidthliketwocolumnsX@{#1}%
4474 \setnotesXpositionliketwocolumns@{#1}%
4475 \print@footnoteXrule{#1}%
4476 \fi%
4477 \csuse{bhookgroupX@#1}%
4478 \unvbox\@nameuse{mpfootins#1}}
4479
4480 %

```

`\normalbfnoteX` #1 = footnote series, #2 = footnote content, #3 manual footnote number

```

4481
4482 \newcommand{\normalbfnoteX}[3]{%
4483   \get@thisfootnoteX{#1}%
4484   \ifledRcol%
4485     \ifluatex
4486       \footnotelang@lua[R]%
4487     \fi
4488     \@ifundefined{xpg@main@language}%if polyglossia
4489     {}%
4490     {\footnotelang@poly[R]}%
4491   \xright@appenditem{%
4492     \noexpand\led@set@index@fornote{#1}%
4493     \noexpand\prepare@edindex@fornote{\led@nums}%
4494     \unexpanded{\def\this@footnoteX@reading}{\the\csname footnote#1
@reading\endcsname}%
4495     \noexpand\vbfnoteX{#1}{#2}{\thisc@footnote}{#3}%
4496     \noexpand\led@reinit@index@fornote%
4497     \unexpanded{\advance\@edindex@fornote@m@ne}%
4498   }%
4499           \to\inserts@listR
4500   \global\advance\insert@countR \@ne%
4501 \else%
4502   \ifluatex
4503     \footnotelang@lua%
4504   \fi
4505   \@ifundefined{xpg@main@language}%if polyglossia
4506   {}%
4507   {\footnotelang@poly}%
4508   \xright@appenditem{%
4509     \noexpand\led@set@index@fornote{#1}%
4510     \noexpand\prepare@edindex@fornote{\led@nums}%
4511     \unexpanded{\def\this@footnoteX@reading}{\the\csname footnote#1
@reading\endcsname}%
4512     \noexpand\vbfnoteX{#1}{#2}{\thisc@footnote}{#3}%
4513     \noexpand\led@reinit@index@fornote%
4514     \unexpanded{\advance\@edindex@fornote@m@ne}%
4515   }%
4516           \to\inserts@list
4517   \global\advance\insert@count \@ne%
4518 \fi
4519 \ignorespaces}
4520
4521 %

```

`\get@thisfootnoteX` The macro `\get@thisfootnote` command just saves the footnote number in the `\thisfootnote` macro, depending on the use of pairing environments.

```

4522 \newcommand{\get@thisfootnoteX}[1]{%

```

```

4523 \ifboolexpr{bool{l@dpairing} or bool{l@dprintingpages} or bool{
l@dprintingcolumns}}{%
4524 \protected@xdef\thisc@footnote{\the\csname footnote#1@reading\
endcsname}%
4525 }{%
4526 \protected@xdef\thisc@footnote{\the\csname c@footnote#1\endcsname}%
4527 }%
4528 }%
4529 %

```

\vbfnoteX This command calls the correct footnote-inserting commands. #1 footnote series, #2 footnote content, #3 footnote counter, #4 manual footnote mark

```

4530 \newcommand{\vbfnoteX}[4]{%
4531 \get@fnmarkX{#1}{#3}{#4}\relax%
4532 \@nameuse{regvfootnote#1}{#1}{#2}%
4533 }%
4534 %

```

\get@fnmarkX This command gets the correct footnote number when typesetting parallel texts. #1 footnote series, #2 footnote counter, #3 manual footnote number

```

4535 \newcommand{\get@fnmarkX}[3]{%
4536 \ifstrempy{#3}{%
4537 \ifboolexpr{bool{l@dpairing} or bool{l@dprintingpages} or bool{
l@dprintingcolumns}}{%
4538 {%
4539 \stepcounter{footnote#1@typeset}%
4540 \setcounter{footnote#1}{\value{footnote#1@typeset}}%
4541 \@namedef{@thefnmark#1}{\csuse{thefootnote#1}}%
4542 \immediate\write\@mainaux{%
4543 \csgdef{footnote#1@reading#2=typeset}{\the\csname c@footnote#1
@typeset\endcsname}%
4544 }%
4545 }%
4546 {%
4547 \setcounter{footnote#1}{#2}%
4548 \@namedef{@thefnmark#1}{\csuse{thefootnote#1}}%
4549 }%
4550 }%
4551 {%
4552 \csdef{@thefnmark#1}{#3}%
4553 }%
4554 }%
4555 %
4556 %

```

\vnumfootnoteX #1 footnote series, #2 footnote content, #3 manual footnote mark

```

4557 \newcommand{\vnumfootnoteX}[3]{%
4558   \ifnumberedpar@
4559     \edtext{}{\normalbfnoteX{#1}{#2}{#3}}%
4560   \else
4561     \def\this@footnoteX@reading{\the\csname footnote#1@reading\endcsname}%
4562     \get@thisfootnoteX{#1}%
4563     \get@fnmarkX{#1}{\expandonce\thisc@footnote}{#3}%
4564     \@nameuse{regvfootnote#1}{#1}{#2}%
4565   \fi}
4566
4567 %

```

`arrangementX@normal` `\arrangementX@normal{<series>}` initialises the settings for the `<series>` footnotes. This should always be called for each series.

```

4568 \newcommand*{\arrangementX@normal}[1]{%
4569   \csgdef{series@displayX#1}{normal}
4570   \expandafter\let\csname footstart#1\endcsname=\normalfootstartX
4571   \@namedef{@footnotemark#1}{\normal@footnotemarkX{#1}}
4572   \@namedef{bodyfootmark#1}{\normalbodyfootmarkX{#1}}
4573   \expandafter\let\csname regvfootnote#1\endcsname=\normalvfootnoteX
4574   \expandafter\let\csname vfootnote#1\endcsname=\vnumfootnoteX
4575   \expandafter\let\csname footfmt#1\endcsname=\normalfootfmtX
4576   \@namedef{footfootmark#1}{\normalfootfootmarkX{#1}}
4577   \expandafter\let\csname footgroup#1\endcsname=\normalfootgroupX
4578   \expandafter\let\csname footnoterule#1\endcsname=\normalfootnoteruleX
4579   \count\csname footins#1\endcsname=1000
4580   \csxdef{default@footins#1}{1000}%Use to have note only for one side
4581   \dimen\csname footins#1\endcsname=\csuse{maxhnotesX@#1}
4582   \skip\csname footins#1\endcsname=\csuse{beforenotesX@#1}%
4583   \advance\skip\csname footins#1\endcsname by\csuse{afterruleX@#1}%
4584   %

```

Additions for minipages.

```

4585   \ifnoledgroup@else%
4586     \expandafter\let\csname mpvfootnote#1\endcsname=\mpnormalvfootnoteX
4587     \expandafter\let\csname mpfootgroup#1\endcsname=\mpnormalfootgroupX
4588     \count\csname mpfootins#1\endcsname=1000
4589     \dimen\csname mpfootins#1\endcsname=\csuse{maxhnotesX@#1}
4590     \skip\csname mpfootins#1\endcsname=\csuse{beforenotesX@#1}%
4591     \advance\skip\csname mpfootins#1\endcsname by\csuse{afterruleX@#1}%
4592   \fi
4593 }
4594
4595 %

```

XIV.4.3 Two columns footnotes

The following macros set footnotes in two columns. It is assumed that the length of each footnote is less than the column width.

```

\arrangementX@twocol  \newcommand*{\arrangementX@twocol}[1]{%
4597   \csgdef{series@displayX#1}{twocol}
4598   \expandafter\let\csname regvfootnote#1\endcsname=\twocolvfootnoteX
4599   \expandafter\let\csname footfmt#1\endcsname=\twocolfootfmtX
4600   \expandafter\let\csname footgroup#1\endcsname=\twocolfootgroupX
4601   \dimen\csname footins#1\endcsname=\csuse{maxhnotesX@#1}%
4602   \skip\csname footins#1\endcsname=\csuse{beforenotesX@#1}%
4603   \advance\skip\csname footins#1\endcsname by \csuse{afterruleX@#1}\relax%
4604   \twocolfootsetupX{#1}
4605   \ifnoledgroup@ \else%
4606     \expandafter\let\csname mpvfootnote#1\endcsname=\mpnormalvfootnoteX
4607     \expandafter\let\csname mpfootgroup#1\endcsname=\mptwocolfootgroupX
4608     \skip\csname mpfootins#1\endcsname=\csuse{beforenotesX@#1}%
4609     \advance\skip\csname mpfootins#1\endcsname by \csuse{afterruleX@#1}
4610     \mptwocolfootsetupX{#1}
4611   \fi%
4612 }
4613
4614 %

```

```

\twocolfootsetupX  \twocolfootsetupX{\series}
\mptwocolfootsetupX
4615 \newcommand*{\twocolfootsetupX}[1]{%
4616   \count\csname footins#1\endcsname 500
4617   \csxdef{default@footins#1}{500}%Use this to confine the notes to one
side only
4618   \multiply\dimen\csname footins#1\endcsname by \tw@}
4619 \newcommand*{\mptwocolfootsetupX}[1]{%
4620   \count\csname mpfootins#1\endcsname 500
4621   \multiply\dimen\csname mpfootins#1\endcsname by \tw@}
4622
4623 %

```

```

\twocolvfootnoteX  \twocolvfootnoteX{\series}
4624 \notbool{parapparatus@}{\newcommand*}{\newcommand}{\twocolvfootnoteX}[2]{%
4625   \beforeinsertion@X{#1}%
4626   \let\bidir@RTL@everypar\relax%
4627   \insert\csname footins#1\endcsname\bgroup%
4628     \hsize=\expandafter\dimexpr\csuse{widthX@#1}\relax%
4629     \noindent\csuse{bhooknoteX@#1}%
4630     \csuse{notefontsizeX@#1}%
4631     \footssplitsskips%
4632     \spaceskip=\z@skip \xspaceskip=\z@skip%
4633     \@nameuse{footfmt#1}{#1}{#2}\egroup}
4634
4635 %

```

```

\twocolfootfmtX  \twocolfootfmtX{\series}

```

```

4636 \notbool{parapparatus@}{\newcommand*}{\newcommand}{\twocolfootfmtX}[2]{%
4637   \protected@edef\@currentlabel{%
4638     \@nameuse{@thefnmark#1}%
4639   }%
4640   \normal@pars%
4641   \sethangindentX{#1}%
4642   \hsize \csuse{hsize#wocolX@#1}%
4643   \setparindentX{#1}%
4644   \tolerance=5000\relax%
4645   \par%
4646   \@tempdima=\parindent%
4647   \csuse{colalignX@#1}%
4648   \parindent=\@tempdima%
4649   {\hspace{\parindent}%
4650    \csuse{notenunfontX@#1}\wrapped@footfootmarkX{#1}\strut%
4651    \csuse{wrapcontentX@#1}{#2}%
4652    \strut\par}%
4653   \allowbreak%
4654 }%
4655 %
4656 %

```

```

\twocolfootgroupX \twocolfootgroupX{<series>}
\mptwocolfootgroupX
4657 \newcommand*{\twocolfootgroupX}[1]{\csuse{bhookgroupX@#1}\csuse{
notefontsizeX@#1}
4658 \splittopskip=\ht\strutbox
4659 \expandafter
4660 \rigidbalanceX\csname footins#1\endcsname \tw@ \splittopskip}}
4661
4662 \newcommand*{\mptwocolfootgroupX}[1]{\%
4663   \vskip\skip\@nameuse{mpfootins#1}
4664   \ifl@dpairing\ifparledgroup%
4665     \leavevmode\marks\parledgroup@{begin}%
4666     \marks\parledgroup@series{#1}%
4667     \marks\parledgroup@type{footnoteX}%
4668     \fi\fi\normalcolor
4669     \ifparledgroup%
4670       \ifl@dpairing%
4671       \else%
4672         \setnoteswidthliketwocolumnsX@{#1}%
4673         \setnotesXpositionliketwocolumns@{#1}%
4674         \print@footnoteXrule{#1}%
4675       \fi%
4676     \else%
4677       \setnoteswidthliketwocolumnsX@{#1}%
4678       \setnotesXpositionliketwocolumns@{#1}%
4679       \print@footnoteXrule{#1}%
4680     \fi%
4681     \csuse{bhookgroupX@#1}%

```

```

4682 \splittopskip=\ht\strutbox
4683 \expandafter
4684 \rigidbalanceX\csname mpfootins#1\endcsname \tw@ \splittopskip}}
4685
4686 %

```

XIV.4.4 Three columns footnotes

The following macros set footnotes in three columns. It is assumed that the length of each footnote is less than the column width.

```

\arrangementX@threecolX  \newcommand*\arrangementX@threecol}[1]{%
4687
4688 \csgdef{series@displayX#1}{threecol}
4689 \expandafter\let\csname regvfootnote#1\endcsname=\threecolvfootnoteX
4690 \expandafter\let\csname footfmt#1\endcsname=\threecolfootfmtX
4691 \expandafter\let\csname footgroup#1\endcsname=\threecolfootgroupX
4692 \dimen\csname footins#1\endcsname=\csuse{maxhnotesX@#1}%
4693 \skip\csname footins#1\endcsname=\csuse{beforenotesX@#1}%
4694 \advance\skip\csname footins#1\endcsname by \csuse{afterruleX@#1}\relax%
4695 \threecolfootsetupX{#1}
4696 \ifnoledgroup@ \else%
4697 \expandafter\let\csname mpvfootnote#1\endcsname=\mpnormalvfootnoteX
4698 \expandafter\let\csname mpfootgroup#1\endcsname=\mpthreecolfootgroupX
4699 \skip\csname mpfootins#1\endcsname=\csuse{beforenotesX@#1}%
4700 \advance\skip\csname mpfootins#1\endcsname by \csuse{afterruleX@#1}
4701 \mpthreecolfootsetupX{#1}
4702 \fi%
4703 }
4704
4705 %

```

```

\threecolfootsetupX \threecolfootsetupX{<series>}
\mpthreecolfootsetupX
4706 \newcommand*\threecolfootsetupX}[1]{%
4707 \count\csname footins#1\endcsname 333
4708 \csxdef{default@footins#1}{333}%Use this to confine the notes to one
side only
4709 \multiply\dimen\csname footins#1\endcsname by \thr@@}
4710 \newcommand*\mpthreecolfootsetupX}[1]{%
4711 \count\csname mpfootins#1\endcsname 333
4712 \multiply\dimen\csname mpfootins#1\endcsname by \thr@@}
4713
4714 %

```

```

\threecolvfootnoteX \threecolvfootnoteX{<series>}{<text>}
4715 \notbool{parapparatus@}{\newcommand*}{\newcommand}{\threecolvfootnoteX}[2]{
%
4716 \let\bidir@RTL@everypar\relax%

```

```

4717 \beforeinsertionX{#1}%
4718 \insert\csname footins#1\endcsname\bgroup%
4719   \hsize=\expandafter\dimexpr\csuse{widthX@#1}\relax%
4720   \noindent\csuse{bhooknoteX@#1}%
4721   \csuse{notefontsizeX@#1}%
4722   \footsplitskips%
4723   \@nameuse{footfmt#1}{#1}{#2}\egroup}
4724
4725 %

```

`\threecolfootfmtX` `\threecolfootfmtX{<series>}`

```

4726 \notbool{parapparatus@}{\newcommand*}{\newcommand}{\threecolfootfmtX}[2]{%
4727   \protected@edef\@currentlabel{%
4728     \@nameuse{@thefnmark#1}%
4729   }%
4730   \sethangindentX{#1}%
4731   \normal@pars%
4732   \hsize \csuse{hsizethreecolX@#1}%
4733   \setparindentX{#1}%
4734   \tolerance=5000\relax%
4735   \@tempdima=\parindent%
4736   \csuse{colalignX@#1}%
4737   \parindent=\@tempdima%
4738   {\hspace{\parindent}%
4739     \csuse{notenumberX@#1}\wrapped@footfootmarkX{#1}\strut%
4740     \csuse{wrapcontentX@#1}{#2}%
4741     \strut\par}\allowbreak}
4742
4743 %

```

`\threecolfootgroupX` `\threecolfootgroupX{<series>}`
`\mpthreecolfootgroupX`

```

4744 \newcommand*{\threecolfootgroupX}[1]{\csuse{bhookgroupX@#1}\csuse{
notefontsizeX@#1}
4745   \splittopskip=\ht\strutbox
4746   \expandafter
4747   \rigidbalanceX\csname footins#1\endcsname \thr@@ \splittopskip}}
4748
4749 \newcommand*{\mpthreecolfootgroupX}[1]{%
4750   \vskip\skip\@nameuse{mpfootins#1}
4751   \ifl@dpairing\ifparledgroup
4752     \leavevmode\marks\parledgroup@{begin}%
4753     \marks\parledgroup@series{#1}%
4754     \marks\parledgroup@type{footnoteX}%
4755   \fi\fi\normalcolor
4756   \ifparledgroup%
4757     \ifl@dpairing%
4758     \else%
4759       \setnoteswidthliketwocolumnsX@{#1}%

```

```

4760 \setnotesXpositionliketwocolumns@{#1}%
4761 \print@footnoteXrule{#1}%
4762 \fi%
4763 \else%
4764 \setnoteswidthliketwocolumnsX@{#1}%
4765 \setnotesXpositionliketwocolumns@{#1}%
4766 \print@footnoteXrule{#1}%
4767 \fi%
4768 \csuse{bhookgroupX@#1}%
4769 \splittopskip=\ht\strutbox
4770 \expandafter
4771 \rigidbalanceX\csname mpfootins#1\endcsname \thr@@ \splittopskip}}
4772 %
4773 %

```

XIV.4.5 Paraphed footnotes

The following macros set footnotes as one paragraph.

`\arrangementX@paragraph` `\footparagraphX{<series>}`

```

4774 \newcommand*{\arrangementX@paragraph}[1]{%
4775 \csgdef{series@displayX#1}{paragraph}%
4776 \expandafter\let\csname footstart#1\endcsname=\parafootstartX
4777 \expandafter\let\csname regvfootnote#1\endcsname=\para@vfootnoteX
4778 \expandafter\let\csname footfmt#1\endcsname=\parafootfmtX
4779 \expandafter\let\csname footgroup#1\endcsname=\para@footgroupX
4780 \expandafter\let\csname footnoterule#1\endcsname=\normalfootnoteruleX
4781 \count\csname footins#1\endcsname=1000
4782 \csxdef{default@footins#1}{1000}%Use this to confine the notes to one
side only
4783 \dimen\csname footins#1\endcsname=\csuse{maxhnotesX@#1}
4784 \skip\csname footins#1\endcsname=\csuse{beforenotesX@#1}%
4785 \advance\skip\csname footins#1\endcsname by\csuse{afterruleX@#1}%
4786 \para@footsetupX{#1}
4787 \ifnoledgroup@else
4788 \expandafter\let\csname mpvfootnote#1\endcsname=\mppara@vfootnoteX
4789 \expandafter\let\csname mpfootgroup#1\endcsname=\mppara@footgroupX
4790 \count\csname mpfootins#1\endcsname=1000
4791 \dimen\csname mpfootins#1\endcsname=\csuse{maxhnotesX@#1}
4792 \skip\csname mpfootins#1\endcsname=\csuse{beforenotesX@#1}%
4793 \advance\skip\csname mpfootins#1\endcsname by\csuse{afterruleX@#1}%
4794 \fi
4795 }
4796 %
4797 %

```

`\para@footsetupX` `\para@footsetupX{<series>}`

```

4798 \newcommand*\para@footsetupX}[1]{\csuse{bhookgroupX@#1}\csuse{
notefontsizeX@#1}
4799 \setnoteswidthliketwocolumnsX@{#1}%
4800 \ifcsempy{widthX@#1}%
4801 {}%
4802 {\columnwidth=\expandafter\dimexpr\csuse{widthX@#1}\relax}%
4803 \dimen0=\baselineskip
4804 \multiply\dimen0 by 1024
4805 \divide\dimen0 by \columnwidth \multiply\dimen0 by \footfudgefiddle\relax
4806 %
4807 \expandafter
4808 \xdef\csname footfudgefactor#1\endcsname{%
\expandafter\strip@pt\dimen0 }}
4809 %
4810 %

```

`\parafootstartX` `\parafootstartX{<series>}`

```

4811 \newcommand*\parafootstartX}[1]{%
4812 \ifdimequal{0pt}{\prenotesX@}{}%
4813 {%
4814 \iftoggle{prenotesX@}{%
4815 \togglefalse{prenotesX@}%
4816 \skip\csname footins#1\endcsname=%
4817 \glueexpr\csuse{prenotesX@}+\csuse{afterruleX@#1}\relax%
4818 }%
4819 }%
4820 }%
4821 \leftskip=\z@
4822 \rightskip=\z@
4823 \setparindentX{#1}%
4824 \vskip\skip\@nameuse{footins#1}%
4825 \setnoteswidthliketwocolumnsX@{#1}%
4826 \setnotesXpositionliketwocolumns@{#1}%
4827 \print@footnoteXrule{#1}%
4828 }
4829 %
4830 %

```

`\para@vfootnoteX` `\para@vfootnoteX{<series>}{<text>}`
`\mppara@vfootnoteX`

```

4831 \newcommand*\para@vfootnoteX}[2]{%
4832 \csuse{beforeinsertingX@#1}%
4833 \insert\csname footins#1\endcsname%
4834 \bgroup
4835 \csuse{notefontsizeX@#1}
4836 \footsplitskips
4837 \setbox0=\vbox{\hsize=\maxdimen%
4838 \let\bid@RTL@everypar\@empty%
4839 \insert@txtbeforenotesX{#1}%

```

```

4840 \noindent\csuse{bhooknoteX@#1}%
4841 \@nameuse{footfmt#1}{#1}{#2}}%
4842 \setbox0=\hbox{\unvXH{0}{#1}}%
4843 \dp0=\z@
4844 \ht0=\csname footfudgefactor#1\endcsname\wd0
4845 \box0
4846 \penalty0
4847 \egroup}
4848 \newcommand*{\mppara@vfootnoteX}[3]{%
4849 \get@thisfootnoteX{#1}%
4850 \get@fnmarkX{#1}{\thisc@footnote}{#3}%
4851 \edef\thisc@footnoteX@reading{\the\csname footnote#1@reading\endcsname}%
4852 \global\setbox\@nameuse{mpfootins#1}\vbox{%
4853 \unvbox\@nameuse{mpfootins#1}
4854 \csuse{notefontsizeX@#1}
4855 \footsplitskips
4856 \setbox0=\vbox{\hsize=\maxdimen%
4857 \let\bidirTL@everypar\@empty%
4858 \noindent\color@begingroup%
4859 \csuse{bhooknoteX@#1}%
4860 \@nameuse{footfmt#1}{#1}{#2}\color@endgroup}%
4861 \setbox0=\hbox{\unvXH{0}{#1}}%
4862 \dp0=\z@
4863 \ht0=\csname footfudgefactor#1\endcsname\wd0
4864 \box0
4865 \penalty0}}
4866
4867 %

```

```

\unvXH{2} \newcommand*{\unvXH}[2]{% 2th is optional for retro-compatibility
4869 \setbox0=\vbox{\unvbox#1%
4870 \global\setbox1=\lastbox}%
4871 \unhbox1
4872 \unskip % remove \rightskip,
4873 \unskip % remove \parfillskip,
4874 \unpenalty % remove \penalty of 10000,
4875 \hskip\csuse{afternoteX@#2}%
4876 \relax}% but add the glue to go between the notes
4877
4878 %

```

`\parafootfmtX` `\parafootfmtX{<series>}`

```

4879 \newcommand*{\parafootfmtX}[2]{%
4880 \protected@edef\@currentlabel{%
4881 \@nameuse{@thefnmark#1}%
4882 }%
4883 \insertparafootsepX{#1}%
4884 \ledsetnormalparstuff@common%

```

```

4885 {\csuse{notenumfontX@#1}%
4886 \csuse{notenumfontX@#1}%
4887 \wrapped@footfootmarkX{#1}%
4888 \strut%
4889 \csuse{wrapcontentX@#1}{#2}%
4890 \penalty-10}}
4891
4892 %

```

```

\para@footgroupX \para@footgroupX{<series>}
\mppara@footgroupX
4893 \newcommand*{\para@footgroupX}[1]{%
4894 \hsize=\expandafter\dimexpr\csuse{widthX@#1}\relax%
4895 \unvbox\csname footins#1\endcsname
4896 \ifcsstring{raggedX@#1}{L}{\RaggedLeft}{}%
4897 \ifcsstring{raggedX@#1}{R}{\RaggedRight}{}%
4898 \makehboxofhboxes
4899 \setbox0=\hbox{\unhbox0 \removehboxes}%
4900 \csuse{bhookgroupX@#1}
4901 \csuse{notefontsizeX@#1}
4902 \unhbox0\par}
4903
4904 \newcommand*{\mppara@footgroupX}[1]{%
4905 \setnoteswidthliketwocolumnsX@{#1}%
4906 \vskip\skip\@nameuse{mpfootins#1}
4907 \ifl@dpairing\ifparledgroup
4908 \leavevmode%
4909 \leavevmode\marks\parledgroup@{begin}%
4910 \marks\parledgroup@series{#1}%
4911 \marks\parledgroup@type{footnoteX}%
4912 \fi\fi\normalcolor
4913 \ifparledgroup%
4914 \ifl@dpairing%
4915 \else%
4916 \setnoteswidthliketwocolumnsX@{#1}%
4917 \setnotesXpositionliketwocolumns@{#1}%
4918 \print@footnoteXrule{#1}%
4919 \fi%
4920 \else%
4921 \setnoteswidthliketwocolumnsX@{#1}%
4922 \setnotesXpositionliketwocolumns@{#1}%
4923 \print@footnoteXrule{#1}%
4924 \fi%
4925 \unvbox\csname mpfootins#1\endcsname
4926 \ifcsstring{raggedX@#1}{L}{\RaggedLeft}{}%
4927 \ifcsstring{raggedX@#1}{R}{\RaggedRight}{}%
4928 \makehboxofhboxes
4929 \setbox0=\hbox{\unhbox0 \removehboxes}%
4930 \csuse{bhookgroupX@#1}%
4931 \csuse{notefontsizeX@#1}%

```

```

4932 \setparindentX{#1}%
4933 \unhbox0\par}}
4934
4935 %

```

Insertion of the footnotes separator The command `\insertparafootsepX{<series>}` must be called at the beginning of `\parafootftmX`.

```

\insertparafootsepX \newcommand{\insertparafootsepX}[1]{%
4937 \ifledRcol{%
4938 \ifnumequal{\csuse{prevpage#1@numR}}{\page@numR}%
4939 {\csuse{parafootsepX@#1}}%
4940 {}%
4941 \global\csname prevpage#1@numR\endcsname=\page@numR%
4942 \else%
4943 \ifnumequal{\csuse{prevpage#1@num}}{\page@num}%
4944 {\csuse{parafootsepX@#1}}%
4945 {}%
4946 \global\csname prevpage#1@num\endcsname=\page@num%
4947 \fi%
4948 }
4949 %

```

XIV.5 Wrapping footnote marks in hyperlink

`\wrapped@footfootmarkX` `\wrapped@footfootmarkX` prints the footnote mark of the footpage, wrapped in `hyperref` package's commands, if needed.

```

4950 \newcommand{\wrapped@footfootmarkX}[1]{%
4951 \ifdefined\hypertarget%
4952 \hyperlink%
4953 {\bodyfootmark#1@this@footnoteX@reading}%
4954 {\@nameuse{footfootmark#1}}%
4955 \Hy@raisedlink{%
4956 \hypertarget%
4957 {\@footnotemark#1@this@footnoteX@reading}%
4958 {}%
4959 }%
4960 \else%
4961 \@nameuse{footfootmark#1}%
4962 \fi%
4963 }%
4964 %

```

`\wrapped@bodyfootmarkX` `\wrapped@bodyfootmarkX` prints the footnote mark of the text body, wrapped in `hyperref` package's commands, if needed.

```

4965 \newcommand{\wrapped@bodyfootmarkX}[1]{%
4966   \ifdefined\hypertarget%
4967     \hyperlink%
4968       {@footnotemark#1@\expandafter\the\csname footnote#1@reading\
endcsname}%
4969     {@nameuse{bodyfootmark#1}}%
4970   \Hy@raisedlink{%
4971     \hypertarget%
4972       {@bodyfootmark#1@\expandafter\the\csname footnote#1@reading\
endcsname}%
4973     {}%
4974   }%
4975   \else%
4976     \@nameuse{bodyfootmark#1}%
4977   \fi%
4978 }%
4979 %

```

XV Code common to both critical and familiar footnote in normal arrangement

\par should always be redefined to \endgraf within the format macro (this is what \normal@pars does), to override tricky material in the main text to get the lines numbered automatically (as set up by \autopar, for example).

In the case of footnote arranged in a “normal” way, we also must set some setting for paragraph indent and text direction when using Lua_{TEX}.

That why we have defined \ledsetnormalparstuff@common in order to make this setting for both familiar and critical notes. This command is called by command to make specific setting to critical or familiar footnote.

```

\ledsetnormalparstuff@common%0 \newcommand*{\ledsetnormalparstuff@common}{%
\Xledsetnormalparstuff%81 \ifluatex%
\ledsetnormalparstuffX%82 \ifdefstring{\footnote@luatextextdir}{TLT}{}%
4983 {\textdir\footnote@luatextextdir}%
4984 \pardir\footnote@luatexpardir%
4985 \fi%
4986 \csuse{\csuse{footnote@dir}}%
4987 \normal@pars%
4988 \parfillskip \z@ \@plus 1fil}%
4989
4990 \newcommand*{\Xledsetnormalparstuff}[1]{%
4991   \ledsetnormalparstuff@common%
4992   \Xsetparindent{#1}%
4993   \iftoggle{Xparindent@#1}{\hspace{\parindent}}{}%
4994 }%
4995
4996 \newcommand*{\ledsetnormalparstuffX}[1]{%

```

```

4997 \ledsetnormalparstuff@common%
4998 \setparindentX{#1}%
4999 \iftoggle{parindentX@#1}{\hspace{\parindent}}{}%
5000 }%
5001 %

```

XVI Footnotes' width for two columns

We define here some commands which make sense only with `reledpar`, but must be called when defining notes parameters. These commands change the width of block notes to allow them to have the same size than two parallel columns.

`\old@hsize` These two commands are called at the beginning of critical or familiar notes groups. They set, if the option is enabled, the `\hsize`. They are also called at the on the setup for paragraphed notes.

`\noteswidthliketwocolumns@`

`\noteswidthliketwocolumnsX@`

```

5002
5003 \newdimen\old@hsize%
5004 \AtBeginDocument{\old@hsize=\hsize}%
5005
5006 \newcommand{\setXnoteswidthliketwocolumns@}[1]{%
5007   \global\let\hsize@fornote=\hsize%
5008   \global\old@hsize=\hsize%
5009   \let\old@columnwidth=\columnwidth%
5010   \iftoggle{Xnoteswidthliketwocolumns@#1}%
5011     {%
5012       \setwidthliketwocolumns%
5013       \global\let\hsize@fornote=\hsize%
5014     }%
5015   {}%
5016   \let\hsize=\hsize@fornote%
5017   \let\columnwidth=\old@columnwidth%
5018 }%
5019
5020 \newcommand{\setnoteswidthliketwocolumnsX@}[1]{%
5021   \global\let\hsize@fornote=\hsize%
5022   \global\old@hsize=\hsize%
5023   \let\old@columnwidth=\columnwidth%
5024   \iftoggle{noteswidthliketwocolumnsX@#1}%
5025     {%
5026       \setwidthliketwocolumns%
5027       \global\let\hsize@fornote=\hsize%
5028     }%
5029   {}%
5030   \let\hsize=\hsize@fornote%
5031   \let\columnwidth=\old@columnwidth%
5032 }%
5033
5034 %

```

`\setXnotespositionliketwocolumns@` These two commands set the position of the critical / familiar footnotes, depending on the hooks `Xnoteswidthliketwocolumns` and `noteswidthliketwocolumnsX`. They call commands which are defined only in `reledpar`, because this feature has no sens without `reledpar`.

`\setnotesXpositionliketwocolumns@`

```

5035 \newcommand{\setXnotespositionliketwocolumns@}[1]{%
5036   \iftoggle{Xnoteswidthliketwocolumns@#1}{%
5037     \csuse{setnotespositionliketwocolumns@\columns@position}%
5038   }{}%
5039 }%
5040
5041 \newcommand{\setnotesXpositionliketwocolumns@}[1]{%
5042   \iftoggle{noteswidthliketwocolumnsX@#1}{%
5043     \csuse{setnotespositionliketwocolumns@\columns@position}%
5044   }{}%
5045 }%
5046
5047 %

```

XVII Footnotes' order

`\fnpos` The `\fnpos` and `\mpfnpos` simply place their arguments in `\@fnpos` and `\@mpfnpos`, which will be used later in the output routine.

`\mpfnpos`

`\@fnpos`

`\@mpfnpos`

```

5048 \def\@fnpos{familiar-critical}
5049 \def\@mpfnpos{critical-familiar}
5050 \newcommand{\fnpos}[1]{\xdef\@fnpos{#1}}
5051 \newcommand{\mpfnpos}[1]{\xdef\@mpfnpos{#1}}
5052 %

```

XVIII Footnotes' rule

Because the footnotes' rules can be shifted to the right when footnotes are set like two columns, we do not print them directly, but we put them in a `\vbox`.

```

\print@Xfootnoterule\newcommand{\print@Xfootnoterule}[1]{%
\print@footnoteXrule\  \vskip-\csuse{Xafterterrule@#1}%Because count in \dimen\csuse{#1footins}
5055 \nointerlineskip%
5056 \moveleft-\leftskip\vbox{\csuse{#1footnoterule}}%
5057 \nointerlineskip%
5058 \vskip\csuse{Xafterterrule@#1}%
5059 }%
5060
5061 \newcommand{\print@footnoteXrule}[1]{%
5062   \vskip-\csuse{afterterruleX@#1}%Because count in \dimen\csuse{footins#1}
5063   \nointerlineskip%
5064   \moveleft-\leftskip\vbox{\csuse{footnoterule#1}}%

```

```

5065 \nointerlineskip%
5066 \vskip\csuse{afterruleX@#1}%
5067 }%
5068
5069 %

```

XIX Specific skip for first series of footnotes

XIX.1 Overview

`\Xbeforenotes` inserts a specific skip for the first series of notes in a page. As we can't know in advance which series will be the first, we call `\prepare@Xprenotes` before inserting any critical notes in order to prevent page number overlapping.

1. If it is the first note of the current page, it changes the footnote skip for the series to the value specified to `\Xbeforenotes`. It also keeps the series of the note as the first one of the current page.
2. If it is not the first note of the current page:
 - If the current series is printed after the series kept as the first of the current page, then nothing happens.
 - If the current series is printed before the series kept as the first of the current page, then it changes the footnote skip of the current series to the value normally used by the series which was marked as the first of the page. It also keeps the current series as the new first one of the current page.

For example, suppose the series order is A,B. We call first a `\Bfootnote` and a `\Afootnote`. The only skips used are, finally, the skip specific to the first series of the page, and the skip for the B series. If we have not called `\Afootnote`, the only skip used is the skip specific to the first series of the page.

That is perfect.

The series skip and the first series of the current page are reset before the footnotes are printed. Then, the `footstart` macros manage the problem of the first series of the page.

After the rule, the space which is defined by `\Xafterrule` does not depend on whether the series is the first one of the page or not. So we use its normal value for each series.

And now, implementation !

XIX.2 User level command

`\Xprenotes@` If user redefines `\Xprenotes@`, via `\Xprenotes` to a value greater than 0 pt, this skip will be added before first series notes instead of the notes skip.

```

5070 \newtoggle{Xprenotes@}%
5071 \toggletrue{Xprenotes@}%

```

```

5072 \newcommand{\Xprenotes@}{Opt}%
5073 \newcommand*{\Xprenotes}[1]{\renewcommand{\Xprenotes@}{#1}}%
5074 \newcommand{\preXnotes}[1]{\led@warning@preXnotes@deprecated\Xprenotes{#1}}
    %For compatibility
5075 %

```

The same, but for familiar footnotes.

```

\Xprenotes 76 \newtoggle{prenotesX@}
\Xprenotes 77 \toggletrue{prenotesX@}
5078 \newcommand{\prenotesX@}{Opt}
5079 \newcommand*{\prenotesX}[1]{\renewcommand{\prenotesX@}{#1}}
5080 %

```

XIX.3 Internal commands

```

firstXseries@ 81 \gdef\firstXseries@{}
prepare@Xprenotes 82 \newcommand{\prepare@Xprenotes}[1]{%
5083   \ifdimequal{Opt}{\Xprenotes@}%
5084   {}%
5085   {%
5086     \IfStrEq{\firstXseries@}{}{%
5087       \global\skip\csuse{#1footins}=\Xprenotes@%
5088       \global\advance\skip\csname #1footins\endcsname by\csuse{Xafterterrule@
#1}%
5089       \gdef\firstXseries@{#1}%
5090     }%
5091     {%
5092       \ifseriesbefore{#1}{\firstXseries@}%
5093       {%
5094         \global\skip\csuse{#1footins}=\csuse{Xbeforenotes@firstXseries@}%
5095         \global\advance\skip\csname #1footins\endcsname by\csuse{Xafterterrule@
#1}%
5096         \gdef\firstXseries@{#1}%
5097       }%
5098       {%
5099       }%
5100     }%
5101   }
5102 %

```

The same thing is required for familiar notes and \prenotesX.

```

firstseriesX@ 03 \gdef\firstseriesX@{}
prepare@prenotesX 04 \newcommand{\prepare@prenotesX}[1]{%
5105   \ifdimequal{Opt}{\prenotesX@}%
5106   {}%

```

```

5107 {%
5108   \IfStrEq{\firstseriesX@}{}{%
5109     \global\skip\csuse{footins#1}=\prenotesX@%
5110     \global\advance\skip\csname footins#1\endcsname by\csuse{afterruleX@
#1}%
5111     \gdef\firstseriesX@{#1}%
5112   }%
5113   {%
5114     \ifseriesbefore{#1}{\firstseriesX@}%
5115     {%
5116       \global\skip\csuse{footins#1}=\csuse{beforenotesX@\firstseriesX@}%
5117       \global\advance\skip\csname footins#1\endcsname by\csuse{afterruleX@
#1}%
5118       \gdef\firstXseries@{#1}%
5119     }%
5120     {}%
5121   }%
5122 }%
5123 }
5124 %

```

XX Endnotes

First, check the noend option.

```

5125 \ifbool{noend@}{}{%Used instead of \ifnoend@ to prevent expansion problem
5126 %

```

XX.1 Internal commands

`\l@dend@open` and `\l@dend@close` are the macros that are used to open and close the endnote file. Note that all our writing to this file is `\immediate`: all page and line numbers for the endnotes are generated by the same mechanism we use for the footnotes, so that there is no need to defer any writing to catch information from the output routine. The argument of these two command is the series letter.

```

5127 \newcommand{\l@dend@open}[1]{%
5128   \global\booltrue{l@dend@#1}%
5129   \expandafter\immediate%
5130   \expandafter\openout%
5131   \csname l@d@#1end\endcsname%
5132   =\l@auxdir\jobname.#1end\relax%
5133 }%
5134 \newcommand{\l@dend@close}[1]{%
5135   \global\boolfalse{l@dend@#1}%
5136   \expandafter\immediate%
5137   \expandafter\closeout\csname l@d@#1end\endcsname%
5138 }%

```

```
5139
5140 %
```

\l@dend@stuff \l@dend@stuff is used by \beginnumbering to do everything that is necessary for the endnotes at the start of each section: it opens the \l@d@end file, if necessary, and writes the section number to the endnote file.

```
5141 \newcommand{\l@dend@stuff}{%
5142   \def\do##1{%
5143     \ifbool{l@dend@##1}{}%
5144     {\l@dend@open{##1}}%
5145     \expandafter\immediate\expandafter\write\csname l@d@##1end\endcsname{\
string\l@d@section{\the\section@num}\@percentchar}%
5146   }%
5147   \dolistloop{\@series}%
5148 }%
5149
5150 %
```

\endprint The \endprint here is nearly identical in its functioning to \normalfootfmt.
\l@d@section The endnote file also contains \l@d@section commands, which supply the section numbers from the main text; standard reledmac does nothing with this information, but it is there if you want to write custom macros to do something with it. Arguments are:

- #1 Line numbers and font selection.
- #2 Lemma.
- #3 Note content.
- #4 Series.
- #5 Optional argument of \Xendnote.
- #6 Side (L or R).
- #7 Label for cross-referencing.

```
5151 \global\newbool{parapparatus@}{\long}\def\endprint#1#2#3#4#5#6#7{%
5152   \iftoggle{Xendfirstnote@#4}{%
5153     \global\togglefalse{Xendfirstnote@#4}%
5154     \csuse{Xendtxtbeforenotes@#4}%
5155   }{%
5156     \csuse{Xendbhooknote@#4}%
5157     \csuse{Xendnotefontsize@#4}%
5158     \hangindent=\csuse{Xendhangindent@#4}%
5159     \Xendstorelineinfo{#1}{#4}%
5160     \ifXendinsertsep%
5161       \hskip\csuse{Xendafternote@#4}\relax%
```

```

5162 \ifcsdef{prevendline#4}%
5163   {\ifcsequal{prevendline#4}{lineinfo@}%
5164     {\ifcseempty{Xendsymmlinenum@#4}{\csuse{Xendsep@#4}}{}}%
5165     {\csuse{Xendsep@#4}}%
5166   }%
5167   {\csuse{Xendsep@#4}}%
5168 \else%
5169   \iftoggle{Xendparagraph@#4}%
5170     {\global\Xendinsertsep@true}%
5171     {}%
5172 \fi%
5173 \xdef\@currentseries{#4}%
5174 \def\do##1{%
5175   \setkeys[mac]{truefootnoteoption}{##1}%
5176 }%
5177 \notblank{#5}{\docsvlist{#5}}{}%
5178 \IfStrEq{#6}{R}{\ledRcol@true}{}%
5179 \def\@this@crossref@start{#7:start}%
5180 \def\@this@crossref@end{#7:end}%
5181 \printlineendnote{#1}{#4}%
5182 \IfStrEq{#6}{R}{\ledRcol@false}{}%
5183 \nottoggle{Xendlemmadisablefontselection@#4}%
5184   {\select@lemmafont#1|}%
5185   {}%
5186 \bgroup%
5187   \csuse{Xendlemmafont@#4}%
5188   \csuse{Xendwraplemma@#4}{#2}%
5189 \egroup%
5190 \ifboolexpr{%
5191   togl {nosep@}%
5192   or test{\ifcseempty{Xendlemmaseparator@#4}}%
5193 }%
5194   {\hskip\csuse{Xendinplaceoflemmaseparator@#4}\relax}%
5195   {\nobreak%
5196     \hskip\csuse{Xendbeforelemmaseparator@#4}%
5197     \csuse{Xendlemmaseparator@#4}%
5198     \hskip\csuse{Xendafterlemmaseparator@#4}%
5199     \relax%
5200   }%
5201   \csuse{Xendwrapcontent@#4}{#3}%
5202   \nottoggle{Xendparagraph@#4}{\par}{}%
5203   \def\do##1{%
5204     \setkeys[mac]{falsefootnoteoption}{##1}%
5205   }%
5206   \notblank{#5}{\docsvlist{#5}}{}%
5207 }}%
5208
5209 \let\l@d@section=\@gobble
5210
5211 %

```

`\Xendstorelineinfo` The `\Xendstorelineinfo` macro is used to store some data about line number of the current critical endnote, data which will be reused later for the `\Xnumberonlyfirstinline` and related setting.

#1 endnote specification for the current endnote; #2 endnote series.

```

5212 \newcommand{\Xendstorelineinfo}[2]{%
5213   \l@dp@rsefootspec#1|{%
5214     \iftoggle{Xendnumberonlyfirstintwolines@#2}{%
5215       \xdef\lineinfo@{\l@dparsedstartpage - \l@dparsedstartline - \
5216         \l@dparsedstartsub - \l@dparsedendpage - \l@dparsedendline - \
5217         \l@dparsedendsub}%
5218     }%
5219     {%
5220       \xdef\lineinfo@{\l@dparsedstartpage - \l@dparsedstartline - \
5221         \l@dparsedstartsub}%
5222     }%
5223   }%
5224   %

```

`\printlineendnote` This macro controls, in endnote, whether the line number is printed or not, according to the series options. Its first argument is the information about lines; its second is the series of the footnote.

```

5222 \newcommand{\printlineendnote}[2]{%
5223   \ifboolexpr{%
5224     togl {nonum@}%
5225     or togl {Xendnonumber@#2}%
5226   }%
5227   {\hspace{\csuse{Xendinplaceofnumber@#2}}}%
5228   {%
5229     \iftoggle{Xendnumberonlyfirstinline@#2}%
5230     {\ifcsdef{prevendline#2}%
5231       {\ifcsequal{prevendline#2}{\lineinfo@}%
5232         {%
5233           \csuse{Xendbhookinplaceofnumber@#2}%
5234           \ifcempty{Xendsymnum@#2}%
5235             {\hspace{\csuse{Xendinplaceofnumber@#2}}}%
5236             {\printsymlineendnotearea{#2}}%
5237           \csuse{Xendahookinplaceofnumber@#2}%
5238         }%
5239         {\printlineendnotearea{#1}{#2}}}%
5240     {\printlineendnotearea{#1}{#2}}}%
5241   }%
5242   {\printlineendnotearea{#1}{#2}}%We keep every time line
5243   \csxdef{prevendline#2}{\lineinfo@}%
5244   }%
5245 }%
5246 %

```

```

\printsymlineendnotearea 47 \newcommand{\printsymlineendnotearea}[1]{%
5248 \hspace{\csuse{Xendbeforeysymlinenum@#1}}%
5249 \csuse{Xendnotenumfont@#1}%
5250 \ifdimequal{\csuse{Xendboxsymlinenum@#1}}{\z@}%
5251 {\csuse{Xendsymlinenum@#1}}%
5252 {\hbox to \csuse{Xendboxsymlinenum@#1}%
5253 {\csuse{Xendsymlinenum@#1}\hfill}%
5254 }%
5255 \hspace{\csuse{Xendaftersymlinenum@#1}}%
5256 }%
5257 %

```

\printlineendnotearea This macro prints the space before the line number, changes the font, then prints the line number and the space after it. It is called by `\endprint` depending of the options about repeating line numbers. The first argument is line information, the second is the notes series (A, B, C, etc.)

```

5258 \newcommand{\printlineendnotearea}[2]{%
5259 \csuse{Xendbhooklinenumber@#2}%
5260 \hspace{\csuse{Xendbeforenumber@#2}}%
5261 \bgroup%
5262 \csuse{Xendnotenumfont@#2}%
5263 \ifdimequal{\csuse{Xendboxlinenum@#2}}{\Opt}%
5264 {\printendlines#1||\ifledRcol@{\@Rlineflag\fi}%
5265 {\leavevmode%
5266 \hbox to \csuse{Xendboxlinenum@#2}%
5267 {%
5268 \IfSubStr{RC}{\csuse{Xendboxlinenumalign@#2}}{\hfill}{}%
5269 \printendlines#1||\ifledRcol@{\@Rlineflag\fi}%
5270 \IfSubStr{LC}{\csuse{Xendboxlinenumalign@#2}}{\hfill}{}%
5271 }%
5272 \egroup%
5273 \hspace{\csuse{Xendafternumber@#2}}%
5274 \csuse{Xendahooklinenumber@#2}%
5275 }%
5276 %

```

XX.2 User level commands

XX.2.1 Inserting contents to endnotes

The `\Xendnotes` commands are defined above, when defining apparatus commands by series. Here, we define only `\toendnotes` command not specific to a series, in order to insert arbitrary code. The regular version writes an unexpanded argument, while the regular version writes a once-expanded argument.

```

\toendnotes 77 \newcommandx{\toendnotes}[2][1,usedefault]{%
\toendnotes* 78 \ifboolexpr{bool{numbering} or bool{numberingR}}{%

```

```

5279 \def\do##1{%
5280   \expandafter\immediate\expandafter\write\csname l@d@##1end\endcsname%
5281   {\unexpanded{#2}\@percentchar}%
5282 }%
5283 \ifstrempy{#1}%
5284   {\dolistloop{\@series}}%
5285   {\docsvlist{#1}}%
5286 }\led@err@toendnotes@outsidenumbering}%
5287 }%
5288 \WithSuffix\newcommandx\toendnotes*[2][1,usedefault]{%
5289   \ifboolexpr{bool{numbering} or bool{numberingR}}{%
5290     \def\do##1{%
5291       \expandafter\immediate\expandafter\write\csname l@d@##1end\endcsname%
5292       {#2\@percentchar}%
5293     }%
5294     \ifstrempy{#1}%
5295       {\dolistloop{\@series}}%
5296       {\docsvlist{#1}}%
5297     }\led@err@toendnotes@outsidenumbering}%
5298 }%
5299 %

```

XX.2.2 Printing endnotes

`\doendnotes` `\doendnotes` is the command you use to print one series of endnotes; it takes one argument: the series letter of the note series you want to print. `\Xendinsertsep@` is set to true at the first note of the series, and to false at the last one.

```

5300 \newif\ifXendinsertsep@
5301 \newcommand*{\doendnotes}[1]{%
5302   \l@dend@close{#1}%
5303   \begingroup
5304     \csxdef{prevpagenum@#1}{}%
5305     \csxdef{prevpagerange@#1}{}%
5306     \global\toggletrue{Xendfirstnote@#1}%
5307     \makeatletter
5308     \expandafter\let\csname #1end\endcsname=\endprint
5309     \input\l@auxdir\jobname.#1end%
5310     \global\Xendinsertsep@false%
5311   \endgroup}
5312 %

```

`\doendnotesbysection` `\doendnotesbysection` is a variant of the previous macro. While `\doendnotes` print endnotes for all of numbered sections `\doendnotesbysection` print the endnotes for the first numbered section at its first call for a series, then for the second section at its second call for the same series, then for the third section at its third call for the same series, and so on.

```

5313 \newcommand*{\doendnotesbysection}[1]{%

```

```

5314 \l@dend@close{#1}%
5315 \csxdef{prevpagenum@#1}{}%
5316 \csxdef{prevpagerange@#1}{}%
5317 \global\expandafter\advance\csname #1end@bysection\endcsname by 1%
5318 \begingroup%
5319   \makeatletter%
5320   \def\l@d@section##1{%
5321     \global\toggletrue{Xendfirstnote@#1}%
5322     \ifnumequal{##1}{\csname #1end@bysection\endcsname}%
5323       {\cslet{#1end}{\endprint}}%
5324       {\cslet{#1end}{\@gobbleseven}}%
5325   }%
5326   \input\l@auxdir\jobname.#1end%
5327   \global\Xendinsertsep@false%
5328 \endgroup%
5329 }%
5330 %

```

We close now the conditional period, which depends on `\ifnoend@`, because the following commands can be used by other commands than those specific to endnotes.

```

5331 }%
5332 %

```

`\setprintendlines` The `\printendlines` macro is similar to `\printlines` but is for printing endnotes rather than footnotes.

The principal difference between foot- and endnotes is that footnotes are printed on the page where they are specified but endnotes are printed at a different point in the document. We need an indication of the source of an endnote; `\setprintendlines` provides this by always printing the page number. The coding is slightly simpler than `\setprintlines`.

from the starting page number.

```

5333 \newcommand*{\setprintendlines}[6]{%
5334   \let\@annot@start@print\relax%
5335   \let\@annot@end@print\relax%
5336   \l@d@pnumfalse%
5337   \l@d@dashfalse%
5338   \l@d@elinfalse%
5339 }%

```

First of all, we print the second page number only if the ending page number is different

```

5340   \ifnum#4=#1 \else
5341     \l@d@pnumtrue
5342     \l@d@dashtrue
5343   \fi
5344 %

```

We print the ending line number if: (1) we are printing the ending page number, or (2) the ending line is different from the starting line number.

```

5345 \ifbool{expr}{%
5346     bool{!@d@pnum}%
5347     or not test{!ifnumequal{#2}{#5}}}%
5348 }{%
5349     \l@d@elintrue%
5350     \l@d@dashtrue%
5351     \l@d@elintrue
5352     \l@d@dashtrue
5353     \unless\ifx\relax\annot@end%
5354     \def\@annot@end@print{%
5355         \l@wrapcs@ifnotemptybox{Xendwraplinenumannotation@\@currentseries
5356     }\@annot@end}%
5357     }%
5358     \fi%
5359 }%
5360 %

```

We define the starting line number annotation as a merge of the starting annotation and ending annotation if we don't print the ending line number. Otherwise, it is only the starting annotation.

```

5361 \ifl@d@elin%
5362 \def\@annot@start@print{%
5363     \l@wrapcs@ifnotemptybox{Xendwraplinenumannotation@\@currentseries}{\
5364     \annot@start}%
5365     }%
5366     \else%
5367     \ifx\annot@start\annot@end%
5368     \unless\ifx\@annot@start\relax%
5369     \def\@annot@start@print{%
5370         \l@wrapcs@ifnotemptybox{Xendwraplinenumannotation@\@currentseries
5371     }\@annot@start}%
5372     }%
5373     \fi%
5374     \else%
5375     \ifx\@annot@end@print\relax%
5376     \def\@annot@start@print{%
5377         \l@wrapcs@ifnotemptybox{Xendwraplinenumannotation@\@currentseries
5378     }\@annot@start}%
5379     }%
5380     \fi%
5381     \ifdefined\linangesep%
5382     \linangesep%
5383     \else%
5384     \csuse{Xendlinangeseparator@\@currentseries}%
5385     \fi%
5386     \fi%
5387     \annot@end%
5388     }%
5389     \fi%
5390 }%

```

```

5387     \else%
5388     \let\@annot@start@print\@annot@end@print%
5389     \let\@annot@end@print\relax%
5390     \fi%
5391 \fi%
5392 \fi%
5393 %

```

We print the starting sub-line if it is nonzero.

```

5394 \l@d@ssubfalse
5395 \ifnum#3=0 \else
5396     \l@d@ssubtrue
5397 \fi
5398 %

```

We print the ending sub-line if it is nonzero and: (1) it is different from the starting sub-line number, or (2) the ending line number is being printed.

```

5399 \l@d@eslfalse
5400 \ifnum#6=0 \else
5401     \ifnum#6=#3
5402         \ifl@d@elin \l@d@esltrue \else \l@d@eslfalse \fi
5403     \else
5404         \l@d@esltrue
5405         \l@d@dashtrue
5406     \fi
5407 \fi%
5408 %

```

```

5409 \ifl@d@dash%
5410 \ifboolexpr{togl{fulllines@} or test{\ifcsemt{Xendtwolines@}\
@currentseries}}}%
5411 {}%
5412 {%
5413 \setistwofollowinglines{#1}{#2}{#4}{#5}%
5414 \ifboolexpr{%
5415     (%
5416         togl{Xendtwolinesbutnotmore@\@currentseries}%
5417         and not%
5418         (%
5419             bool{istwofollowinglines@}%
5420         )%
5421     )%
5422     or%
5423     (%
5424         (not test{\ifnumequal{#1}{#4}})%
5425         and togl{Xendtwolinesonlyinsamepage@\@currentseries}%
5426     )%
5427 }%
5428 {}%
5429 {%

```

```

5430         \l@d@dashfalse%
5431         \l@d@Xtwolinesttrue%
5432         \l@d@elinfalse%
5433         \l@d@eslfalse%
5434         \ifcempty{Xendmorethantwolines@ \@currentseries}%
5435         {%
5436         {\ifistwofollowinglines@ \else%
5437         \l@d@Xmorethantwolinesttrue%
5438         \fi%
5439         }%
5440         }%
5441     }%
5442 \fi%
5443 %

```

If the `\Xendnoidenticallinenumannotation` is set for this series, we check if the ending annotation is identical to the starting. If true, we don't print the ending annotation

```

5444 \iftoggle{Xendnoidenticallinenumannotation@ \@currentseries}{%
5445 \ifx\annot@start\annot@end%
5446 \let\annot@end@print\relax%
5447 \ifx\linenumrep\@gobble%Don't print the dash if we're not printing
the line number
5448 \l@d@dashfalse%
5449 \fi%
5450 \fi%
5451 }{%
5452 %

```

Finally, we check for `\Xendlinenumannotationonlyfirst` and `\Xendlinenumannotationonlyfirsti` and we redefine, if required, `\@annot@start@print` and `\annot@end@print`. We also store the current line number annotations.

```

5453 \iftoggle{Xendlinenumannotationonlyfirst@ \@currentseries}{%
5454 \ifbool{expr}{%
5455 (%
5456 togl{Xendlinenumannotationonlyfirstintwo@ \@currentseries}%
5457 and test{\ifcsequal{annot@start}{prevannot@start@ \@currentseries}}%
5458 and test{\ifcsequal{annot@end}{prevannot@end@ \@currentseries}}%
5459 )%
5460 or%
5461 (%
5462 not togl{Xendlinenumannotationonlyfirstintwo@ \@currentseries}%
5463 test{\ifcsequal{annot@start}{prevannot@start@ \@currentseries}}%
5464 )%
5465 }{%
5466 \def\annot@start@print{%
5467 \l@wrapcs@ifnotemptybox{Xendwraplinenumannotation@ \@currentseries
}{\csuse{Xendsymlinenumannotation@ \@currentseries}}%
5468 }%

```

```

5469 \let\@annot@end@print\relax%
5470 \ifx\linenumrep\@gobble%Don't print the dash if we're not printing
the line number
5471 \l@d@dashfalse%
5472 \fi%
5473 }{}%
5474 \global\cslet{prevannot@start@\@currentseries}{\annot@start}%
5475 \global\cslet{prevannot@end@\@currentseries}{\annot@end}%
5476 }%
5477 {}%
5478 %

End of \setprintendlines.

5479 }%
5480 %

```

`\printendlines` Now we are ready to print it all.

```

5481 \def\printendlines#1|#2|#3|#4|#5|#6|#7|#8|{%
5482 \begingroup
5483 \setprintendlines{#1}{#2}{#3}{#4}{#5}{#6}%
5484 %

```

The only subtlety left here is when to print a period between numbers. But the only instance in which this is tricky is for the ending sub-line number: it could be coming after the starting sub-line number (in which case we want only the dash) or after an ending line number (in which case we need to insert a period).

So, first, start the starting line box, if needed.

```

5485 \ifdimequal{\csuse{Xendboxstartlinenum@\@currentseries}}{0pt}%
5486 {\bgroup}%
5487 {\leavevmode\hbox to \csuse{Xendboxstartlinenum@\@currentseries}\bgroup
\hfill}%
5488 %

```

Then, print the starting page number-

```

5489 \ifboolexpr{%
5490 (%
5491 test{\ifcsstring{prevpagenum@\@currentseries}{#1}}%
5492 and not%
5493 (togl{Xendpagenumberonlyfirstifsingle@\@currentseries} and bool{
l@d@pnum}})%
5494 )%
5495 or%
5496 (%
5497 test {\ifcsstring{prevpagerange@\@currentseries}{#1-#4}}%
5498 )%
5499 }%
5500 {%
5501 \ifcsempy{Xendsympagenum@\@currentseries}%

```

```

5502     {\hspace{\csuse{Xendinplaceofpagenumber@\@currentseries}}}%
5503     {\csuse{Xendsympagenum@\@currentseries}}}%
5504   }%
5505   {%
5506   \wrap@edcrossref{\@this@crossref@start}{\printnpnum{#1}}%
5507   }%
5508   %

```

Then, determine what must be printed before the start line.

```

5509   \ifl@d@dash%
5510   \ifl@d@pnum%
5511     \csuse{Xendlineprefixsingle@\@currentseries}%
5512   \else%
5513     \ifcsemtty{Xendlineprefixmore@\@currentseries}%
5514       {\csuse{Xendlineprefixsingle@\@currentseries}}%
5515       {\csuse{Xendlineprefixmore@\@currentseries}}%
5516     \fi%
5517   \else%
5518     \csuse{Xendlineprefixsingle@\@currentseries}%
5519   \fi%
5520   %

```

Then print the starting line, followed, if needed, by the side flag and the starting sub line number, then the line number annotation.

```

5521   \ifcsstring{Xendlinenumannotationposition@\@currentseries}{before}%
5522     {\@annot@start@print}%
5523   {}%
5524   \wrap@edcrossref{\@this@crossref@start}{%
5525     \ifledRcol@%
5526       \linenumrepR{#2}%
5527     \else%
5528       \linenumrep{#2}%
5529     \fi%
5530   }%
5531   \iftoggle{Xendlineflag@\@currentseries}{\ifledRcol@\@Rlineflag\fi}{}%
5532   \ifl@d@ssub%
5533     \csuse{Xendsublinesep@\@currentseries}%
5534     \wrap@edcrossref{\@this@crossref@start}{%
5535       \ifledRcol@%
5536         \sublinenumrepR{#3}%
5537       \else%
5538         \sublinenumrep{#3}%
5539       \fi%
5540     }%
5541   \fi%
5542   \ifcsstring{Xendlinenumannotationposition@\@currentseries}{after}%
5543     {\@annot@start@print}%
5544   {}%
5545   %

```

Close the box.

```
5546 \egroup%
5547 %
```

Open the box for the ending line number.

```
5548 \ifdimequal{\csuse{Xendboxendlinenumber@\@currentseries}}{0pt}%
5549 {\bgroup}%
5550 {\hbox to \csuse{Xendboxendlinenumber@\@currentseries}\bgroup}%
5551 %
```

Print the dash + the ending line number, or the line number range symbol.

```
5552 \ifl@d@Xtwolines%
5553 \ifl@d@Xmorethantwolines%
5554 \csuse{Xendmorethantwolines@\@currentseries}%
5555 \else%
5556 \csuse{Xendtwolines@\@currentseries}%
5557 \fi%
5558 \else%
5559 \ifl@d@dash%
5560 \ifdefined\linerangesep%
5561 \linerangesep%
5562 \else%
5563 \csuse{Xendlinerangeseparator@\@currentseries}%
5564 \fi%
5565 \fi%
5566 %
```

Print the ending page number.

```
5567 \ifl@d@pnum%
5568 \ifcsstring{prevpagerange@\@currentseries}{#1-#4}%
5569 {%
5570 \ifcsemtyp{Xendsympagenumber@\@currentseries}%
5571 {\hspace{\csuse{Xendingplaceofpagenumber@\@currentseries}}}%
5572 {\csuse{Xendsympagenumber@\@currentseries}}%
5573 }%
5574 {%
5575 \wrap@edcrossref{\@this@crossref@end}\printpnum{#4}%
5576 }%
5577 \fi%
5578 %
```

Print the ending line number, with, if needed, the line prefix, and followed by the side flag, the subline number, and line number annotation.

```
5579 \ifcsstring{Xendlinenumberannotationposition@\@currentseries}{before}%
5580 {\@annot@end@print}%
5581 {%
5582 \ifl@d@elin%
5583 \ifl@d@pnum\csuse{Xendlinelineprefixsingle@\@currentseries}\fi%
5584 \wrap@edcrossref{\@this@crossref@end}{%

```

```

5585         \ifledRcol@%
5586         \linenumrepR{#5}%
5587     \else%
5588         \linenumrep{#5}%
5589     \fi%
5590 }%
5591 \iftoggle{Xendlineflag@{\@currentseries}{\ifledRcol@{\@Rlineflag\fi}{}}%
5592 \fi%
5593 \ifl@d@esl%
5594     \ifl@d@elin%
5595         \csuse{Xendsublinesep@{\@currentseries}%
5596         \fi%
5597     \wrap@edcrossref{\@this@crossref@end}{%
5598         \ifledRcol@%
5599         \sublinenumrepR{#6}%
5600     \else%
5601         \sublinenumrep{#6}%
5602     \fi%
5603 }%
5604 \fi%
5605 \ifcsstring{Xendlinenumannotationposition@{\@currentseries}{after}%
5606     {\@annot@end@print}%
5607     }%
5608 \fi%
5609 %

```

Close the ending line box.

```

5610 \ifdimequal{\csuse{Xendboxendlinenum@{\@currentseries}}{Opt}%
5611 {}%
5612 {\hfill}%Prevent underfull hbox
5613 \egroup%
5614 %

```

And, finally, save, if needed, the current page number for the Xendpagenumberonlyfirst hooks.

```

5615 \iftoggle{Xendpagenumberonlyfirst@{\@currentseries}%
5616     {\iftoggle{Xendpagenumberonlyfirstintwo@{\@currentseries}%
5617         {\csxdef{prevpagerange@{\@currentseries}{#1-#4}}%
5618         {\csxdef{prevpagenum@{\@currentseries}{#4}}%
5619         }%
5620     {}%
5621 %

```

Now, the end of \printendlines macro.

```

5622 \endgroup%
5623 }%
5624
5625 %

```

\printnpnum A macro to print a page number in an endnote. Should not be override anymore

```

5626 \newcommand*{\printnpnum}[1]{\csuse{Xendbeforepagenumber@\@currentseries
    }#1\csuse{Xendafterpagenumber@\@currentseries}}
5627
5628 %

```

XXI Generate series of notes

In this section, X means the name of the series (A, B etc.)

\series \series\series creates one more new series. It is a public command, which just loops on the private command \newseries@.

```

5629 \newcommand{\newseries}[1]{%
5630     \def\do##1{\newseries@{##1}}%
5631     \docsvlist{#1}
5632 }
5633 %

```

\@series The \series@ macro is an etoolbox list, which contains the name of all series.

```

5634 \newcommand{\@series}{}
5635 %

```

The command \newseries@\series creates a new series of the footnote.

\newseries@ \newcommand{\newseries@}[1]{
%

XXI.1 Test if series is still existing

```

5638 \xifinlist{#1}{\@series}{\led@warn@SeriesStillExist{#1}}%
5639 {%
5640 %

```

XXI.2 Init specific to reledpar

When calling \newseries@ after having loaded reledpar, we need to load specific setting.

```

5641 \ifdefined\newseries@par%
5642     \newseries@par{#1}%
5643 \fi%
5644 %

```

XXI.3 For critical footnotes

Critical footnotes are those which start with letters. We look for the `\nocritical` option of `reledmac`.

```
5645 \unless\ifnocritical@
5646 %
```

XXI.3.1 Options

```
5647 \newtoggle{Xlineflag@#1}
5648 \newtoggle{Xparindent@#1}
5649 \newtoggle{Xlemmadisablefontselection@#1}
5650 \csgdef{Xwrapcontent@#1}{}%
5651 \csgdef{Xbeforeinserting@#1}{}%
5652 \csgdef{Xhangindent@#1}{Opt}%
5653 \csgdef{Xragged@#1}{}%
5654 \csgdef{Xhsizetwocol@#1}{0.45 \hsize}%
5655 \csgdef{Xhsizethreecol@#1}{.3 \hsize}%
5656 \csgdef{Xcolalign@#1}{\raggedright}%
5657 \csgdef{Xnotenumfont@#1}{\normalfont}%
5658 \csgdef{Xnotefontsize@#1}{\footnotesize}%
5659 \csgdef{Xbhooknote@#1}{}%
5660 \csgdef{Xbhookgroup@#1}{}%
5661
5662 \csgdef{Xboxlinenum@#1}{Opt}%
5663 \csgdef{Xboxlinenumalign@#1}{L}%
5664
5665 \csgdef{Xboxstartlinenum@#1}{Opt}%
5666 \csgdef{Xboxendlinenum@#1}{Opt}%
5667
5668 \csgdef{Xboxsymlinenum@#1}{Opt}%
5669 \newtoggle{Xgroupbyline@#1}%
5670 \newtoggle{Xgroupbylineseparetwolines@#1}%
5671
5672 \newtoggle{Xnumberonlyfirstinline@#1}%
5673 \newtoggle{Xnumberonlyfirstintwolines@#1}%
5674
5675 \newtoggle{Xlinenumannotationonlyfirst@#1}%
5676 \newtoggle{Xlinenumannotationonlyfirstintwo@#1}%
5677
5678 \csgdef{Xtwolines@#1}{}%
5679 \csgdef{Xmorethantwolines@#1}{}%
5680 \csgdef{Xsublinesep@#1}{\fullstop}%
5681 \csgdef{Xpagelinesep@#1}{\csname Xsublinesep@#1\endcsname}%for
backward compatibility, call Xsublinesep@#1
5682 \newtoggle{Xtwolinesbutnotmore@#1}%
5683 \newtoggle{Xtwolinesonlyinsamepage@#1}%
5684 \newtoggle{Xonlypstart@#1}%
5685 \newtoggle{Xpstarteverytime@#1}%
```

```

5686 \newtoggle{Xpstart@#1}%
5687 \newtoggle{Xstanza@#1}%
5688 \csgdef{Xstanzaseparator@#1}{}%
5689
5690 \csgdef{Xsymlinenum@#1}{}%
5691 \csgdef{Xsymlinenumannotation@#1}{}%
5692
5693 \newtoggle{Xnonumber@#1}%
5694 \csgdef{Xbeforenumber@#1}{Opt}%
5695 \csgdef{Xtxtbeforenumber@#1}{}%
5696 \csgdef{Xafternumber@#1}{0.5em}%
5697 \newtoggle{Xnonbreakableafternumber@#1}%
5698 \csgdef{Xbeforenumber@#1}{\csuse{Xbeforenumber@#1}}%
5699 \csgdef{Xaftersymlinenum@#1}{\csuse{Xafternumber@#1}}%
5700 \csgdef{Xinplaceofnumber@#1}{1em}%
5701 \global\cslet{Xlemmaseparator@#1}{\rbracket}%
5702 \csgdef{Xbeforelemmaseparator@#1}{0em}%
5703 \csgdef{Xafterlemmaseparator@#1}{0.5em}%
5704 \csgdef{Xinplaceofflemmaseparator@#1}{1em}%
5705 \csgdef{Xbeforenotes@#1}{1.2em \@plus .6em \@minus .6em}%
5706 \csgdef{Xafterrule@#1}{Opt}%
5707
5708 \csgdef{Xtxtbeforenotes@#1}{%
5709 \newtoggle{Xtxtbeforenotes@#1@typeset}}%Not directly used by user,
but internal
5710 \newtoggle{Xtxtbeforenotesonlyonce@#1}%
5711
5712 \csgdef{Xmaxhnotes@#1}{0.8\vsz}%
5713 \newtoggle{Xnoteswidthliketwocolumns@#1}%
5714 \csgdef{Xparafootsep@#1}{}%
5715 \csgdef{Xafternote@#1}{1em plus .4em minus .4em}%
5716 \csgdef{Xlinrangeseparator@#1}{\endashchar}%
5717
5718 \csgdef{Xlemmafont@#1}{}%
5719 \csgdef{Xwraplemma@#1}{%
5720 \csgdef{Xwidth@#1}{\hsz}%
5721 \csgdef{Xwraplinenumannotation@#1}{\textsuperscript}%
5722 \csgdef{Xlinenumannotationposition@#1}{after}%
5723 \newtoggle{Xnoidenticallinenumannotation@#1}%
5724 %

```

XXI.3.2 Create inserts, needed to add notes in foot

As regards inserts, see chapter 15 of *The TeXbook* by D. Knuth.

```

5725 \expandafter\newinsert\csname #1footins\endcsname%
5726 \unless\ifnoledgroup%
5727 \expandafter\newinsert\csname mp#1footins\endcsname%
5728 \fi%
5729 %

```

XXI.3.3 Create commands for critical apparatus, \Afootnote, \Bfootnote etc.

Note the double # in command: it is because command it is made inside another command.

```

5730 \global\newbool{parapparatus@}\expandafter\newcommand\expandafter
5731 *}{\expandafter\newcommand}\csname #1footnote\endcsname[2][\{
5732 \if@edtext@secondarg%
5733 \ifledRcol%
5734 \ifcsstring{Xonlyside@#1}{L}{\
5735 led@error@note@called@onrightside{#1footnote}}}%
5736 \else%
5737 \ifcsstring{Xonlyside@#1}{R}{\
5738 led@error@note@called@onleftside{#1footnote}}}%
5739 \fi%
5740 \begingroup%
5741 \newcommand{\content}{##2}%
5742 \ifnumberedpar%
5743 \ifledRcol%
5744 \ifluatex%
5745 \footnotelang@lua[R]%
5746 \fi%
5747 \ifundefined{xpg@main@language}%if polyglossia
5748 {}%
5749 {\footnotelang@poly[R]}%
5750 \footnoteoptions@{R}{##1}{true}%
5751 \xright@appenditem{%
5752 \ifbool{indtl@innote}%
5753 {\unexpanded{\let\index\nindex}}%
5754 {}%
5755 \ifbool{indtl@notenumber}%
5756 {\unexpanded{\let\index\nindex}}%There is no note
5757 number... so
5758 {}%
5759 \noexpand\Xnote@true%
5760 \noexpand\prepare@Xprenotes{#1}%
5761 \noexpand\prepare@edindex@fornote{\ld@nums}%
5762 \unexpanded{\def\sw@list@inedtext}{\expandafter\
5763 unexpanded\expandafter{\sw@inthisedtext}}%The value of the \sw@inthisedtext
5764 of current \edtext will be pushed to \sw@list@inedtext when the notes are
5765 expanded.
5766 \noexpand\setcounter{stanzaR}{\the@c@stanzaR}%Save
5767 stanzaR counter for footnote
5768 \unexpanded{\def\@this@crossref@start}{\theedtext:
5769 start}%
5770 \unexpanded{\def\@this@crossref@end}{\theedtext:end}%
5771 \expandonce{\@beforeinsertofthisedtext}% Internal for
5772 now, no reason to make it public
5773 \noexpand\parse@annot\l@current@annotR|
5774 \noexpand\csuse{v#1footnote}{#1}%

```

```

5765         {{\l@d@nums}{\expandonce\@tag}{\expandonce\content}}
5766 %
5767         \noexpand\Xnote@false%
5768         \unexpanded{\advance\@edindex@fornote@m@ne}%
5769         \ifbool{indtl@innote}%
5770         {\unexpanded{\let\index\orig@@index}}%
5771         {}%
5772         \ifbool{indtl@notenumber}%
5773         {\unexpanded{\let\index\orig@@index}}%
5774         {}%
5775         } \to\inserts@listR
5776         \footnoteoptions@{R}{##1}{false}%
5777         \global\advance\insert@countR \@ne%
5778 \else%
5779         \ifluatex%
5780         \footnotelang@lua%
5781         \fi%
5782         \ifundefined{xpg@main@language}%if polyglossia
5783         {}%
5784         {\footnotelang@poly}%
5785         \footnoteoptions@{L}{##1}{true}%
5786         \xright@appenditem{%
5787         \ifbool{indtl@innote}%
5788         {\unexpanded{\let\index\nindex}}%
5789         {}%
5790         \ifbool{indtl@notenumber}%
5791         {\unexpanded{\let\index\nindex}}%There is no note
number... so
5792         {}%
5793         \noexpand\Xnote@true%
5794         \noexpand\prepare@Xprenotes{#1}%
5795         \noexpand\prepare@edindex@fornote{\l@d@nums}%
5796         \unexpanded{\def\sw@list@inedtext}{\expandafter\
unexpanded\expandafter{\sw@inthisedtext}}%The value of the \sw@inthisedtext
of current edtext will be pushed to \sw@list@inedtext when the notes are
expanded.
5797         \ifl@dpairing%
5798         \noexpand\setcounter{stanzaL}{\the\c@stanzaL}%Save
stanzaR counter for footnote
5799         \fi%
5800         \unexpanded{\def\@this@crossref@start}{\theedtext:
start}%
5801         \unexpanded{\def\@this@crossref@end}{\theedtext:end}%
5802         \expandonce{\@beforeinsertofthisedtext}%Internal for
now, no reason to make it public
5803         \noexpand\parse@annot\l@current@annot|%
5804         \noexpand\csuse{v#1footnote}%
5805         {#1}%
5806         {{\l@d@nums}{\expandonce\@tag}{\expandonce\content
}}%

```

```

5806 \noexpand\Xnote@false%
5807 \unexpanded{\advance\@edindex@fornote@m@ne}%
5808 \ifbool{indtl@innote}%
5809   {\unexpanded{\let\index\orig@@index}}%
5810   {%}
5811 \ifbool{indtl@notenumber}%
5812   {\unexpanded{\let\index\orig@@index}}%
5813   {%}
5814 }\to\inserts@list
5815 \global\advance\insert@count \@ne%
5816 \footnoteoptions@{L}{#1}{false}%
5817 \fi
5818 \else
5819   \csuse{v#1footnote}{#1}{0|0|0|0|0|0|0|0}{#1}%
5820 \fi%
5821 \endgroup%
5822 \else%
5823   \led@err@FootnoteNotInSecondArgEdtext{#1}%
5824 \fi%
5825 \ignorespaces%
5826 }
5827 %

```

Create counter used to determine on which page the previous note was called.

```

5828 \expandafter\newcount\csname #1prevpage@num\endcsname%
5829 \expandafter\newcount\csname #1prevpage@numR\endcsname%
5830 %

```

We need to be able to modify reledmac's footnote macros and restore their

```

5831 \global\csletcs{#1@@footnote}{#1footnote}
5832 %

```

XXI.3.4 Set standard display

```

5833 \Xarrangement@normal{#1}%
5834 %

```

End of for critical footnotes.

```

5835 \fi
5836 %

```

XXI.4 For familiar footnotes

Familiar footnotes are those which end with letters. We look for the `nofamiliar` option of `reledmac`.

```

5837 \unless\ifnofamiliar@
5838 %

```

XXI.4.1 Options

```

5839 \newtoggle{parindentX@#1}
5840 \csgdef{wrapcontentX@#1}{}%
5841 \csgdef{hangindentX@#1}{Opt}%
5842 \csgdef{beforeinsertingX@#1}{}%
5843 \csgdef{raggedX@#1}{}%
5844 \csgdef{hsizetwocolX@#1}{0.45 \hsize}%
5845 \csgdef{hsizethreecolX@#1}{.3 \hsize}%
5846 \csgdef{colalignX@#1}{\raggedright}%
5847 \csgdef{notenumfontX@#1}{\normalfont}%
5848 \csgdef{notefontsizeX@#1}{\footnotesize}%
5849 \csgdef{bhooknoteX@#1}{}%
5850 \csgdef{bhookgroupX@#1}{}%
5851 \csgdef{afterruleX@#1}{Opt}
5852 \csgdef{beforenotesX@#1}{1.2em \@plus .6em \@minus .6em}
5853 \csgdef{maxhnotesX@#1}{0.8\vsizex}%
5854 \newtoggle{noteswidthliketwocolumnsX@#1}%
5855 \csgdef{parafootsepX@#1}{}%
5856 \csgdef{afternoteX@#1}{1em plus.4em minus.4em}
5857 \csgdef{widthX@#1}{\hsizex}%
5858 \csgdef{txtbeforenotesX@#1}{}%
5859 \newtoggle{txtbeforenotesX@#1@typeset}%Not directly used by user,
but internal
5860 \newtoggle{txtbeforenotesonlyonceX@#1}%
5861 % End of for familiar footnotes.
5862 % \subsection{Create inserts, needed to add notes in foot}
5863 % As regards inserts, see chapter 15 of the TeXBook by D. Knuth.
5864 % \begin{macrocode}
5865 \expandafter\newinsert\csname footins#1\endcsname%
5866 \unless\ifnoledgroup@%
5867 \expandafter\newinsert\csname mpfootins#1\endcsname%
5868 \fi%
5869 %

```

XXI.4.2 Create tools for familiar footnotes (\footnoteX)

First, create the \footnoteX command. Note the double # in command: it is because a command is called inside another command.

```

5870
5871 \global\expandafter\newcommand\csname footnote#1\endcsname[2][]{%
5872 \begingroup%
5873 \prepare@prenotesX{#1}%
5874 \newcommand{\content}{##2}%
5875 %

```

If we are using the \csquotes package, we reset the quotation level.

```

5876 \ifdefined\csq@qllevel%
5877 \csq@qllevel=0\relax%
5878 \fi%

```

5879 %

If we are preparing parallel typesetting, we cannot just increase the footnote counter. Read `reledpar`'s handbook about that (V.1.2 p. 54). If we have a manual footnote mark, use it.

```
5880 \global\expandafter\advance\csname footnote#1@reading\
endcsname by \@ne%
5881 \ifstrepty{##1}{%
5882 \ifboolexpr{bool{l@dpairing} or bool{l@dprintingpages} or
bool{l@dprintingcolumns}}{%
5883 \ifcsdef{footnote#1@reading\the\csname footnote#1@reading
\endcsname=typeset}%
5884 {\setcounter{footnote#1}{\csuse{footnote#1@reading\the\
csname footnote#1@reading\endcsname=typeset}}}%
5885 {\setcounter{footnote#1}{\the\csname footnote#1@reading\
endcsname}}}%
5886 }{%
5887 \stepcounter{footnote#1}%
5888 }%
5889 }{}%
5890 %
```

We also have to check consistency with `\onlysideX` setting.

```
5891 \ifledRcol%
5892 \ifcsstring{onlysideX@#1}{L}{\
led@error@note@called@onrightside{footnote#1}}{}%
5893 \else%
5894 \ifcsstring{onlysideX@#1}{R}{\
led@error@note@called@onleftside{footnote#1}}{}%
5895 \fi%
5896 %
```

And now, the feature not depending of wether we are preparing parallel typesetting

```
5897 \ifstrepty{##1}%
5898 {\protected@csxdef{@thefnmark#1}{\csuse{thefootnote#1}}}%
5899 {\protected@csxdef{@thefnmark#1}{##1}}%
5900 \nottoggle{nomk@}%Nomk is set to true when using \
footnoteXnomk with \parpackage
5901 {\csuse{@footnotemark#1}}%
5902 {}%
5903 \ifluatex%
5904 \xdef\footnote@luatextextdir{\the\textdir}%
5905 \xdef\footnote@luatexpardir{\the\pardir}%
5906 \fi%
5907 \if@ledgroup%
5908 \led@set@index@fornote{#1}%
5909 \fi%
5910 \csuse{vfootnote#1}{#1}{\expandonce\content}{##1}\
m@mmf@prepare%
```

```

5911         \ifbool{indtl@innote}%
5912         {\let\index\orig@@index}%
5913         {}}%
5914         \ifbool{indtl@notenumber}%
5915         {\let\index\orig@@index}%
5916         {}}%
5917     \endgroup%
5918 }
5919 %

```

Then define the counters. The \TeX counter `footnoteX` is the only one manipulated by the user. This is the one which is printed. The \TeX counter `\footnoteX@reading` is increased at each footnote. It is used for hyperlinks, for using `hyperlink` package, and for getting the correct footnote number when using `parallel typesetting` (V.1.2 p. 54).

```

5920     \newcounter{footnote#1}
5921     \global\expandafter\renewcommand\csname thefootnote#1\endcsname{\
arabic{footnote#1}}
5922     \expandafter\newcount\csname footnote#1@reading\endcsname%
5923 %

```

Create counter used to determine on which page the previous note was called.

```

5924     \expandafter\newcount\csname prevpage#1@num\endcsname%
5925     \expandafter\newcount\csname prevpage#1@numR\endcsname%
5926 %

```

Add `\let\footnoteX\@gobble` to `\no@expands`.

```

5927     \expandafter\gappto\expandafter\no@expands\expandafter{\expandafter\
let\csname footnote#1\endcsname\@gobble}%
5928 %

```

And now, define `\footnoteXmark` and `\footnoteXtext`, equivalent to classical `\footnotemark` and `\footnotetext`.

```

5929     \expandafter\newcommand\csname footnote#1mark\endcsname[1] []{%
5930     \begingroup%
5931     \prepare@prenotesX{#1}%
5932     \ifstrempy{##1}{%
5933     \stepcounter{footnote#1}%
5934     }{%
5935     \setcounter{footnote#1}{##1}%
5936     }%
5937     \protected@csxdef{@thefnmark#1}{\csuse{thefootnote#1}}%
5938     \csuse{@footnotemark#1}%
5939     \m@mmf@prepare%
5940     \endgroup%
5941     }%
5942     \expandafter\newcommand\csname footnote#1text\endcsname[2] []{%
5943     \begingroup%
5944     \csuse{vfootnote#1}{#1}{\expandonce{##2}}{##1}%
5945     \endgroup%

```

```
5946 }%
5947 %
```

Do not forget to initialize the series.

```
5948 \arrangementX@normal{#1}%
5949 \fi
5950 %
```

XXI.5 The endnotes

Endnotes are commands like `\Xendnote`, where *X* is a series letter. First, we check for the `noend` options.

```
5951 \unless\ifnoend@
5952 %
```

XXI.5.1 The auxiliary file

`\l@d@Xend` Endnotes of all varieties are saved up in a file, one by series, typically named $\langle jobname \rangle.Xend$.
`\ifl@dend@X` `\l@d@end` is the output stream number for this file, and `\ifl@dend@X` is a flag that is
`\l@dend@Xtrue` true when the file is open.
`\l@dend@Xfalse`

```
5953 \expandafter\newwrite\csname l@d@#1end\endcsname%
5954 \expandafter\newif\csname ifl@dend@#1\endcsname%
5955 %
```

XXI.5.2 The main macro

The `\Xendnote` macro functions to write one endnote to the `.Xend` file. We change `\newlinechar` so that in the file every space becomes the start of a new line; this generally ensures that a long note does not exceed restrictions on the length of lines in files.

```
5956 \global\expandafter\newcommand\csname #1endnote\endcsname[2][1,
5957 usedefault]{%
5958 \bgroup%
5959 \newlinechar='40%
5960 \global\@noneed@Footnotetrue%
5961 \newcommand{\content}{##2}%
5962 \stepcounter{labidx}%
5963 \expandafter\immediate\expandafter\write\csname l@d@#1end\endcsname{%
5964 \unexpanded{\def\sw@list@inedtext}%
5965 {\expandafter\unexpanded\expandafter{\sw@inthisedtext}}%
5966 \@percentchar\space%Explicit space, to add a linebreak in the
output file
5967 \noexpand\parse@annot\l@current@annot|\@percentchar\space%
5968 \expandafter\string\csname #1end\endcsname%
```

```

5969         {\ifnumberedpar@l@d@nums\fi}%
5970         {\ifnumberedpar@expandonce@tag\fi}%
5971         {\expandonce\content}%
5972         {#1}%
5973         {\unexpanded{##1}}%
5974         {\ifledRcol R\else L\fi}%
5975         {\theedtext}%
5976         \@percentchar%
5977     }%
5978     \egroup%
5979     \ignorespaces%
5980 }%
5981 %

```

XXI.5.3 Tools

The `\Xtoendnotes` command inserts any arbitrary content into the endnote file. It is an alias of the more generalist `\addtoendnotes`

```

5982     \global\expandafter\newcommand\csname #1toendnotes\endcsname[1]{%
5983         \toendnotes[#1]{##1}%
5984     }%
5985
5986     \expandafter\WithSuffix\expandafter\newcommand\csname #1toendnotes\
5987     endcsname*[1]{%
5988         \toendnotes*[#1]{##1}%
5989     }%
5990
5991 %

```

XXI.5.4 Internal commands

`\Xendnote` commands called `\Xend` commands on to the endnote file; these are analogous to the various `footfmt` commands above, and they take the same arguments. When we process this file, we want to pick out the notes of one series and ignore all the rest. To do that, we equate the end command for the series we want to `\endprint`, and leave the rest equated to `\@gobbleseven`, which just skips over its seven arguments.

```

5992     \global\cslet{#1end}{\@gobbleseven}
5993
5994 %

```

We need to store the number of times `\doendnotesbysection` is called for one series.

```

5995     \global\expandafter\newcount\csname #1end@bysection\endcsname%
5996 %

```

XXI.5.5 The options

```

5997 \csgdef{Xendwraplemma@#1}{%
5998 \csgdef{Xendwrapcontent@#1}{}%
5999 \csgdef{Xendtwolines@#1}{}%
6000 \csgdef{Xendmorethantwolines@#1}{}%
6001 \newtoggle{Xendtwolinesbutnotmore@#1}{}%
6002 \newtoggle{Xendtwolinesonlyinsamepage@#1}{}%
6003 \newtoggle{Xendlemmadisablefontselection@#1}{}%
6004 \csgdef{Xendnotenumfont@#1}{\normalfont}%
6005 \csgdef{Xendnotefontsize@#1}{\footnotesize}%
6006 \csgdef{Xendbhooknote@#1}{}%
6007
6008 \csgdef{Xendsublinesep@#1}{\fullstop}%
6009
6010 \csgdef{Xendbeforenumber@#1}{Opt}
6011 \csgdef{Xendafternumber@#1}{0.5em}
6012
6013 \csgdef{Xendboxlinenum@#1}{Opt}%
6014 \csgdef{Xendboxlinenumalign@#1}{L}%
6015
6016 \csgdef{Xendboxstartlinenum@#1}{Opt}%
6017 \csgdef{Xendboxendlinenum@#1}{Opt}%
6018
6019 \csgdef{Xendlemmaseparator@#1}{}%
6020 \csgdef{Xendbeforelemmaseparator@#1}{Oem}%
6021 \csgdef{Xendafterlemmaseparator@#1}{0.5em}%
6022 \csgdef{Xendinplaceoflemmaseparator@#1}{0.5em}%
6023
6024 \newtoggle{Xendparagraph@#1}%
6025 \csgdef{Xendafternote@#1}{1em plus.4em minus.4em}%
6026 \csgdef{Xendsep@#1}{}%
6027
6028 \csgdef{Xendinplaceofnumber@#1}{Opt}%
6029 \newtoggle{Xendnonumber@#1}%
6030
6031 \csgdef{Xendhangindent@#1}{Opt}%
6032
6033 \newtoggle{Xendnumberonlyfirstinline@#1}%
6034 \newtoggle{Xendnumberonlyfirstintwolines@#1}%
6035
6036 \newtoggle{Xendlinenumannotationonlyfirst@#1}%
6037 \newtoggle{Xendlinenumannotationonlyfirstintwo@#1}%
6038
6039 \csgdef{Xendbeforesymlinenum@#1}{\csuse{Xendbeforenumber@#1}}%
6040 \csgdef{Xendaftersymlinenum@#1}{\csuse{Xendafternumber@#1}}%
6041
6042 \csgdef{Xendsymlinenum@#1}{}%
6043 \csgdef{Xendsymlinenumannotation@#1}{}%
6044

```

```

6045 \csgdef{Xendboxsymlinenum@#1}{Opt}%
6046
6047 \csgdef{Xendbhooklinenum@#1}{}%
6048 \csgdef{Xendehooklinenum@#1}{}%
6049 \csgdef{Xendbhookinplaceofnumber@#1}{}%
6050 \csgdef{Xendehookinplaceofnumber@#1}{}%
6051
6052 \csgdef{Xendlinangeseparator@#1}{\endashchar}%
6053
6054 \csgdef{Xendbeforepagenumber@#1}{p.}%
6055 \csgdef{Xendafterpagenumber@#1}{) }%
6056 \csgdef{Xendlineprefixsingle@#1}{}%
6057 \csgdef{Xendlineprefixmore@#1}{}%
6058
6059 \newtoggle{Xendlineflag@#1}
6060
6061 \csgdef{Xendlemmafont@#1}{}%
6062
6063 \csgdef{Xendlinenumannotationposition@#1}{after}%
6064 \csgdef{Xendwraplinenumannotation@#1}{\textsuperscript}%
6065 \newtoggle{Xendnoidenticallinenumannotation@#1}%
6066
6067 \newtoggle{Xendpagenumberonlyfirst@#1}%
6068 \newtoggle{Xendpagenumberonlyfirstifsingle@#1}%
6069 \newtoggle{Xendpagenumberonlyfirstintwo@#1}%
6070 \csgdef{Xendsympagenum@#1}{}%
6071 \csgdef{Xendinplaceofpagenumber@#1}{Opt}%
6072
6073 \csgdef{Xendtxtbeforenotes@#1}{}%
6074 \newtoggle{Xendfirstnote@#1}%Not a hook, but used to apply
Xendtxtbeforenotes
6075
6076 %

```

End of endnotes declaration

```

6077 \fi%
6078 %

```

Dump series in \@series

```

6079 \listxadd{\@series}{#1}
6080 }
6081 }% End of \newseries
6082 %

```

XXI.6 Init standards series (A,B,C,D,E)

```

6083 \expandafter\newseries\expandafter{\default@series}
6084 %

```

XXII Setting series display

XXII.1 Change series order

\seriesatbegin `\seriesatbegin{⟨s⟩}` changes the order of series, to put the series `⟨s⟩` at the beginning of the list. The series can be the result of a command.

```
6085 \newcommand{\seriesatbegin}[1]{%
6086   \StrDel{\@series}{#1}[\@series]%
6087   \edef\@new{}%
6088   \listadd{\@new}{#1}%
6089   \listadd{\@new}{\@series}%
6090   \xdef\@series{\@new}%
6091 }
6092 %
```

\seriesatend And `\seriesatend` moves the series to the end of the list.

```
6093 \newcommand{\seriesatend}[1]{%
6094   \StrDel{\@series}{#1}[\@series]%
6095   \edef\@new{}%
6096   \listadd{\@new}{\@series}%
6097   \listadd{\@new}{#1}%
6098   \xdef\@series{\@new}%
6099 }
6100 %
```

XXII.2 Test series order

\ifseriesbefore `\ifseriesbefore{⟨seriesA⟩}{⟨seriesB⟩}{⟨true⟩}{⟨false⟩}` expands to `⟨true⟩` if `⟨seriesA⟩` is printed before `⟨seriesB⟩`, or to `⟨false⟩` otherwise.

```
6101 \newcommand{\ifseriesbefore}[4]{%
6102   \StrPosition{\@series}{#1}[\@first]%
6103   \StrPosition{\@series}{#2}[\@second]%
6104   \ifnumgreater{\@second}{\@first}{#3}{#4}%
6105 }
6106 %
```

XXII.2.1 Get the first series

In some specific case, we need to know the first series of the list of series.

```
\@getfirstseries07 \newcommand{\@getfirstseries}{%
6108   \ifdefempty{\@series}%
6109   {\xdef\@firstseries{}}%
6110   {\StrChar{\@series}{1}[\@firstseries]}%
6111 }%
6112 %
```

XXII.3 Series setting

XXII.3.1 General way of working

The setting's command (like `\numberonlyfirstinline`), also called “hooks” can be divided in two categories: those which require a string values and those which require a boolean value. The first category includes those which require a length value, because we store the length's expression send by user and we evaluate it only in the commands which requires to know the setting. The second category require boolean value only when it is set to FALSE. Otherwise, we understand the insinuated value is TRUE.

For each “hook” command, we store the value in commands (first category) or a `etoolbox`'s toggle (second category) which names are in the form `\<hook>@<series>`. For example, when calling `\twolines{<sq.>}`, we store `sq.` in commands `\twolines@A`, `\twolines@B`, `\twolines@C`... for each series defined for use with `reledmac`, or, if the [`<series>`] optional argument was send, for each series of this argument.

These values are tested in some specific places, scattered in all the code, depending of their effects. The default values are defined by the `\newseries@` command.

In order to prevent code duplication, we have created some generic commands. Some of them change the value of any hook send as argument. Some other, getting a hook name, generate the user level commands.

XXII.3.2 Tools to set options

`\settoggle@series` `\settoggle@series{<series>}{<toggle>}{<value>}` is a generic command to switch toggles for some series. The arguments are:

- #1 (mandatory): the series for which the hooks should be set. If empty, all the series will be affected.
- #2 (mandatory): the name of the hook.
- #3 (mandatory): the new value of toggle (true or false).
- #4 (optional): if equal to `reload`, reload the footnote setting (call again `\Xarrangement` or `\arrangementX` or ... depending of the footnote display).
- #5 (optional): if not empty, and if #1 is empty, change the hook setting for pseudo-series, as `appref`.

```

6113 \newcommandx{\settoggle@series}[5][4,5,usedefault]{%
6114   \def\do##1{%
6115     \global\settoggle{#2@##1}{#3}%
6116     \ifstrequal{#4}{critical}{
6117       \csuse{Xarrangement@}\csuse{series@display##1}{##1}%
6118     }{
6119       \ifstrequal{#4}{familiar}{
6120         \csuse{arrangementX@}\csuse{series@displayX##1}{##1}%
6121       }{
6122       }%
6123     \ifstreempty{#1}{%

```

```

6124         \dolistloop{\@series}%
6125         \ifstrempy{#5}{}{%
6126             \docsvlist{#5}%
6127         }
6128     }%
6129     {%
6130         \docsvlist{#1}%
6131     }%
6132 }
6133 %

```

`\setcommand@series` `\setcommand@series{<series>}{<command>}{<value>}` is a generic command to store a hook's value into commands specific to some series. The arguments are:

- #1 (mandatory): the series for which the hooks should be set. If empty, all the series will be affected.
- #2 (mandatory): the name of the hook.
- #3 (mandatory): the new value of the hook/command.
- #4 (optional): if equal to `reload`, reload the footnote setting (call `\footnormal` or `\footparagraph` or ... depending of the footnote display).
- #5 (optional): if not empty, and if #1 is empty, change the hook setting for pseudo-series, as `appref`.

```

6134 \newcommandx{\setcommand@series}[5][4,5,usedefault]{%
6135     \def\do##1{
6136         \csgdef{#2@##1}{#3}
6137         \ifstrequal{#4}{critical}{%
6138             \csuse{Xarrangement@}\csuse{series@display##1}{##1}%
6139         }{}
6140         \ifstrequal{#4}{familiar}{%
6141             \csuse{arrangementX@}\csuse{series@displayX##1}{##1}%
6142         }{}%
6143     }%
6144     \ifstrempy{#1}{%
6145         \dolistloop{\@series}%
6146         \ifstrempy{#5}{}{%
6147             \docsvlist{#5}
6148         }
6149     }%
6150     {%
6151         \docsvlist{#1}%
6152     }%
6153 }%
6154 %

```

XXII.3.3 Tools to generate options commands

`\newhookcommand@series` `\newhookcommand@series\command names` is a generic command to add new commands for hooks, like `\Xhsizetwocol`. The first argument is the name of the hook, the second a comma-separated list of pseudo-series where the hook can be used, like `appref` in the case of `\Xtwolines`. The second argument is also used to create commands named `\<hookname><pseudoserries>`, like `\Xtwolinesappref`.

```

6155 \newcommandx{\newhookcommand@series}[2][2,usedefault]{%
6156   \global\expandafter\newcommand\expandafter*\csname #1\endcsname[2][]{%
6157     \setcommand@series{##1}{#1}{##2}[][#2]%
6158   }%
6159   \ifstrempy{#2}{-}{%
6160     \def\do##1{%
6161       \global\expandafter\newcommand\expandafter*\csname #1##1\endcsname
6162       [1]{%
6163         \csuse{#1}[##1]{####1}%
6164       }%
6165     }%
6166     \docsvlist{#2}%
6167   }%
6168 }%

```

`\newhooktoggle@series` `\newhooktoggle@series\command names` is a generic command to add new commands for a new toggle hook, like `\Xnumberonlyfirstinline`. The second argument is also used to create commands named `\<hookname><pseudoserries>`, like `\Xtwolinesbutnotmoreappref`.

```

6169 \newcommandx{\newhooktoggle@series}[2][2,usedefault]{%
6170   \global\expandafter\newcommandx\expandafter*\csname #1\endcsname[2][1,2={
6171     true},usedefault]{%
6172     \settoggle@series{##1}{#1}{##2}[][#2]%
6173   }%
6174   \ifstrempy{#2}{-}{%
6175     \def\do##1{%
6176       \global\expandafter\newcommand\expandafter*\csname #1##1\endcsname{%
6177         \csuse{#1}[##1]%
6178       }%
6179     }%
6180     \docsvlist{#2}%
6181   }%
6182 }%

```

`\newhooktoggle@series@reload` `\newhookcommand@toggle@reload` does the same thing as `\newhooktoggle@series` but the commands created by this macro also reload the series arrangement, depending of type or notes

```

6183 \newcommand{\newhooktoggle@series@reload}[2]{%

```

```

6184 \global\expandafter\newcommandx\expandafter*\csname #1\endcsname[2][1,2={
true},usedefault]{%
6185 \settoggle@series{##1}{#1}{##2}[#2]%
6186 }%
6187 }%
6188 %

```

`\newhookcommand@series@reload` `\newhookcommand@series@reload` does the same thing as `\newhookcommand@series` but the commands created by this macro also reload the series' arrangement.

```

6189 \newcommand{\newhookcommand@series@reload}[2]{%
6190 \global\expandafter\newcommand\expandafter*\csname #1\endcsname[2][1,2={
6191 \setcommand@series{##1}{#1}{##2}[#2]%
6192 }%
6193 }
6194 %

```

XXII.3.4 Options for critical notes

Before generating the commands that are used to set the critical notes, such as `\Xnumberonlyfirstinline`, `\Xlemmaseparator` and the like, we check the `nocritical` option.

```

6195 \unless\ifnocritical@
6196 \newhookcommand@series{Xwrapcontent}%
6197 \newhookcommand@series{Xbeforeinserting}%
6198 \newhookcommand@series{Xlemmafont}%
6199 \newhookcommand@series{Xwraplemma}%
6200 \newhooktoggle@series{Xparindent}
6201 \newhookcommand@series{Xhangindent}
6202 \newhookcommand@series{Xragged}
6203 \newhookcommand@series{Xhsizetwocol}
6204 \newhookcommand@series{Xhsizethreecol}
6205 \newhookcommand@series{Xcolalign}%
6206 \newhookcommand@series{Xnotenumfont}
6207 \newhookcommand@series{Xbhooknote}
6208 \newhookcommand@series@reload{Xbhookgroup}{critical}
6209 \newhookcommand@series{Xboxsymlinenum}%
6210 \newhookcommand@series{Xsymlinenum}
6211 \newhookcommand@series{Xsymlinenumannotation}%
6212 \newhookcommand@series{Xbeforenumber}
6213 \newhookcommand@series{Xtxtbeforenumber}
6214 \newhookcommand@series{Xafternumber}
6215 \newhookcommand@series{Xbeforesymlinenum}
6216 \newhookcommand@series{Xaftersymlinenum}
6217 \newhookcommand@series{Xinplaceofnumber}
6218 \newhookcommand@series{Xlemmaseparator}
6219 \newhookcommand@series{Xbeforelemmaseparator}
6220 \newhookcommand@series{Xafterlemmaseparator}
6221 \newhookcommand@series{Xinplaceoflemmaseparator}

```

```

6222 \newhookcommand@series{Xtxtbeforenotes}
6223 \newhooktoggle@series{Xtxtbeforenotesonlyonce}%
6224 \newhookcommand@series@reload{Xafterrule}{critical}
6225 \newhooktoggle@series{Xnumberonlyfirstinline}
6226 \newhooktoggle@series{Xnumberonlyfirstintwolines}
6227 \newhooktoggle@series{Xlinenumannotationonlyfirst}%
6228 \newhooktoggle@series{Xlinenumannotationonlyfirstintwo}%
6229 \newhooktoggle@series{Xgroupbyline}%
6230 \newhooktoggle@series{Xgroupbylineseparetwolines}%
6231 \newhooktoggle@series{Xnonumber}
6232 \newhooktoggle@series{Xpstart}
6233 \newhooktoggle@series{Xpstarteverytime}%
6234
6235 \newhooktoggle@series{Xstanza}%
6236 \newhookcommand@series{Xstanzaseparator}%
6237
6238 \newhooktoggle@series{Xonlypstart}
6239 \newhooktoggle@series{Xnonbreakableafternumber}
6240 \newhooktoggle@series{Xlemmadisablefontselection}
6241 \newhookcommand@series@reload{Xmaxhnotes}{critical}
6242 \newhookcommand@series@reload{Xbeforenotes}{critical}
6243 \newhooktoggle@series@reload{Xnoteswidthliketwocolumns}{critical}%
6244 \newhookcommand@series@reload{Xnotefontsize}{critical}
6245
6246 \newhookcommand@series{Xboxlinenum}%
6247 \newhookcommand@series{Xboxlinenumalign}%
6248
6249 \newhookcommand@series{Xboxstartlinenum}%
6250 \newhookcommand@series{Xboxendlinenum}%
6251
6252 \newhookcommand@series{Xafternote}%
6253 \newhookcommand@series{Xparafootsep}
6254 \newhookcommand@series@reload{Xwidth}{critical}%
6255
6256 \ifundef{Xhsize}%
6257 {%
6258   \newcommandx{Xhsize}[2][1,usedefault]{%
6259     \led@warning@Xhsize@deprecated%
6260     \Xwidth[#1]{#2}%
6261   }%
6262 }%
6263 {}%
6264 \fi
6265 %

```

Now, hooks for critical notes which also apply to crossreferencing and line numbering at the sides of the page.

```

6266 \newhooktoggle@series{Xlineflag}[appref,SEref]
6267 \newhookcommand@series{Xtwolines}[appref,SEref]
6268 \newhookcommand@series{Xmorethantwolines}[appref,SEref]

```

```

6269 \newhookcommand@series{Xsublinesep}[appref,Seref,side]%
6270 \newhookcommand@series{Xpagelinesep}[appref,Seref,side]%
6271 \newhooktoggle@series{Xtwolinesbutnotmore}[appref,Seref]
6272 \newhooktoggle@series{Xtwolinesonlyinsamepage}[appref,Seref]
6273 \newhookcommand@series{Xlinerrangeseparator}[appref,Seref]
6274 \newhookcommand@series{Xlinenumannotationposition}[side,appref,Seref]%
6275 \newhookcommand@series{Xwraplinenumannotation}[side,ref,appref,Seref]%
6276 \newhooktoggle@series{Xnoidenticallinenumannotation}[side,ref,appref,Seref]
6277 %

```

XXII.3.5 Options for familiar notes

Before generating the optional commands for familiar notes, we check the `\nofamiliar` option.

```

6278 \unless\ifnofamiliar@
6279   \newhookcommand@series{wrapcontentX}%
6280   \newhookcommand@series{beforeinsertingX}%
6281   \newhooktoggle@series{parindentX}
6282   \newhookcommand@series{hangindentX}
6283   \newhookcommand@series{raggedX}
6284   \newhookcommand@series{hsizetwocolX}
6285   \newhookcommand@series{hsizethreecolX}
6286   \newhookcommand@series{colalignX}%
6287   \newhookcommand@series{notenumfontX}
6288   \newhookcommand@series{bhooknoteX}
6289   \newhookcommand@series@reload{bhookgroupX}{familiar}
6290   \newhookcommand@series@reload{beforenotesX}{familiar}
6291   \newhookcommand@series@reload{maxhnotesX}{familiar}
6292   \newhooktoggle@series@reload{noteswidthliketwocolumnsX}{familiar}%
6293   \newhookcommand@series@reload{afterruleX}{familiar}
6294   \newhookcommand@series@reload{notefontsizeX}{familiar}
6295   \newhookcommand@series{afternoteX}
6296   \newhookcommand@series{parafootsepX}
6297   \newhookcommand@series{txtbeforenotesX}%
6298   \newhooktoggle@series{txtbeforenotesonlyonceX}%
6299   \newhookcommand@series@reload{widthX}{familiar}%
6300   \ifundef{\hsizeX}%
6301     {%
6302       \newcommandx{\hsizeX}[2][1,usedefault]{%
6303         \led@warning@hsizeX@deprecated%
6304         \widthX[#1]{#2}%
6305       }%
6306     }%
6307   {}%
6308 \fi
6309 %

```

XXII.3.6 Options for endnotes

Before generating the commands that are used to set the endnotes, such as `\Xnumberonlyfirstinline`, `\Xlemmaseparator+` and the like, we check the `noend` option.

```

6310 \unless\ifnoend@
6311   \newhookcommand@series{Xendwraplemma}
6312   \newhookcommand@series{Xendwrapcontent}
6313   \newhookcommand@series{Xendnotenumfont}
6314   \newhookcommand@series{Xendlemmafont}%
6315   \newhookcommand@series{Xendbhooknote}
6316
6317   \newhookcommand@series{Xendboxlinenum}%
6318   \newhookcommand@series{Xendboxlinenumalign}%
6319
6320   \newhookcommand@series{Xendboxstartlinenum}%
6321   \newhookcommand@series{Xendboxendlinenum}%
6322
6323   \newhookcommand@series{Xendnotefontsize}
6324   \newhooktoggle@series{Xendlemmadisablefontselection}
6325   \newhookcommand@series{Xendlemmaseparator}
6326   \newhookcommand@series{Xendbeforelemmaseparator}
6327   \newhookcommand@series{Xendafterlemmaseparator}
6328   \newhookcommand@series{Xendinplaceoflemmaseparator}
6329
6330   \newhookcommand@series{Xendbeforenumber}%
6331   \newhookcommand@series{Xendafternumber}%
6332
6333   \newhooktoggle@series{Xendparagraph}
6334   \newhookcommand@series{Xendafternote}
6335   \newhookcommand@series{Xendsep}
6336
6337   \newhookcommand@series{Xendinplaceofnumber}%
6338   \newhooktoggle@series{Xendnonumber}%
6339
6340   \newhooktoggle@series{Xendnumberonlyfirstinline}%
6341   \newhooktoggle@series{Xendnumberonlyfirstintwolines}%
6342
6343   \newhooktoggle@series{Xendlinenumannotationonlyfirst}%
6344   \newhooktoggle@series{Xendlinenumannotationonlyfirstintwo}%
6345
6346   \newhookcommand@series{Xendsymlinenum}%
6347   \newhookcommand@series{Xendbeforesymlinenum}%
6348   \newhookcommand@series{Xendaftersymlinenum}%
6349   \newhookcommand@series{Xendboxsymlinenum}%
6350
6351   \newhookcommand@series{Xendsymlinenumannotation}%
6352
6353   \newhookcommand@series{Xendbhooklinenum}%
6354   \newhookcommand@series{Xendahooklinenum}%

```

```

6355 \newhookcommand@series{Xendbhookinplaceofnumber}%
6356 \newhookcommand@series{Xendahookinplaceofnumber}%
6357
6358 \newhookcommand@series{Xendhangindent}%
6359
6360 \newhooktoggle@series{Xendpagenumberonlyfirst}%
6361 \newhooktoggle@series{Xendpagenumberonlyfirstifsingle}%
6362 \newhooktoggle@series{Xendpagenumberonlyfirstintwo}%
6363 \newhookcommand@series{Xendsympagenum}%
6364 \newhookcommand@series{Xendinplaceofpagenumber}%
6365
6366 \newhookcommand@series{Xendtxtbeforenotes}%
6367
6368 \fi
6369 \newhooktoggle@series{Xendlineflag}[apprefwithpage,SErefwithpage]
6370 \newhookcommand@series{Xendtwolines}[apprefwithpage,SErefwithpage]
6371 \newhookcommand@series{Xendmoreethantwolines}[apprefwithpage,SErefwithpage]
6372 \newhooktoggle@series{Xendtwolinesbutnotmore}[apprefwithpage,SErefwithpage]
6373 \newhooktoggle@series{Xendtwolinesonlyinsamepage}[apprefwithpage,
SErefwithpage]
6374 \newhookcommand@series{Xendlinerangeseparator}[apprefwithpage,SErefwithpage
]
6375 \newhookcommand@series{Xendbeforepagenumber}[apprefwithpage,SErefwithpage,
SErefonlypage]
6376 \newhookcommand@series{Xendafterpagenumber}[apprefwithpage,SErefwithpage]
6377 \newhookcommand@series{Xendlineprefixsingle}[apprefwithpage,SErefwithpage]
6378 \newhookcommand@series{Xendlineprefixmore}[apprefwithpage,SErefwithpage]
6379 \newhookcommand@series{Xendsublinesep}[apprefwithpage,SErefwithpage]
6380
6381 \newhookcommand@series{Xendlinenumannotationposition}[apprefwithpage,
SErefwithpage]%
6382 \newhookcommand@series{Xendwraplinenumannotation}[apprefwithpage,
SErefwithpage]%
6383 \newhooktoggle@series{Xendnoidenticallinenumannotation}[apprefwithpage,
SErefwithpage]%
6384 %

```

XXII.4 Hooks for a particular footnote

`\newhooktoggle@specific` `\newhooktoggle@specific` is a generic command to create boolean hook specific to a note.

```

6385 \newcommand{\newhooktoggle@specific}[1]{%
6386   \newtoggle{#1}%
6387   \listgadd{\hooktoggle@specific}{#1}%
6388   \define@key[mac]{truefootnoteoption}{#1}[]{\global\settoggle{#1}{true}}%
When enabling footnote option
6389   \define@key[mac]{falsefootnoteoption}{#1}[]{\global\settoggle{#1}{false}
}}

```

```
6390 }
6391 %
```

\newhookarg@specific `\newhookarg@specific` is a generic command to create argumen hook specific to a note.

```
6392 \newcommand{\newhookarg@specific}[1]{%
6393   \listgadd{\hookarg@specific}{#1}%
6394   \define@key[mac]{truefootnoteoption}{#1}{\csgdef{#1@}{##1}}%When enabling
   footnote option
6395   \define@key[mac]{falsefootnoteoption}{#1}{\global\csundef{#1@}}%When
   disabling footnote option
6396 }
6397 %
```

\hooktoggle@specific The `\add@hooktoggle@specific@to@cs` macro stores to a macro all the current values of hook toggle specific to a command. It is useful for the `\Xgroupbyline` option, which does not immediately add notes to the inserts list. It uses the `\hooktoggle@specific` list.

```
6398 \def\hooktoggle@specific{%
6399 \newcommand{\add@hooktoggle@specific@to@cs}[1]{%
6400   \def\do##1{%
6401     \iftoggle{##1@}{%
6402       \ifcsdef{#1}{%
6403         \csgappto{#1}{\toggletrue{##1@}}%
6404       }{%
6405         \csgdef{#1}{\toggletrue{##1@}}%
6406       }%
6407     }{%
6408       \ifcsdef{#1}{%
6409         \csgappto{#1}{\togglefalse{##1@}}%
6410       }{%
6411         \csgdef{#1}{\togglefalse{##1@}}%
6412       }%
6413     }%
6414   }%
6415   \dolistloop{\hooktoggle@specific}%
6416 }%
6417 %
```

\hookarg@specific The same, but for optional argument of critical footnotes with assigned value.

```
6418 \def\hookarg@specific{%
6419 \newcommand{\add@hookarg@specific@to@cs}[1]{%
6420   \def\do##1{%
6421     \ifcsvoid{##1@}{%
6422       \ifcsdef{#1}{%
6423         \csxappto{#1}{%
6424           \noexpand\csdef%
```

```

6425         {##1@}{\csname##1@endcsname}%
6426     }%
6427 }{%
6428     \csxdef{#1}{%
6429         \noexpand\csdef%
6430             {##1@}{\csname##1@endcsname}%
6431         }%
6432     }%
6433 }%
6434 }%
6435 \dolistloop{\hookarg@specific}%
6436 }%
6437 %

```

And now, we define some hooks specific to a note.

```

6438 \newhooktoggle@specific{fulllines}%
6439 \newhooktoggle@specific{nonum}
6440 \newhooktoggle@specific{nosep}
6441 \newhooktoggle@specific{noprefix}%
6442 \newhooktoggle@specific{prefixmore}%
6443 \newhookarg@specific{linrangesep}
6444 %

```

linrangesep@ \linrangesep@ is defined by the option `linrangesep` of critical notes to change temporarily the line range separator for a specific line. As we have to define it before typesetting the line and undefine it after, we use the family of `xkeyval` package's key.

```

6445 %

```

\nomk@ \nomk@ toggle is used by `reledpar` to remove the footnote mark in the text when using `\footnoteXmk`. Read `reledpar` handbook.

```

6446 \newtoggle{nomk@}%
6447 %

```

XXII.5 Alias

\Xnolemmaseparator \Xnolemmaseparator[*series*] is just an alias for `\Xlemmaseparator[series]{}`.

```

6448 \newcommandx*{\Xnolemmaseparator}[1][1]{\Xlemmaseparator[#1]}
6449 %

```

XXIII Output routine

Now we begin the output routine and associated things.

XXIII.1 Extra footnotes output

With luck we might only have to change `\@makecol` and `\@reinserts` of \LaTeX 's kernel. Since `reledmac`, we use `etoolbox`'s patching commands instead of overriding. It should provides better compatibility with other package which modify these commands

`\l@ddoxtrafeet` `\l@ddoxtrafeet` is the code extending `\@makecol` to cater for the extra `reledmac` feet. We have two categories of extra footnotes. By default, we order the footnote inserts so that the regular footnotes of \LaTeX are first, then familiar familiar footnotes and finally the critical footnotes.

```

6450 \newcommand*{\l@ddoxtrafeet}{%
6451   \IfStrEq{familiar-critical}{\@fnpos}
6452     {\do@feetX\do@Xfeet}%
6453   {%
6454     \IfStrEq{critical-familiar}{\@fnpos}%
6455       {\do@Xfeet\do@feetX}%
6456     {%
6457       \setbox\@outputbox \vbox{%
6458         \unvbox\@outputbox%
6459         \do@feet@custom@order}{\@fnpos}%
6460       }%
6461     }%
6462   }%
6463 }%
6464
6465 %

```

`\do@feet@custom@order` `\do@feet@custom@order` is called when `\@fnpos` is neither 'familiar-critical', nor 'critical-familiar', that is, when the order is more complex. In this case, people must define the order for all footnote series. If they don't, \LaTeX could perform an infinite run.

```

6466 \newcommand{\do@feet@custom@order}[2]{%
6467   \def\do##1{%
6468     \edef\@notesseries{\@firstoftwo##1}%
6469     \edef\@notetype{\@secondoftwo##1}%
6470     \ifdefstring{\@notetype}{critical}%
6471       {\csuse{#1append@Xnotes}{\@notesseries}}%
6472     {\ifdefstring{\@notetype}{familiar}%
6473       {\csuse{#1append@notesX}{\@notesseries}}%
6474     }%
6475   }%
6476 }%
6477 \expandafter\docsvlist\expandafter{#2}%
6478 }%
6479 %

```

`\do@Xfeet` `\do@Xfeet` is the code extending `\@makecol` to cater to the extra critical feet.

```

6480 \newcommand*{\do@Xfeet}{%

```

```

6481 \setbox\@outputbox \vbox{%
6482 \unvbox\@outputbox
6483 \@opXfeet}}
6484 %

```

`\@opXfeet` The extra critical feet to be added to the output. . A macro which appends critical notes to the output's routine, also adding vertical space before notes

`\append@Xnotes`

`\print@Xnotes`

```

6485 \newcommand{\append@Xnotes}[1]{%
6486 \ifvoid\csuse{#1footins}\else%
6487 \global\skip\csuse{#1footins}=\csuse{Xbeforenotes@#1}%
6488 \global\advance\skip\csuse{#1footins} by\csuse{Xafterterrule@#1}%
6489 \print@Xnotes{#1}%
6490 \fi%
6491 }%
6492 %

```

The normal way to add one series, `\print@Xnotes`, is replaced by `reledpar` when using `\Pages`.

```

6493 \newcommand\print@Xnotes[1]{%
6494 \xdef\@currentseries{#1}%
6495 \csuse{#1footstart}{#1}%
6496 \csuse{#1footgroup}{#1}%
6497 }%
6498 %

```

We print all series of notes by looping on them. We check before printing them that they are not voided.

```

6499 \newcommand*{\@opXfeet}{%
6500 \unless\ifnocritical@%
6501 \gdef\firstXseries@{}%
6502 \def\do##1{%
6503 \append@Xnotes{##1}%
6504 }%
6505 \dolistloop{\@series}%
6506 \fi%
6507 }%
6508 %

```

`\l@ddodoreintrafeet` `\l@ddodoreintrafeet` is the code catering for the extra footnotes within `\@reinserts`. We use the same category and ordering as in `\l@ddoxtrafeet`.

```

6509 \newcommand*{\l@ddodoreintrafeet}{%
6510 \IfStrEq{familiar-critical}{\@fnpos}
6511 {\@doreinfeetX\X@doreinfeet}%
6512 {%
6513 \IfStrEq{critical-familiar}{\@fnpos}%
6514 {\X@doreinfeet\@doreinfeetX}%
6515 {\@doreinfeetX\X@doreinfeet}%

```

```

6516 }%
6517 }
6518
6519 %

```

`\X@doreinfeet` `\X@doreinfeet` is the code for catering for the extra critical footnotes within `\@reinserts`.

```

6520 \newcommand*{\X@doreinfeet}{%
6521   \unless\ifnocritical@%
6522     \def\do##1{%
6523       \ifvoid\csuse{##1footins}\else%
6524         \insert\csuse{##1footins}{\unvbox\csuse{##1footins}}%
6525       \fi}%
6526     \dolistloop{\@series}
6527   \fi%
6528 }
6529
6530 %

```

`\print@notesX` We have to add all the new kinds of familiar footnotes to the output routine. A macro
`\append@notesX` which appends the familiar footnotes of one series onto the output routine, also adding
`\do@feetX` vertical skip before notes.

```

\@doreinfeetX
6531 \newcommand{\append@notesX}[1]{%
6532   \ifvoid\csuse{footins#1}\else%
6533     \global\skip\csuse{footins#1}=\csuse{beforenotesX@#1}%
6534     \global\advance\skip\csuse{footins#1} by\csuse{afterruleX@#1}%
6535     \print@notesX{#1}%
6536   \fi%
6537 }%
6538 %

```

The normal way to print one series of notes. `\print@Xnotes` is replaced by `reledpar` when using `\Pages`.

```

6539 \newcommand\print@notesX[1]{%
6540   \xdef\@currentseries{#1}%
6541   \csuse{footstart#1}{#1}%
6542   \csuse{footgroup#1}{#1}%
6543 }%
6544 %

```

We print all the series of notes by looping over them. We check before printing them that they are not voided.

```

6545 \newcommand*{\do@feetX}{%
6546   \unless\ifnofamiliar@%
6547     \gdef\firstseriesX@{}%
6548     \setbox\@outputbox \vbox{%
6549       \unvbox\@outputbox%
6550       \def\do##1{%

```

```

6551     \append@notesX{##1}%
6552   }%
6553   \dolistloop{\@series}}%
6554 \fi%
6555 }%
6556
6557 \newcommand{\@doreinfeetX}{%
6558   \unless\ifnofamiliar@%
6559     \def\do##1{%
6560       \ifvoid\csuse{footins##1}\else
6561         \insert%
6562           \csuse{footins##1}
6563           {\unvbox\csuse{footins##1}}%
6564       \fi%
6565     }%
6566     \dolistloop{\@series}%
6567   \fi%
6568 }%
6569
6570 %

```

XXIII.2 Patching standard output's commands

The memoir class does not use the ‘standard’ versions of `\@makecol` and `\@reinserts`, due to its sidebar insert. We had better add that code if memoir is used. (It can be awkward dealing with `\if` code within `\if` code, so don't use `\ifl@dmemoir` here.)

```

6571 \@ifclassloaded{memoir}{%
6572 %
6573
6574 memoir is loaded so we use memoir's built in hooks.
6575
6576 \g@addto@macro{\m@mdoextrafeet}{\l@ddoxtrafeet}%
6577 \g@addto@macro{\m@mdodoreinextrafeet}{\l@ddodoreinextrafeet}%
6578 }{%
6579 %
6580

```

memoir has not been loaded, so patch `\@makecol` and `\@reinserts`. If the `fancyhdr` package < version 3.8 has been loaded, we patch the `\latex@makecol` command, because this package redefines the standard `\@makecol` in the preamble to call `\latex@makecol`, which has been `\let` to `\@makecol`. If this package is not loaded, we directly patch `\@makecol`. If the `fancyhdr` package \geq version 3.8, we also directly patch `\@makecol`, because `fancyhdr` does its own patch `\AtBeginDocument`.

```

6577   \ifboolexpr{%
6578     test{\@ifpackageloaded{fancyhdr}}%
6579     and test {\ifdef{\latex@makecol}}%
6580   }{%
6581     \patchcmd%
6582       {\latex@makecol}%

```

```

6583     {\xdef\@freelist{\@freelist\@midlist}}}%
6584     {\xdef\@freelist{\@freelist\@midlist}\l@ddoxtrafeet}%
6585     }%
6586     {\led@error@fail@patch@@makecol}%
6587   }{%
6588   \patchcmd%
6589     {\@makecol}%
6590     {\xdef\@freelist{\@freelist\@midlist}}}%
6591     {\xdef\@freelist{\@freelist\@midlist}\l@ddoxtrafeet}%
6592     }%
6593     {\led@error@fail@patch@@makecol}%
6594   }%
6595
6596   \patchcmd%
6597     {\@reinserts}%
6598     {\ifvbox}%
6599     {\l@ddodoreinxtrafeet\ifvbox}%
6600     }{%
6601     {\led@error@fail@patch@@reinserts}%
6602   }
6603
6604   %

```

It turns out that `\@doclearpage` also needs modifying.

`\if@led@nofoot` We have to check if there are any leftover feet.

```

6605   \newif\if@led@nofoot
6606
6607   %

```

```

6608   \@ifclassloaded{memoir}{%
6609     %

```

If the memoir class is loaded, we hook into its modified `\@doclearpage`.

```

\@mem@extranofeet10 \g@addto@macro{\@mem@extranofeet}{%%
6611   \def\do#1{%
6612     \unless\ifnocritical@%
6613       \ifvoid\csuse{#1footins}\else\@mem@nofootfalse\fi%
6614     \fi%
6615     \unless\ifnofamiliar@%
6616       \ifvoid\csuse{footins#1}\else\@mem@nofootfalse\fi%
6617     \fi%
6618   }
6619   \dolistloop{\@series}%
6620 }%
6621 }{%
6622   %

```

As memoir is not loaded we have patch \@doclearpage.

```

\@led@testifnofoot\newcommand*{\@led@testifnofoot}{%
\@doclearpage
6625 \@led@nofoottrue%
6626 \ifvoid\footins\else%
6627 \@led@nofootfalse%
6628 \fi%
6629 \def\do##1{%
6630 \unless\ifnocritical@%
6631 \ifvoid\csuse{##1footins}\else%
6632 \@led@nofootfalse%
6633 \fi%
6634 \fi%
6635 \unless\ifnofamiliar@%
6636 \ifvoid\csuse{footins##1}\else%
6637 \@led@nofootfalse%
6638 \fi%
6639 \fi%
6640 \dolistloop{\@series}%
6641 }%
6642
6643 \pretocmd%
6644 {\@doclearpage}%
6645 {\@led@testifnofoot}%
6646 {}%
6647 {\led@error@fail@patch@@doclearpage}%
6648
6649 \patchcmd%
6650 {\@doclearpage}%
6651 {\ifvoid\footins}%
6652 {\if@led@nofoot}%
6653 {}%
6654 {\led@error@fail@patch@@doclearpage}%
6655
6656 }
6657
6658 %

```

XXIV Page numbering in parallel typesetting

The `reledpar` package has two options which change the way page numbering works. We need to implement these options on `reledmac` and not on `reledpar` because they have some consequences for the `reledmac` auxiliary files (numbered file; see V.12 p. 130). The `sameparallelpag number` option allows the same page number on both left and right side. The `prevpgnotnumbered` option allows an empty (not numbered) right-side page before \Pages.

We cannot implement these two options by changing the value of the page counter, since its value is used by many \LaTeX features to determine whether a page is left (even numbered) or right (odd numbered). Consequently, we have to do it by patching `\thepage`, in order to use the value of the `par@page` counter instead of the value of the page counter.

This counter will be increased in a patched version of \LaTeX 's `\@outputpage` macro, as is the page counter in this macro. However, this increase will take account of the options.

`\par@patch@thepage` `\par@patch@thepage` patches `\thepage` in order to use the value of `par@page` counter and not the value of `page`. It must be called after any redefinition of `\thepage`. That is why we insert it at the end of the \LaTeX macro `\pagenumbering`, which is called by some `\xxxmatter` commands. In cases when we are using the memoir class, we insert it at the end of `\@mempnum`. When using `\pagenumbering`, we also need to reset the `par@page` counter. Consequently, we put `\par@patch@thepage` and counter reset in `\par@patch@pagenumbering`. We also call `\par@patch@thepage` at the beginning of the document.

```

6659 \newcommand{\par@patch@thepage}{%
6660   \ifboolexpr{%
6661     bool{sameparallelpagenumber}%
6662     or bool{prevpgnotnumbered}%
6663   }%
6664   {%
6665     \patchcmd{\thepage}%
6666       {page}{par@page}%
6667       {}%
6668       {\led@error@fail@patch@thepage}%
6669   }%
6670 }%
6671
6672 \newcommand{\par@patch@pagenumbering}{%
6673   \setcounter{par@page}{1}%
6674   \par@patch@thepage%
6675 }%
6676
6677 \ifldmemoir%
6678   \apptocmd{\@mempnum}%
6679     {\par@patch@pagenumbering}%
6680     {}%
6681     {\led@error@fail@patch@mempnum}%
6682
6683 \else%
6684   \apptocmd{\pagenumbering}%
6685     {\par@patch@pagenumbering}%
6686     {}%
6687     {\led@error@fail@patch@pagenumbering}%
6688 \fi%
6689
```

```

6690
6691 \AtBeginDocument{\par@patch@thepage}%
6692 %

```

\@outputpage As its name says, \@outputpage is a \TeX macro called in the output routine. It is this macro which increases the page counter. We patch it in order to increase, conditionally, the par@page counter.

```

6693 \AtBeginDocument{%
6694   \apptocmd{\@outputpage}{%
6695     \ifsameparallelpagelapnumber%
6696     \ifl@dprintingpages%
6697     \ifodd\c@page\else%
6698       \stepcounter{par@page}%
6699     \fi%
6700   \else%
6701     \stepcounter{par@page}%
6702   \fi%
6703 \else%
6704   \stepcounter{par@page}%
6705 \fi%
6706 }%
6707 {}%
6708 {\led@error@fail@patch@@@outputpage}%
6709 }%
6710 %

```

\thepar@page The par@page counter.

```

6711 \newcounter{par@page}%
6712 \setcounter{par@page}{1}%
6713 %

```

XXV Cross referencing

You can mark a place in the text using a command of the form `\edlabel{<foo>}`, and later refer to it using the label `<foo>` by typing `\edpageref{<foo>}`, or `\lineref{<foo>}` or `\sublineref{<foo>}` or `\pstartref`. These reference commands will produce, respectively, the page, line sub-line and pstart on which the `\edlabel{<foo>}` command occurred.

The reference macros warn you if a reference is made to an undefined label. If `{<foo>}` has been used as a label before, the `\edlabel{<foo>}` command will issue a complaint; subsequent `\edpageref` and `\edlineref` commands will refer to the latest occurrence of `\edlabel{<foo>}`.

\labelref@list Set up a new list, `\labelref@list`, to hold the page, line and sub-line numbers for each label.

```

6714 \list@create{\labelref@list}
6715 %

```

\zz@@@ Two convenience macros to zero three / four labeling counters in one go.

```

\zz@@@
6716 \newcommand*{\zz@@@}{000|000|000}% Set three counters to zero in one go
6717 \newcommand*{\zz@@@@}{000|000|000|000}% Set four counters to zero in one go
6718 %
6719 %

```

\edlabel The `\edlabel` command first writes a `\@lab` macro to the `\linenum@out` file. It then checks to see that the `\labelref@list` actually has something in it (if not, it creates a dummy entry), and pops the next value for the current label, storing it in `\label@refs`. Finally it defines the label to be `\empty` so that any future check will turn up the fact that it has been used.³⁴

This version of the original `edmac \label` uses `\@bsphack` and `\@esphack` to eliminate extra space problems and also use the \TeX write methods for the `.aux` file.

Jesse Billett³⁵ found that the original code could be off by several pages. This version, hopefully cures that, and also allows for non-arabic page numbering.

```

6720 \newcommand*{\edlabel}[1]{%
6721   \leavevmode%
6722   \@bsphack%
6723   \ifboolexpr{bool{ledRcol} or bool{ledRcol@}}{%
6724     \ifXnote@%
6725     \protected@write\@auxout{%
6726       {\string\l@dmake@labelsR\space\thepage|\l@dparsedstartline|\l@dparsedstartsub||\annot@start|\the\c@pstartR|{#1}}%
6727       \ifdef{\hypertarget}%
6728         {\Hy@raisedlink{\hypertarget{#1}{}}}%
6729       {}%
6730     \else%
6731       \write\linenum@outR{\string\@lab}%
6732       \ifx\labelref@listR\empty%
6733         \xdef\label@refs{\zz@@@@}%
6734       \else%
6735         \gl@p\labelref@listR\to\label@refs%
6736       \fi%
6737       \ifvmode%
6738         \advancelabel@refs%
6739       \fi%
6740     }%

```

Use code from the kernel `\label` command to write the correct page number. Also define an `hypertarget` if `hyperref` package is loaded.

³⁴The remaining macros in this section were kindly revised by Wayne Sullivan, who substantially improved their efficiency and flexibility.

³⁵(jdb43@cam.ac.uk) via the `ctt` thread ‘`ledmac` cross referencing’, 25 August 2003.

```

6741     \protected@write\@auxout{}\%
6742     {\string\l@dmake@labelsR\space\thepage|\label@refs|\the\c@pstartR
|{#1}}}%
6743     \ifdef{\hypertarget}%
6744     {\Hy@raisedlink{\hypertarget{#1}{}}}%
6745     {}%
6746     \fi%
6747   }{%
6748     \ifXnote@%
6749     \ifl@dpairing%pstart or pstartL?
6750     \protected@write\@auxout{}\%
6751     {\string\l@dmake@labels\space\thepage|\l@dparsedstartline|\
l@dparsedstartsub||\annot@start|\the\c@pstartL|{#1}}}%
6752     \ifdef{\hypertarget}%
6753     {\Hy@raisedlink{\hypertarget{#1}{}}}%
6754     {}%
6755     \else%
6756     \protected@write\@auxout{}\%
6757     {\string\l@dmake@labels\space\thepage|\l@dparsedstartline|\
l@dparsedstartsub||\annot@start|\the\c@pstart|{#1}}}%
6758     \ifdef{\hypertarget}%
6759     {\Hy@raisedlink{\hypertarget{#1}{}}}%
6760     {}%
6761     \fi%
6762   \else%
6763     \write\linenum@out{\string\@lab}%
6764     \ifx\labelref@list\empty%
6765     \xdef\label@refs{\zz@@@}%
6766     \else%
6767     \gl@p\labelref@list\to\label@refs%
6768     \fi%
6769     \ifvmode%
6770     \advancelabel@refs%
6771     \fi%
6772     \ifl@dpairing%Pstart or PstartL?
6773     \protected@write\@auxout{}\%
6774     {\string\l@dmake@labels\space\thepage|\label@refs|\the\c@pstartL
|{#1}}}%
6775     \ifdef{\hypertarget}%
6776     {\Hy@raisedlink{\hypertarget{#1}{}}}%
6777     {}%
6778     \else%
6779     \protected@write\@auxout{}\%
6780     {\string\l@dmake@labels\space\thepage|\label@refs|\the\c@pstart
|{#1}}}%
6781     \ifdef{\hypertarget}%
6782     {\Hy@raisedlink{\hypertarget{#1}{}}}%
6783     {}%
6784     \fi%
6785   \fi%

```

```

6786 }%
6787 \@espack}%
6788
6789 %

```

`\advancelabel@refs` `\labelrefsparseline` `\labelrefsparsesubline` In cases where `\edlabel` is the first element in a paragraph, we have a problem with line counts, because line counts change only at the first horizontal box of the paragraph. Hence, we need to test `\edlabel` if it occurs at the start of a paragraph. To do so, we use `\ifvmode`. If the test is true, we must advance by one unit the amount of text we write into the `.aux` file. We do so with the `\advancelabel@refs` command.

```

6790 \newcounter{line}%
6791 \newcounter{subline}%
6792 \newcounter{absline}%
6793 \newcommand{\advancelabel@refs}{%
6794   \setcounter{line}{\expandafter\labelrefsparseline\label@refs}%
6795   \stepcounter{line}%
6796   \setcounter{absline}{\expandafter\labelrefsparseabsline\label@refs}%
6797   \stepcounter{absline}%
6798   \ifsublines@%
6799     \setcounter{subline}{\expandafter\labelrefsparsesubline\label@refs}%
6800   %
6801   \stepcounter{subline}{1}%
6802   \def\label@refs{\theline|\thesubline|\theabsline}%
6803   \else%
6804     \def\label@refs{\theline|0|\theabsline}%
6805   \fi%
6806 }
6807 \def\labelrefsparseline#1|#2|#3{#1}%
6808 \def\labelrefsparsesubline#1|#2|#3{#2}%
6809 \def\labelrefsparseabsline#1|#2|#3{#3}%
6810 %

```

`\l@dmake@labels` The `\l@dmake@labels` macro gets executed when the labels file is read. For each label it defines a macro, whose name is made up partly from the label you supplied, that contains the page, line and sub-line numbers. But first it checks to see whether the label has already been used (and complains if it has).

The initial use of `\newcommand` is to catch if `\l@dmake@labels` has been previously defined (by a class or package).

#1 page number, #2 line number, #3 sub-line number, #4 absolute line number, #5 line number annotation, #6 pstart number, #7 label.

```

6810 \newcommand*{\l@dmake@labels}{%
6811 \def\l@dmake@labels#1|#2|#3|#4|#5|#6|#7{%
6812   \expandafter\ifx\csname the@label\csuse{XR@prefix}#7\endcsname%
6813   \relax%
6814   \else%
6815     \led@warn@DuplicateLabel{\csuse{XR@prefix}#7}%
6816   \fi

```

```

6817 \global\providetoggle{label@#7@ledRcol}%False is the default value of
this toggle, which tells us whether a label is linked to the right or left
side
6818 \csgdef{the@label\csuse{XR@prefix}#7}{#1|#2|#3|#4|#5|#6|\relax}%
6819 \ignorespaces}
6820
6821 %

```

TeX reads the aux file at both the beginning and end of the document, so we have to switch off duplicate label checking after the first time the file is read.

```

6822 \AtBeginDocument{%
6823 \def\l@dmake@labels#1|#2|#3|#4|#5|#6|#7{%
6824 }
6825
6826 %

```

\@lab The \@lab command, which appears in the \linenum@out file, appends the current value of page, line, sub-line, and absolute line to the \labelref@list. These values are defined by the earlier \@page, \@nl, and the \sub@on and \sub@off commands appearing in the \linenum@out file.

TeX uses the page counter for page numbers. However, it appears that this is not the right place to grab the page number. That task is now done in the \edlabel macro. This version of \@lab appends just the current line and sub-line numbers to \labelref@list.

```

6827
6828 \newcommand*{\@lab}{%
6829 \ifledRcol
6830 \xright@appenditem{\linenumr@p{\line@numR}}|{%
6831 \ifsublines@ \sublinenumr@p{\subline@numR}\else 0\fi|{%
6832 \the\absline@numR|{%
6833 \current@annot%
6834 }%
6835 \to\labelref@listR
6836 \else
6837 \xright@appenditem{%
6838 \linenumr@p{\line@num}}|{%
6839 \ifsublines@ \sublinenumr@p{\subline@num}\else 0\fi|{%
6840 \the\absline@num|{%
6841 \current@annot%
6842 }%
6843 \to\labelref@list
6844 \fi}
6845 %

```

\applabel \applabel, if called in \edtext will insert automatically both a starting and an ending label for the current edtext lines.

```

6846 \newcommand*{\applabel}[1]{%
6847   \if@edtext@secondarg%
6848   %

```

Label should not be already defined.

```

6849   \ifcsundef{the@label#1}{%
6850     \csdef{the@label#1}{applabel}%
6851   }%
6852   {%
6853     \led@warn@DuplicateLabel{#1 (applabel)}%
6854   }%
6855 %

```

Parse the \edtext line numbers and annotations.

```

6856   \expandafter\l@dp@rsefootspec\l@d@nums|%
6857   \expandafter\parse@annot\l@current@annot|%
6858   %

```

Use the \TeX standard hack for label.

```

6859   \@bsphack%
6860   %

```

And now, write the data in the auxiliary file.

```

6861   \ifledRcol%
6862     \protected@write\@auxout{}%
6863     {\string\l@dmake@labelsR\space\l@dparsedstartpage|\
l@dparsedstartline|\l@dparsedstartsub||\annot@start|\the\c@pstartR|{#1:
start}}}%
6864     \ifdef\hypertarget{%
6865       {\Hy@raisedlink{\hypertarget{#1:start}}}}%
6866     }%
6867     \protected@write\@auxout{}%
6868     {\string\l@dmake@labelsR\space\l@dparsedendpage|\l@dparsedendline
||\l@dparsedendsub||\annot@end|\the\c@pstartR|{#1:end}}}%
6869   \else%
6870     \ifl@dpairing%pstart or pstartL?
6871     \protected@write\@auxout{}%
6872     {\string\l@dmake@labels\space\l@dparsedstartpage|\
l@dparsedstartline|\l@dparsedstartsub||\annot@start|\the\c@pstartL|{#1:
start}}}%
6873     \ifdef\hypertarget{%
6874       {\Hy@raisedlink{\hypertarget{#1:start}}}}%
6875     }%
6876     \protected@write\@auxout{}%
6877     {\string\l@dmake@labels\space\l@dparsedendpage|\
l@dparsedendline|\l@dparsedendsub||\annot@end|\the\c@pstartL|{#1:end}}}%
6878   \else%
6879     \protected@write\@auxout{}%

```

```

6880      {\string\l@dmake@labels\space\l@dparsedstartpage|\
l@dparsedstartline|\l@dparsedstartsub|\annot@start|\the\c@pstart|{\#1:start
}}}%
6881      \ifdef{\hypertarget}%
6882      {\Hy@raisedlink{\hypertarget{\#1:start}}}%
6883      {}}%
6884      \protected@write\@auxout{}%
6885      {\string\l@dmake@labels\space\l@dparsedendpage|\
l@dparsedendline|\l@dparsedendsub|\annot@end|\the\c@pstart|{\#1:end}}}%
6886      \fi%
6887      \fi%
6888      %

```

Use the \LaTeX standard hack for label.

```

6889      \@esphack%
6890      %

```

Warning if `\apptlabel` is called outside of `\edtext`.

```

6891      \else%
6892      \led@warn@AppLabelOutSecondArgEdtext{\#1}%
6893      \fi%
6894      %

```

End of `\apptlabel`

```

6895      }%
6896      %

```

`\edlabels` `\edlabelS` and `\edlabelE` are just used to mark the beginning and the end of a passage.

```

\edlabelE
\edlabelSE
6897 \newcommand{\edlabels}[1]{%
6898   \edlabel{\#1:start}%
6899 }
6900 \newcommand{\edlabelE}[1]{%
6901   \edlabel{\#1:end}%
6902 }
6903 \newcommand{\edlabelSE}[1]{%
6904   \edlabelS{\#1}%
6905   \edlabelE{\#1}%
6906 }
6907 %

```

`\wrap@edcrossref` `\wrap@edcrossref` is called around all `reledmac` crossref commands, except those which start with `x`. It adds the hyperlink.

```

6908 \newrobustcmd{\wrap@edcrossref}[2]{%
6909   \ifdef{\hyperlink}%
6910   {\hyperlink{\#1}{\#2}}%
6911   {\#2}%
6912 }
6913 %

```

\edpageref If the specified label exists, \edpageref gives its page number.

\xpageref For this reference command, as for the other two, a special version with prefix x is provided for use in places where the command is to be scanned as a number, as in \linenum. These special versions have two limitations: they do not print error messages if the reference is unknown, and they can't appear as the first label or reference command in the file; you must ensure that a \edlabel or a normal reference command appears first, or these x-commands will always return zeros.

TeX already defines a \pageref, so changing the name to \edpageref.

```
6914 \newcommand*\edpageref}[1]{\l@dref@undefined{#1}\wrap@edcrossref{#1}{\l@dgetref@num{1}{#1}}}%
6915 \newcommand*\xpageref}[1]{\l@dgetref@num{1}{#1}}%
6916
6917 %
```

\edlineref If the specified label exists, \edlineref gives its line number.

\xlineref

```
6918 \newcommand*\edlineref}[1]{%
6919   \l@dref@undefined{#1}%
6920   \wrap@edcrossref{#1}{%
6921     \providetoggle{label@#1@ledRcol}%Required for the first run, when the
label has not yet been parsed on the .aux file
6922     \iftoggle{label@#1@ledRcol}%
6923       {\linenumrepR{\l@dgetref@num{2}{#1}}}%
6924       {\linenumrep{\l@dgetref@num{2}{#1}}}%
6925     \xflagref{#1}%
6926   }%
6927 }%
6928 \newcommand*\xlineref}[1]{\l@dgetref@num{2}{#1}}%
6929
6930 %
```

\sublineref If the specified label exists, \sublineref gives its sub-line number.

\xsublineref

```
6931 \newcommand*\sublineref}[1]{%
6932   \l@dref@undefined{#1}%
6933   \wrap@edcrossref{#1}{%
6934     \providetoggle{label@#1@ledRcol}%Required for the first run, when the
label has not yet been parsed on the .aux file
6935     \iftoggle{label@#1@ledRcol}%
6936       {\sublinenumrepR{\l@dgetref@num{3}{#1}}}%
6937       {\sublinenumrep{\l@dgetref@num{3}{#1}}}%
6938     }%
6939   }%
6940 \newcommand*\xsublineref}[1]{\l@dgetref@num{3}{#1}}%
6941
6942 %
```

\xabslineref If the specified label exists, \xabslineref gives its absolute line number. This is generally used only by reledmac internal macros.

```

6943 \newcommand*\xabslineref}[1]{\l@getref@num{4}{#1}}%
6944 %

```

\annotationref If the specified label exists, \edannotationref gives the line number annotation with which it is associated.

\xannotationref

```

6945 \newcommand*\annotationref}[1]{%
6946   \l@dref@undefined{#1}%
6947   \wrap@edcrossref{#1}{%
6948     \l@wrap@ifnotemptybox{\Xwraplinenumannotation@ref}{%
6949       \l@getref@num{5}{#1}%
6950     }%
6951   }%
6952 }%
6953 \newcommand*\xannotationref}[1]{%
6954   \l@getref@num{5}{#1}%
6955 }%
6956 %

```

\pstartref If the specified label exists, \pstartref gives its pstart number.

\xpstartref

```

6957 \newcommand*\pstartref}[1]{\l@dref@undefined{#1}\wrap@edcrossref{#1}{\l@getref@num{6}{#1}}}%
6958 \newcommand*\xpstartref}[1]{\l@getref@num{6}{#1}}%
6959 %
6960 %

```

\xflagref \xflagref finds the side flag of any ref defined with \edlabel.

```

6961 \newcommand*\xflagref}[1]{\l@getref@num{7}{#1}}%
6962 %

```

The next three macros are used by the referencing commands above, and do the job of extracting the right numbers from the label macro that contains the page, line, and sub-line number.

\l@dref@undefined The \l@dref@undefined macro is called when you refer to a label with the normal referencing macros. Its argument is a label, and it just checks that the label has been defined.

```

6963 \newcommand*\l@dref@undefined}[1]{%
6964   \expandafter\ifx\csname the@label#1\endcsname\relax
6965   \led@warn@RefUndefined{#1}%
6966   \fi}
6967 %
6968 %

```

\l@dgetref@num Next, `\l@dgetref@num` fetches the number we want. It has two arguments: the first is simply a digit, specifying whether to fetch a page (1), line (2), sub-line (3), (4) pstart number or (5) side flag. (This switching is done by calling `\l@dlabel@parse`.) The second argument is the label-macro, which because of the `\@lab` macro above is defined to be a string of the type `123|456|789`.

```

6969 \newcommand*{\l@dgetref@num}[2]{%
6970   \expandafter
6971   \ifx\csname the@label#2\endcsname \relax
6972     000%
6973   \else
6974     \expandafter\expandafter\expandafter
6975     \l@dlabel@parse\csname the@label#2\endcsname|#1%
6976   \fi}
6977
6978 %

```

\l@dlabel@parse Notice that we slipped another `|` delimiter into the penultimate line of `\l@dgetref@num`, to keep the ‘switch-number’ separate from the reference numbers. This `|` is used as another parameter delimiter by `\l@dlabel@parse`, which extracts the appropriate number from its first argument. The `|`-delimited arguments consist of the expanded label-macro (three reference numbers), followed by the switch-number (1, 2, 3, 4, 5, 6) which defines which of the former seven numbers to extract. (It was given earlier as the first argument of `\l@dgetref@num`.)

```

6979 \newcommand*{\l@dlabel@parse}{%
6980   \def\l@dlabel@parse#1|#2|#3|#4|#5|#6|#7|#8{%
6981     \ifcase #8%
6982       \or #1%
6983       \or #2%
6984       \or #3%
6985       \or #4%
6986       \or #5%
6987       \or #6%
6988       \or #7%
6989     \fi}
6990 %

```

\xxref The `\xxref` command takes two arguments, both of which are labels, e.g., `\xxref{mouse}{elephant}`. It first does some checking to make sure that the labels do exist (if one does not, those numbers are set to zero). Then it calls `\linenum` and sets the beginning page, line, and sub-line numbers to those of the place where `\label{mouse}` was placed, and the ending numbers to those at `{elephant}`. The point of this is to be able to manufacture footnote line references to passages which cannot be specified in the normal way as the first argument to `\edtext` for one reason or another. Using `\xxref` in the second argument of `\edtext` lets you set things up at least semi-automatically.

```

6991 \newcommand*{\xxref}[2]{%
6992   {%

```

```

6993 \expandafter\ifx\cename the@label#1\endcename\relax%
6994 \let\@tempa\zz@@@%
6995 \def\@tempc{}%
6996 \else%
6997 \def\@tempa{%
6998 \l@getref@num{1}{#1}|%
6999 \l@getref@num{2}{#1}|%
7000 \l@getref@num{3}{#1}%
7001 }%
7002 \edef\@tempc{%
7003 \l@getref@num{5}{#1}%
7004 }%
7005 \fi%
7006 \expandafter\ifx\cename the@label#2\endcename\relax%
7007 \let\@tempb\zz@@@%
7008 \def\@tempd{}%
7009 \else%
7010 \def\@tempb{%
7011 \l@getref@num{1}{#2}|%
7012 \l@getref@num{2}{#2}|%
7013 \l@getref@num{3}{#2}%
7014 }%
7015 \edef\@tempd{%
7016 \l@getref@num{5}{#2}%
7017 }%
7018 \fi%
7019 \global\appto\@beforeinsertofthisedtext{%
7020 \def\@this@crossref@start{#1}%
7021 }%
7022 \global\appto\@beforeinsertofthisedtext{%
7023 \def\@this@crossref@end{#2}%
7024 }%
7025 \linenum{\@tempa|\@tempb}%
7026 \edef\@tempe{\@tempc|\@tempd}%
7027 \expandafter\lineannot\expandafter{\@tempe}%
7028 }%
7029 }%
7030
7031
7032 %

```

`\appref` `\SEref`, `\apprefwithpage`, `\SErefwithpage` and `\SEonlypage` print cross-ref to some start / end lines defined by specific commands. It prints the lines as they should be printed in the apparatus (critical notes for not suffixed versions, endnotes for suffixed versions).

`\SErefwithpage` Here we define hooks similar to some those related to critical footnotes or endnotes. So, first declare the default value of the hooks for the pseudo-series. Also declare the internal toggle which are switch by `reledmac`.

```

7033 \def\Xtwolines@appref{}%

```

```

7034 \def\Xtwolines@SEref{}%
7035
7036 \def\Xmorethantwolines@appref{}%
7037 \def\Xmorethantwolines@SEref{}%
7038
7039 \def\Xlinerangeseparator@appref{\endashchar}%
7040 \def\Xlinerangeseparator@SEref{\endashchar}%
7041
7042 \def\Xsublinesep@appref{\fullstop}%
7043 \def\Xsublinesep@SEref{\fullstop}%
7044
7045 \def\Xpagelinesep@appref{\fullstop}%
7046 \def\Xpagelinesep@SEref{\fullstop}%
7047
7048
7049 \newtoggle{Xtwolinesbutnotmore@appref}%
7050 \newtoggle{Xtwolinesbutnotmore@SEref}%
7051
7052 \newtoggle{Xtwolinesonlyinsamepage@appref}%
7053
7054 \newtoggle{Xtwolinesonlyinsamepage@SEref}%
7055
7056 \newtoggle{Xlineflag@appref}%
7057 \toggletrue{Xlineflag@appref}%Here exception
7058 \newtoggle{Xlineflag@SEref}%
7059 \toggletrue{Xlineflag@SEref}%%Here exception
7060
7061 \newtoggle{Xlinenumannotationonlyfirst@SEref}%Never changed, just for the
test in \setprintlines
7062 \newtoggle{Xlinenumannotationonlyfirst@appref}%Idem
7063
7064 \def\Xlinenumannotationposition@appref{after}%
7065 \def\Xlinenumannotationposition@SEref{after}%
7066
7067 \def\Xwraplinenumannotation@appref{\textsuperscript}%
7068 \def\Xwraplinenumannotation@SEref{\textsuperscript}%
7069 \newtoggle{Xnoidenticallinenumannotation@appref}%
7070 \newtoggle{Xnoidenticallinenumannotation@SEref}%
7071
7072 \def\Xendtwolines@apprefwithpage{}%
7073 \def\Xendtwolines@SErefwithpage{}%
7074
7075 \def\Xendmorethantwolines@apprefwithpage{}%
7076 \def\Xendmorethantwolines@SErefwithpage{}%
7077
7078 \def\Xendlinerangeseparator@apprefwithpage{\endashchar}
7079 \def\Xendlinerangeseparator@SErefwithpage{\endashchar}
7080 \def\Xendlinerangeseparator@SErefonlypage{\endashchar}
7081
7082 \def\Xendbeforepagenumber@apprefwithpage{p.}%

```

```

7083 \def\Xendbeforepagenumber@SErefwithpage{p.}%
7084 \def\Xendbeforepagenumber@SEonlypage{p.}%
7085
7086 \def\Xendafterpagenumber@apprefwithpage{ }%
7087 \def\Xendafterpagenumber@SErefwithpage{ }%
7088
7089
7090 \def\Xendlineprefixsingle@apprefwithpage{ }%
7091 \def\Xendlineprefixsingle@SErefwithpage{ }%
7092
7093 \def\Xendlineprefixmore@apprefwithpage{ }%
7094 \def\Xendlineprefixmore@SErefwithpage{ }%
7095
7096 \newtoggle{Xendtwolinesbutnotmore@apprefwithpage}%
7097 \newtoggle{Xendtwolinesbutnotmore@SErefwithpage}%
7098
7099 \def\Xendsublinesep@apprefwithpage{\fullstop}%
7100 \def\Xendsublinesep@SErefwithpage{\fullstop}%
7101
7102 \newtoggle{Xendtwolinesonlyinsamepage@apprefwithpage}%
7103 \newtoggle{Xendtwolinesonlyinsamepage@SErefwithpage}%
7104
7105 \newtoggle{Xendlineflag@apprefwithpage}
7106 \toggletrue{Xendlineflag@apprefwithpage}%Here, exception
7107 \newtoggle{Xendlineflag@SErefwithpage}
7108 \toggletrue{Xendlineflag@SErefwithpage}%Here, exception
7109
7110
7111 \newtoggle{Xendlinenumannotationonlyfirst@SEref}%Never changed, just for
the test in \setprintendlines
7112 \newtoggle{Xendlinenumannotationonlyfirst@appref}%Idem
7113
7114 \def\Xendlinenumannotationposition@apprefwithpage{after}%
7115 \def\Xendlinenumannotationposition@apprefwithpage@SErefwithpage{after}%
7116
7117 \def\Xendwraplinenumannotation@apprefwithpage{\textsuperscript}%
7118 \def\Xendwraplinenumannotation@SErefwithpage{\textsuperscript}%
7119
7120 \newtoggle{Xendnoidenticallinenumannotation@apprefwithpage}%
7121 \newtoggle{Xendnoidenticallinenumannotation@SErefwithpage}%
7122 %

```

Note that some of these hooks are declared but no user command can change their values. Such hooks are not pertinent for appref and apprefwithpage pseudo-series, but their values are nonetheless tested in some macros.

```

7123
7124 \gdef\Xboxstartlinenum@appref{Opt}
7125 \gdef\Xboxstartlinenum@SEref{Opt}
7126
7127 \gdef\Xboxendlinenum@appref{Opt}

```

```

7128 \gdef\Xboxendlinenum@SEref{0pt}
7129
7130 \gdef\Xendboxstartlinenum@apprefwithpage{0pt}
7131 \gdef\Xendboxstartlinenum@SErefwithpage{0pt}
7132
7133 \gdef\Xendboxendlinenum@apprefwithpage{0pt}
7134 \gdef\Xendboxendlinenum@SErefwithpage{0pt}
7135
7136 \newtoggle{Xendpagenumberonlyfirst@apprefwithpage}
7137 \newtoggle{Xendpagenumberonlyfirst@SErefwithpage}
7138
7139 \newtoggle{Xendpagenumberonlyfirstifsingle@apprefwithpage}
7140 \newtoggle{Xendpagenumberonlyfirstifsingle@SErefwithpage}
7141
7142 \newtoggle{Xendpagenumberonlyfirstintwo@apprefwithpage}
7143 \newtoggle{Xendpagenumberonlyfirstintwo@SErefwithpage}
7144
7145 \gdef\Xendsympagenum@apprefwithpage{}
7146 \gdef\Xendsympagenum@SErefwithpage{}
7147
7148 \gdef\Xendinplaceofpagenumber@apprefwithpage{}
7149 \gdef\Xendinplaceofpagenumber@SErefwithpage{}
7150
7151 %

```

Now, declare the default values of \@apprefprefixsingle and \@apprefprefixmore, \@SErefprefix, \@SErefprefixmore and the commands which defines them.

```

7152 \newcommand\@apprefprefixsingle{}%
7153 \newcommand\@SErefprefixsingle{}%
7154
7155 \newcommand\@apprefprefixmore{}%
7156 \newcommand\@SErefprefixmore{}%
7157
7158 \newcommand{\setapprefprefixsingle}[1]{%
7159   \gdef\@apprefprefixsingle{#1}%
7160 }
7161 \newcommand{\setSErefprefixsingle}[1]{%
7162   \gdef\@SErefprefixsingle{#1}%
7163 }
7164
7165 \newcommand{\setapprefprefixmore}[1]{%
7166   \gdef\@apprefprefixmore{#1}%
7167 }
7168 \newcommand{\setSErefprefixmore}[1]{%
7169   \gdef\@SErefprefixmore{#1}%
7170 }
7171
7172 %

```

And not \setSErefonlypageprefixsingle and \setSErefonlypageprefixmore.

```

7173 \newcommand{\setSErefonlypageprefixsingle}[1]{%
7174   \gdef\SErefonlypage@prefixsingle{#1}%
7175 }%
7176 \newcommand{\setSErefonlypageprefixmore}[1]{%
7177   \gdef\SErefonlypage@prefixmore{#1}%
7178 }%
7179 %

```

And now, the main commands: `\appref`, `\apprefwithpage`, `\SEref` and `\SErefwithpage`. These commands call `\reformatted@` and `\reformattedwithpage`, which calls `\printlines` and `\printendlines`. That is why we have previously declared all hooks values tested inside these last commands.

```

7180 \newcommandx{\appref}[2][1,usedefault]{\reformatted@{#1}{#2}{appref}}
7181 \newcommandx{\SEref}[2][1,usedefault]{\reformatted@{#1}{#2}{SEref}}
7182
7183
7184 \newcommandx{\apprefwithpage}[2][1,usedefault]{\reformattedwithpage@
7185   {#1}{#2}{appref}}
7186 \newcommandx{\SErefwithpage}[2][1,usedefault]{\reformattedwithpage@
7187   {#1}{#2}{SEref}}
7188
7189 \newcommand{\reformatted@}[3]{%
7190   \def\do##1{%
7191     \setkeys{mac}{truefootnoteoption}{##1}%
7192   }%
7193   \notblank{#1}{\docsvlist{#1}}{ }%
7194   \xdef\@currentseries{#3}%
7195   \iftoggle{noprefix@}{ }%
7196   {%
7197     \ifcsempy{@#3prefixmore}%
7198     {\@apprefprefixsingle}%
7199     {%
7200       \IfEq{\xlineref{#2:start}}{\xlineref{#2:end}}%
7201       {\iftoggle{prefixmore@}%
7202         {\csuse{@#3prefixmore}}%
7203         {\csuse{@#3prefixsingle}}%
7204       }%
7205       {\csuse{@#3prefixmore}}%
7206     }%
7207   }%
7208   \ifboolexpr{%
7209     test{\ifcsundef{the@label#2:start}}%
7210     or test{\ifcsundef{the@label#2:end}}%
7211   }%
7212   {\led@warn@pairRefUndefined{#2}\nfss@text{\reset@font\bfseries ??}}%
7213   {%
7214     \def\@this@crossref@start{#2:start}%

```

```

7215 \def\@this@crossref@end{#2:end}%
7216 \xdef\annot@start{\xannotationref{#2:start}}%
7217 \xdef\annot@end{\xannotationref{#2:end}}%
7218 \printlines\xpageref{#2:start}|\xlineref{#2:start}|\xsublineref{#2:
start}|\xpageref{#2:end}|\xlineref{#2:end}|\xsublineref{#2:end}|\relax|\
xflagref{#2:start}|\%
7219 }%
7220 \def\do##1{%
7221 \setkeys[mac]{falsefootnoteoption}{##1}%
7222 }%
7223 \notblank{#1}{\docsvlist{#1}}{ }%
7224 }%
7225
7226 \newcommand{\reformattedwithpage@}[3]{%
7227 \def\do##1{%
7228 \setkeys[mac]{truefootnoteoption}{##1}%
7229 }%
7230 \notblank{#1}{\docsvlist{#1}}{ }%
7231 \xdef\@currentseries{#3withpage}%
7232 \ifboolexpr{%
7233 test{\ifcsundef{the@label#2:start}}}%
7234 or test{\ifcsundef{the@label#2:end}}}%
7235 }%
7236 {\led@warn@pairRefUndefined{#2}\nfss@text{\reset@font\bfseries ??}}%
7237 {%
7238 \def\@this@crossref@start{#2:start}%
7239 \def\@this@crossref@end{#2:end}%
7240 \printendlines\xpageref{#2:start}|\xlineref{#2:start}|\xsublineref{#2:
start}|\xpageref{#2:end}|\xlineref{#2:end}|\xsublineref{#2:end}|\relax|\
xflagref{#2:start}|\%
7241 }%
7242 \def\do##1{%
7243 \setkeys[mac]{falsefootnoteoption}{##1}%
7244 }%
7245 \notblank{#1}{\docsvlist{#1}}{ }%
7246 }%
7247
7248 \newcommand{\reformattedonlypage@}[3]{%
7249 \def\do##1{%
7250 \setkeys[mac]{truefootnoteoption}{##1}%
7251 }%
7252 \notblank{#1}{\docsvlist{#1}}{ }%
7253 \xdef\@currentseries{#3onlypage}%
7254 \ifboolexpr{%
7255 test{\ifcsundef{the@label#2:start}}}%
7256 or test{\ifcsundef{the@label#2:end}}}%
7257 }%
7258 {\led@warn@pairRefUndefined{#2}\nfss@text{\reset@font\bfseries ??}}%
7259 {\ifnumequal{\xpageref{#2:end}}{\xpageref{#2:start}}}%
7260 {%

```

```

7261 \ifcsvoid{#3onlypage@prefixsingle}%
7262 {}%
7263 {\csletcs{Xendbeforepagenumber@#3onlypage}{#3onlypage@prefixsingle
}}%
7264 \printnpnum{%
7265 \wrap@edcrossref{#2:start}{\xpageref{#2:start}}}%
7266 }%
7267 }%
7268 {%
7269 \ifcsvoid{#3onlypage@prefixmore}%
7270 {}%
7271 {\csletcs{Xendbeforepagenumber@#3onlypage}{#3onlypage@prefixmore}}%
7272 \ifdefined\linangesep@%
7273 \printnpnum{%
7274 \wrap@edcrossref{#2:start}{\xpageref{#2:start}}%
7275 \linangesep@%
7276 \wrap@edcrossref{#2:end}{\xpageref{#2:end}}}%
7277 }%
7278 \else%
7279 \printnpnum{%
7280 \wrap@edcrossref{#2:start}{\xpageref{#2:start}}%
7281 \csuse{Xendlinangeseparator@}\@currentseries}%
7282 \wrap@edcrossref{#2:end}{\xpageref{#2:end}}}%
7283 }%
7284 \fi%
7285 }%
7286 }%
7287 \def\do##1{%
7288 \setkeys[mac]{falsefootnoteoption}{##1}%
7289 }%
7290 \notblank{#1}{\docsvlist{#1}}}%
7291 }%
7292 %

```

\edmakelabel Sometimes the `\edlabel` command cannot be used to specify exactly the page and line desired; you can use the `\edmakelabel` macro make your own label. For example, if you insert `\edmakelabel{elephant}{10|25|0}` you will have created a new label, and a later call to `\edpageref{elephant}` would print ‘10’ and `\lineref{elephant}` would print ‘25’. The sub-line number here is zero. `\edmakelabel` takes a label, followed by a page and a line number(s) as arguments. \TeX defines a `\makelabel` macro which is used in lists. Peter Wilson has changed the name to `\edmakelabel`.

```

7293 \newcommand*{\edmakelabel}[2]{\expandafter\xdef\csname the@label#1\
endcsname{#2}}
7294
7295 %

```

(If you are only going to refer to such a label using `\xxref`, then you can omit entries in the same way as with `\linenum` (see VI.3 p. 145 and V.9 p. 109), since `\xxref` makes a call to `\linenum` in order to do its work.)

XXV.1 Compatibility with xref

Here, we provide compatibility with the xref to enable reledmac's cross-referencing to external documents. We assume that the user loads xref *before* reledmac, but uses \externaldocument *after* loading reledmac.

\XR@test First, we patch the xr macro \XR@test, which is called on every line of the external .aux file, in order to also call macros specific to reledmac.

```
7296 \pretocmd{\XR@test}%
7297   {\XR@test@mac+++#1#2#3#4+++}%
7298   {}%
7299   {}%
7300 %
```

\XR@test@mac The \XR@test@mac takes the full content of a line of the external .aux files, with the three final dots added by xr.

```
7301 \long\def\xR@test@mac+++#1+++{\XR@test@mac@test#1}
7302 %
```

\XR@test@mac@test And finally, \XR@test@mac@test does the job. This code is based on the \XR@test macro of the xr package. However, not that the \XR@prefix is not called here, but it is integrated directly in \l@dmake@labels and \l@dmake@labelsR.

```
7303 \long\def\xR@test@mac@test#1#2...{%The triple dots (NOT \ldots) are because
7304   of the line 22 of xr.sty v5.02 1994/05/28
7305   \ifx#1\l@dmake@labels%
7306     \l@dmake@labels#2%
7307   \else
7308     \ifx#1\l@dmake@labelsR%
7309       \l@dmake@labelsR #2%
7310     \fi%
7311   }%
7312 %
```

XXVI Sidenotes

Regular \marginpars do not work inside numbered text — they do not produce any note but do put an extra unnumbered blank line into the text.

\@xympar Changing \@xympar a little at least ensures that \marginpars in numbered text do not disturb the flow.

```
7313 \pretocmd{\@xympar}%
7314   {\ifnumberedpar@
7315     \led@warn@NoMarginpars
7316     \@esphack
```

```

7317 \else}%
7318 {}%
7319 {}%
7320
7321 \apptocmd{\@xympar}%
7322 {\fi}%
7323 {}
7324 {}
7325
7326 %

```

We provide sidenotes as replacement for `\marginpar` in numbered text.

`\sidenote@margin` These are the sidenote equivalents to `\line@margin` and `\linenummargin` for specifying which margin. The default is the right margin (opposite to the default for line numbers). `\l@dotsidenote@margin` returns the number associated to sidenote margin:

left: 0

right: 1

outer: 2

inner: 3

```

7327 \newcount\sidenote@margin
7328 \newcommand*{\sidenotemargin}[1]{\{%
7329 \l@dotsidenote@margin{#1}%
7330 \ifnum\@l@tempcntb>\m@ne
7331 \ifledRcol
7332 \global\sidenote@marginR=\@l@tempcntb
7333 \else
7334 \global\sidenote@margin=\@l@tempcntb
7335 \fi
7336 \fi}}
7337 \newcommand*{\l@dotsidenote@margin}[1]{\%
7338 \def\@tempa{#1}\def\@tempb{left}%
7339 \ifx\@tempa\@tempb
7340 \@l@tempcntb \z@
7341 \else
7342 \def\@tempb{right}%
7343 \ifx\@tempa\@tempb
7344 \@l@tempcntb \@ne
7345 \else
7346 \def\@tempb{outer}%
7347 \ifx\@tempa\@tempb
7348 \@l@tempcntb \tw@
7349 \else
7350 \def\@tempb{inner}%

```

```

7351     \ifx\@tempa\@tempb
7352       \@l@tempcntb \thr@@
7353     \else
7354       \led@warn@BadSidenotemargin
7355       \@l@tempcntb \m@ne
7356     \fi
7357   \fi
7358 \fi
7359 \fi}
7360 \sidenotemargin{right}
7361
7362 %

```

`\l@dlp@rbox` We need two boxes to store sidenote texts.

```

\l@drp@rbox
7363 \newbox\l@dlp@rbox
7364 \newbox\l@drp@rbox
7365
7366 %

```

`\ledlsnotewidth` These specify the width of the left/right boxes (initialised to `\marginparwidth`), their distance from the text (initialised to `\linenumsep`), and the fonts used.

```

\ledrsnotewidth
\ledlsnotesep
7367 \newdimen\ledlsnotewidth \ledlsnotewidth=\marginparwidth
\ledrsnotesep
7368 \newdimen\ledrsnotewidth \ledrsnotewidth=\marginparwidth
7369 \ledlsnotefontsetup
7370 \newdimen\ledlsnotesep \ledlsnotesep=\linenumsep
\ledrsnotefontsetup
7371 \newdimen\ledrsnotesep \ledrsnotesep=\linenumsep
7372 \newcommand*\ledlsnotefontsetup{\raggedleft\footnotesize}
7373 \newcommand*\ledrsnotefontsetup{\raggedright\footnotesize}
7374 %

```

`\ledleftnote` `\ledleftnote`, `\ledrightnote`, `\ledinnernote`, `\ledouternote` are the user commands for left, right, inner and outer sidenotes. The two last one are just alias for the two first one, depending of the page number. `\ledsidenote{<text>}` is the command for a moveable sidenote.

```

\ledsidenote
7375 \newcommand*\ledleftnote[1]{\edtext{}\l@dlsnote{#1}}
7376 \newcommand*\ledrightnote[1]{\edtext{}\l@drsnote{#1}}
7377 \newcommand*\ledsidenote[1]{\edtext{}\l@dcnote{#1}}%
7378 \newcommand*\ledinnernote[1]{\edtext{}\l@disnote{#1}}%
7379 \newcommand*\ledouternote[1]{\edtext{}\l@dosnote{#1}}%
7380 %

```

`\l@dlsnote` . The ‘footnotes’ for left, right, and moveable sidenotes. The whole scheme is reminiscent of the critical footnotes code.

```

\l@drsnote
\l@dcnote
7381 \newif\ifrighnoteup
\l@desnote
7382 \righnoteuptrue
\l@disnote
7383

```

```

7384 \newcommand*{\l@dlsnote}[1]{%
7385   \begingroup%
7386   \newcommand{\content}{#1}%
7387   \ifnumberedpar@
7388     \ifledRcol%
7389       \xright@appenditem{\noexpand\vl@dlsnote{\expandonce\content}}{%
7390         \to\inserts@listR
7391         \global\advance\insert@countR \@ne%
7392       }%
7393     \else%
7394       \xright@appenditem{\noexpand\vl@dlsnote{\expandonce\content}}{%
7395         \to\inserts@list
7396         \global\advance\insert@count \@ne%
7397       }%
7398     \fi%
7399   \ignorespaces%
7400   \endgroup%
7401 }%
7402 \newcommand*{\l@drsnote}[1]{%
7403   \begingroup%
7404   \newcommand{\content}{#1}%
7405   \ifnumberedpar@
7406     \ifledRcol%
7407       \xright@appenditem{\noexpand\vl@drsnote{\expandonce\content}}{%
7408         \to\inserts@listR
7409         \global\advance\insert@countR \@ne%
7410       }%
7411     \else%
7412       \xright@appenditem{\noexpand\vl@drsnote{\expandonce\content}}{%
7413         \to\inserts@list
7414         \global\advance\insert@count \@ne%
7415       }%
7416     \fi%
7417   \fi\ignorespaces%
7418   \endgroup%
7419 }%
7420 \newcommand*{\l@dcnote}[1]{%
7421   \begingroup%
7422   \newcommand{\content}{#1}%
7423   \ifnumberedpar@
7424     \ifledRcol%
7425       \xright@appenditem{\noexpand\vl@dcnote{\expandonce\content}}{%
7426         \to\inserts@listR
7427         \global\advance\insert@countR \@ne%
7428       }%
7429     \else%
7430       \xright@appenditem{\noexpand\vl@dcnote{\expandonce\content}}{%
7431         \to\inserts@list
7432         \global\advance\insert@count \@ne%
7433       }%
7434     \fi%
7435   \fi\ignorespaces%
7436   \endgroup%
7437 }%

```

```

7434 }%
7435
7436 \newcommand*{\l@disnote}[1]{%
7437   \begingroup%
7438   \newcommand{\content}{#1}%
7439   \ifnumberedpar%
7440     \ifledRcol%
7441       \xright@appenditem{\noexpand\l@disnote{\expandonce\content}}%
7442         \to\inserts@listR%
7443       \global\advance\insert@countR \@ne%
7444     \else%
7445       \xright@appenditem{\noexpand\l@disnote{\expandonce\content}}%
7446         \to\inserts@list%
7447       \global\advance\insert@count \@ne%
7448     \fi%
7449   \fi\ignorespaces%
7450 \endgroup%
7451 }%
7452
7453 \newcommand*{\l@dosnote}[1]{%
7454   \begingroup%
7455   \newcommand{\content}{#1}%
7456   \ifnumberedpar%
7457     \ifledRcol%
7458       \xright@appenditem{\noexpand\l@dosnote{\expandonce\content}}%
7459         \to\inserts@listR%
7460       \global\advance\insert@countR \@ne%
7461     \else%
7462       \xright@appenditem{\noexpand\l@dosnote{\expandonce\content}}%
7463         \to\inserts@list%
7464       \global\advance\insert@count \@ne%
7465     \fi%
7466   \fi\ignorespaces%
7467 \endgroup%
7468 }%
7469
7470 %

```

\vl@dlsnote Put the left/right text into boxes, but just save the moveable text. **\l@dcsnotetext**, **\vl@drsnote** **\l@dcsnotetext@l** and **\l@dcsnotetext@r** are etoolbox's lists which will store the content of sidenotes. We store the content in lists, because we need to loop later on them, in case many sidenote co-exist for the same line. That is there some special test **\vl@disnote** to do, in order to:

- Store the content of **\ledsidenote** to **\l@dcsnotetext** in any cases.
- Store the content of **\rightsidenote** to:
 - **\l@dcsnotetext** if **\ledsidenote** is to be put on right.
 - **\l@dcsnotetext@r** if **\ledsidenote** is to be put on left.

- Store the content of `\leftsidenote` to:
 - `\l@dcstotetext` if `\ledsidenote` is to be put on left.
 - `\l@dcstotetext@l` if `\ledsidenote` is to be put on right.

`\vl@disnote` and `\vl@dosnote` just call `\vl@dlsnote` or `\vl@drsnote`, depending of the page.

```

7471 \newcommand*{\vl@dlsnote}[1]{%
7472   \ifledRcol@%
7473     \@l@tempcntb=\sidenote@marginR%
7474     \ifnum\@l@tempcntb>\@ne%
7475       \advance\@l@tempcntb by\page@numR%
7476     \fi%
7477   \else%
7478     \@l@tempcntb=\sidenote@margin%
7479     \ifnum\@l@tempcntb>\@ne%
7480       \advance\@l@tempcntb by\page@num%
7481     \fi%
7482   \fi%
7483   \ifodd\@l@tempcntb%
7484     \listgadd{\l@dcstotetext@l}{#1}%
7485   \else%
7486     \listgadd{\l@dcstotetext}{#1}%
7487   \fi
7488 }
7489 \newcommand*{\vl@drsnote}[1]{%
7490   \ifledRcol@%
7491     \@l@tempcntb=\sidenote@marginR%
7492     \ifnum\@l@tempcntb>\@ne%
7493       \advance\@l@tempcntb by\page@numR%
7494     \fi%
7495   \else%
7496     \@l@tempcntb=\sidenote@margin%
7497     \ifnum\@l@tempcntb>\@ne%
7498       \advance\@l@tempcntb by\page@num%
7499     \fi%
7500   \fi%
7501   \ifodd\@l@tempcntb%
7502     \listgadd{\l@dcstotetext}{#1}%
7503   \else%
7504     \listgadd{\l@dcstotetext@r}{#1}%
7505   \fi%
7506 }
7507 \newcommand*{\vl@dcstote}[1]{\listgadd{\l@dcstotetext}{#1}}
7508
7509 \newcommand{\vl@disnote}[1]{%
7510   \ifledRcol@%
7511     \@tempcnta=\page@numR%
7512   \else%
```

```

7513 \tempcnta=\page@num%
7514 \fi%
7515 \ifodd\tempcnta% ODD => right page => inner side = left side
7516 \vl@dlsnote{#1}%
7517 \else%
7518 \vl@drsnote{#1}%
7519 \fi%
7520 }%
7521
7522 \newcommand{\vl@dosnote}[1]{%
7523 \ifledRcol%
7524 \tempcnta=\page@num%
7525 \else%
7526 \tempcnta=\page@num%
7527 \fi%
7528 \ifodd\tempcnta% ODD => right page => outer side = right side
7529 \vl@drsnote{#1}%
7530 \else%
7531 \vl@dlsnote{#1}%
7532 \fi%
7533 }%
7534
7535 %

```

`\setl@dlp@rbox` `\setl@dlprbox{<lednums>}{<tag>}{<text>}` puts `<text>` into the `\l@dlp@rbox` box. And similarly for the right side box. It is these boxes that finally get displayed in the margins.

```

7536 \newcommand*\setl@dlp@rbox[1]{%
7537 \begingroup%
7538 \parindent\z@\hsize=\ledlsnotewidth%
7539 \ledlsnotefontsetup%We kept it outside of the vbox, because can affect
the ragging
7540 \global\setbox\l@dlp@rbox%
7541 \ifleftnoteup%
7542 =\vbox to\z@{\ledlsnotefontsetup\vss #1}%We put \
ledlsnotefontsetup inside footnote because required for color command. Note
the {} to keep setting local.
7543 \else%
7544 =\vbox to 0.70\baselineskip{\ledlsnotefontsetup\strut#1\vss}%
7545 \fi%
7546 \endgroup%
7547 }
7548
7549 \newcommand*\setl@drp@rbox[1]{%
7550 \begingroup%
7551 \parindent\z@\hsize=\ledrsnotewidth%
7552 \ledrsnotefontsetup%We kept it outside of the vbox, because can affect
the ragging
7553 \global\setbox\l@drp@rbox%

```

```

7554 \ifrightnoteup%
7555     =\vbox to\z@{\ledrsnotefontsetup\vss#1}}%We put \ledrsnotefontsetup
inside footnote because required for color command. Note the {} to keep
setting local.
7556 \else%
7557     =\vbox to0.7\baselineskip{\ledrsnotefontsetup\strut#1\vss}}%
7558 \fi%
7559 \endgroup%
7560 }%
7561 \newif\ifleftnoteup
7562 \leftnoteuptrue
7563 %

```

\@sidenotesep This macro is used to separate sidenotes of the same line.

```

7564 \newcommand{\setsidenotesep}[1]{\gdef\@sidenotesep{#1}}
7565 \newcommand{\@sidenotesep}{, }
7566 %

```

\affixside@note This macro puts any moveable sidenote text into the left or right sidenote box, depending on which margin it is meant to go in. It's a very much stripped down version of **\affixline@num**.

Before do it, we concatenate all moveable sidenotes of the line, using **\@sidenotesep** as separator. It is the result that we put on the sidenote.

```

7567 \newcommand*{\affixside@note}{%
7568     \prepare@edindex@for@note{\the\page@num|\the\line@num|\the\subline@num|\
the\page@num|\the\line@num|\the\subline@num}%
7569     \def\sidenotecontent@{}%
7570     \numgdef{\itemcount@}{0}%
7571     \def\do##1{%
7572         \ifnumequal{\itemcount@}{0}%
7573         {%
7574             \appto\sidenotecontent@{##1}}% Not print not separator before
the 1st note
7575             {\appto\sidenotecontent@{\@sidenotesep ##1}}%
7576         }%
7577         \numgdef{\itemcount@}{\itemcount@+\@ne}%
7578     }%
7579     \dolistloop{\l@dcnotesetext}%
7580     \ifnumgreater{\itemcount@}{1}{\led@err@ManySidenotes}{}%
7581 %

```

And we do the same for left and right notes (not movable).

```

7582 \gdef\@templ@d{%
7583 \gdef\@templ@n{\l@dcnotesetext\l@dcnotesetext@l\l@dcnotesetext@r}%
7584 \ifx\@templ@d\@templ@n \else%
7585     \if@twocolumn%
7586         \if@firstcolumn%

```

```

7587 \setl@dlp@rbox{##1}{\sidenotecontent@}%
7588 \else%
7589 \setl@drp@rbox{\sidenotecontent@}%
7590 \fi%
7591 \else%
7592 \l@dttempcntb=\sidenote@margin%
7593 \ifnum\l@dttempcntb>\@ne%
7594 \advance\l@dttempcntb by\page@num%
7595 \fi%
7596 \ifodd\l@dttempcntb%
7597 \setl@drp@rbox{\sidenotecontent@}%
7598 \gdef\sidenotecontent@{}%
7599 \numgdef{\itemcount@}{0}%
7600 \dolistloop{\l@dcnotetext@l}%
7601 \ifnumgreater{\itemcount@}{1}{\led@err@ManyLeftnotes}{}%
7602 \setl@dlp@rbox{\sidenotecontent@}%
7603 \else%
7604 \setl@dlp@rbox{\sidenotecontent@}%
7605 \gdef\sidenotecontent@{}%
7606 \numgdef{\itemcount@}{0}%
7607 \dolistloop{\l@dcnotetext@r}%
7608 \ifnumgreater{\itemcount@}{1}{\led@err@ManyRightnotes}{}%
7609 \setl@drp@rbox{\sidenotecontent@}%
7610 \fi%
7611 \fi%
7612 \fi%
7613 \advance\@edindex@fornote@m@ne%
7614 }
7615 %

```

XXVII Minipages and such

We can put footnotes into minipages. The preparatory code has been set up earlier, all that remains is to ensure that it is available inside a minipage box. This requires some alteration to the kernel code, specifically the `\@iiiminipage` and `\endminipage` macros. We will arrange this so that additional series can be easily added.

`\l@dfeetbeginmini` These will be the hooks in `\@iiiminipage` and `\endminipage`.
`\l@dfeetendmini` They can be extended to handle other things if necessary.

```

7616 \ifnoledgroup@ \else%
7617 \newcommand*{\l@dfeetbeginmini}{\@ledgrouptrue\l@dedbeginmini\l@dfambeginmini}
7618 \newcommand*{\l@dfeetendmini}{%
7619 \IfStrEq{critical-familiar}{\@mpfnpos}%
7620 {\l@dedendmini\l@dfamendmini}%
7621 {%
7622 \IfStrEq{familiar-critical}{\@mpfnpos}%
7623 {\l@dfamendmini\l@dedendmini}%

```

```

7624         {\do@feet@custom@order{mp@}{\@mpfnpos}}}%
7625     }%
7626 }%
7627 %

```

`\l@dedbeginmini` These handle the initiation and closure of critical footnotes in a minipage environment.
`\l@dedendmini`
`\mp@append@Xnotes`

```

7628 \newcommand*{\l@dedbeginmini}{%
7629   \unless\ifnocritical@%
7630   \def\do##1{%
7631     \csletcs{v##1footnote}{mpv##1footnote}%
7632   }%
7633   \dolistloop{\@series}%
7634   \fi%
7635 }
7636 \newcommand*{\l@dedendmini}{%
7637   \unless\ifnocritical@%
7638   \ifl@dpairing%
7639     \ifledRcol%
7640       \flush@notesR%
7641     \else%
7642       \flush@notes%
7643     \fi%
7644   \fi
7645   \def\do##1{%
7646     \mp@append@Xnotes{##1}%
7647   }%
7648   \dolistloop{\@series}%
7649   \fi%
7650 }%
7651 \newcommand{\mp@append@Xnotes}[1]{%
7652   \ifvoid\csuse{mp#1footins}\else%
7653     \ifl@dpairing%
7654       \ifparledgroup%
7655         \ifledRcol%
7656           \dingdef{\parledgroup@beforenotesR}{\parledgroup@beforenotesR+\skip
\@nameuse{mp#1footins}}}%
7657         \else%
7658           \dingdef{\parledgroup@beforenotesL}{\parledgroup@beforenotesL+\
skip\@nameuse{mp#1footins}}}%
7659         \fi%
7660       \fi%
7661     \fi%
7662   \ifcsstring{series@display#1}{paragraph}{\}%
7663   \setbox\@nameuse{mp#1footins}=\vbox{%
7664     \csuse{Xnotefontsize@#1}%
7665     \ifcsdef{Xhsize\csuse{series@display#1}@#1}{%
7666       \hsize\csuse{Xhsize\csuse{series@display#1}@#1}%
7667     }{\}%
7668     \noindent\csuse{Xtxtbeforenotes@#1}%

```

```

7669 \unvbox\@nameuse{mp#1footins}%
7670 \@parboxrestore%
7671 }%
7672 }%
7673 \csuse{mp#1footgroup}{#1}%
7674 \fi%
7675 }%
7676 %

```

`\l@dfambeginmini` These handle the initiation and closure of familiar footnotes in a minipage environment.

```

\l@dfamendmini
\mp@append@notesX
7677 \newcommand*\l@dfambeginmini{%
7678 \unless\ifnofamiliar%
7679 \def\do##1{\csletcs{vfootnote##1}{mpvfootnote##1}}%
7680 \dolistloop{\@series}%
7681 \fi%
7682 }%
7683
7684 \newcommand*\l@dfamendmini{%
7685 \unless\ifnofamiliar%
7686 \def\do##1{%
7687 \mp@append@notesX{##1}%
7688 }%
7689 \dolistloop{\@series}%
7690 \fi%
7691 }%
7692 \newcommand{\mp@append@notesX}[1]{%
7693 \ifvoid\csuse{mpfootins#1}\else%
7694 \ifcsstring{series@displayX#1}{paragraph}{%
7695 \setbox\@nameuse{mpfootins#1}=\vbox{%
7696 \csuse{notefontsizeX#1}%
7697 \ifcsdef{hsize\csuse{series@display#1}X#1}{%
7698 \hsize\csuse{hsize\csuse{series@display#1}X#1}%
7699 }{}%
7700 \noindent\csuse{txtbeforenotesX#1}%
7701 \unvbox\@nameuse{mpfootins#1}%
7702 \@parboxrestore%
7703 }%
7704 }%
7705 \csuse{mpfootgroup#1}{#1}%
7706 \fi%
7707 }%
7708 %

```

`\@iiiminipage` This is our extended form of the kernel `\@iiiminipage` defined in `ltboxes.dtx`.

```

7709 \patchcmd%
7710 {\@iiiminipage}%
7711 {\let\@footnotetext\@mpfootnotetext}%
7712 {\let\@footnotetext\@mpfootnotetext\l@dfeetbeginmini}%

```

```

7713 {}%
7714 {\led@error@fail@patch@iiiminipage}%
7715 %

```

`\endminipage` This is our extended form of the kernel `\endminipage` defined in `ltboxes.dtx`.

```

7716 \patchcmd%
7717 {\endminipage}%
7718 {\footnoterule}%
7719 {\footnoterule\l@advance@parledgroup@beforenormalnotes}%
7720 {}%
7721 {\led@error@fail@patch@endminipage}
7722
7723 \patchcmd%
7724 {\endminipage}%
7725 {\@minipagefalse}%
7726 {\l@dfeetendmini\@minipagefalse}%
7727 {}%
7728 {\led@error@fail@patch@endminipage}
7729
7730 %

```

`\l@dunboxmpfoot` `\ldunboxmpfoot` insert normal footnotes for `ledgroup`.

`\advance@parledgroup@beforenormalnotes`

```

7731 \newcommand*{\l@dunboxmpfoot}{%
7732   \vskip\skip\@mpfootins
7733   \normalcolor
7734   \footnoterule
7735   \l@advance@parledgroup@beforenormalnotes
7736   \unvbox\@mpfootins%
7737 }
7738 %

```

When using parallel `ledgroup`, we need to store the vertical space added before footnote, in order to compensate them between left and right pages.

```

7739 \newcommand{\l@advance@parledgroup@beforenormalnotes}{%
7740   \ifparledgroup
7741     \ifl@pairing
7742       \ifledRcol
7743         \dimdef{\parledgroup@beforenotesR}{\parledgroup@beforenotesR+
skip\@mpfootins}
7744       \else
7745         \dimdef{\parledgroup@beforenotesL}{\parledgroup@beforenotesL+
skip\@mpfootins}
7746       \fi
7747     \fi
7748   \fi
7749 }
7750 %

```

`ledgroup` This environment puts footnotes at the end, even if that happens to be in the middle of a page, or crossing a page boundary. It is a sort of unboxed, fixed width minipage.

```

7751 \newenvironment{ledgroup}{%
7752 \resetprevpage@num%
7753 \def\@mpfn{mpfootnote}\def\thempfn{\thempfootnote}\c@mpfootnote\z@%
7754 \let\@footnotetext\@mpfootnotetext
7755 \l@dfetbeginmini%
7756 }{%
7757 \par
7758 \unskip
7759 \ifvoid\@mpfootins\else
7760 \l@dunboxmpfoot
7761 \fi
7762 \l@dfetendmini%
7763 \@ledgroupfalse%
7764 }
7765 }
7766
7767
7768 %

```

`ledgroupsize` `\begin{ledgroupsize}[\langle pos \rangle]{\langle width \rangle}`

This environment puts footnotes at the end, even if that happens to be in the middle of a page, or crossing a page boundary. It is a sort of unboxed, variable `\langle width \rangle` minipage. The optional `\langle pos \rangle` controls the sideways position of numbered text.

```

7769 \newenvironment{ledgroupsize}[2][l]{%
7770 %

```

Set the various text measures.

```

7771 \hspace #2\relax
7772 %

```

Initialize fills for centering.

```

7773 \let\ledllfill\hfil
7774 \let\ledrlfill\hfil
7775 \def\@tempa{#1}\def\@tempb{1}%
7776 %

```

Left adjusted numbered lines

```

7777 \ifx\@tempa\@tempb
7778 \let\ledllfill\relax
7779 \else
7780 \def\@tempb{r}%
7781 \ifx\@tempa\@tempb
7782 %

```

Right adjusted numbered lines

```

7783 \let\ledrlfill\relax
7784 \fi
7785 \fi
7786 %

```

Set up the footnoting.

```

7787 \def\@mpfn{mpfootnote}\def\thempfn{\thempfootnote}\c@mpfootnote\z@
7788 \let\@footnotetext\@mpfootnotetext
7789 \l@dfetbeginmini%
7790 }{%
7791 \par
7792 \unskip
7793 \ifvoid\@mpfootins\else
7794 \l@dunboxmpfoot
7795 \fi
7796 \l@dfetendmini%
7797 }
7798 %
7799 %

```

Close the \ifnoledgroup@\else.

```

7800 \fi%
7801 %

```

`\ifledgroupnotesL@` These boolean tests check if we are in the notes of a ledgroup. If we are, we do not
`\ifledgroupnotesR@` number the lines. It could be useful for parallel ledgroup of `reledpar`.

```

7802 \newif\ifledgroupnotesL@
7803 \newif\ifledgroupnotesR@
7804 %

```

XXVIII Indexing

Here is some code for indexing using page and line numbers.

XXVIII.1 Looking on package order

First, ensure that `imakeidx` or `indextools` is loaded *before* `eledmac`.

```

7805 \AtBeginDocument{%
7806 \unless\ifl@imakeidx%
7807 \@ifpackageloaded{imakeidx}{\led@error@PackageAfterEledmac{imakeidx}}{}%
7808 \fi%
7809 \unless\ifl@indextools%
7810 \@ifpackageloaded{indextools}{\led@error@PackageAfterEledmac{indextools}}{}%
7811 \fi%

```

```

7812 \unless\ifl@footmisc%
7813 \@ifpackageloaded{footmisc}{\led@error@PackageAfterEledmac{footmisc}}{}
7814 %
7815 \fi%
7816 %

```

XXVIII.2 Auxiliary macros for `\edindex`

`\pagelinesep` In order to get a correct line number we have to use the label/ref mechanism. These macros are for that.

```

\edindexlab
\c@labidx
7817 \newcommand{\pagelinesep}{-}
7818 \newcommand{\edindexlab}{$&}
7819 \newcounter{labidx}
7820 \setcounter{labidx}{0}
7821 %
7822 %

```

`\doedindexlabel` This macro sets an `\edlabel`.

```

7823 \newcommand{\doedindexlabel}{%
7824 \stepcounter{labidx}%
7825 \edlabel{\edindexlab\thelabidx}%
7826 }
7827 %
7828 %

```

`\thepageline` This macro makes up the page/line number combo from the label/ref. The associated counter is never directly used, but it is required in order to not have any error message with `\edgls`.

```

7829 \newcounter{pageline}%
7830 \renewcommand{\thepageline}{%
7831 \thepage%
7832 \pagelinesep%
7833 \xlineref{\edindexlab\thelabidx}%
7834 }
7835 %

```

`\thestartpageline` These macros make up the page/line start/end number when the `\edindex` command is called in critical notes.

```

\thepageline
\theendpageline
7836 \newcommand{\thestartpageline}{%
7837 \l@dparsedstartpage%
7838 \pagelinesep%
7839 \l@dparsedstartline%
7840 }
7841 \newcommand{\theendpageline}{%

```

```

7842 \l@dparsedendpage%
7843 \pagelinesep%
7844 \l@dparsedendline%
7845 }
7846 %

```

XXVIII.3 Code specific to \edindex in critical footnotes

\@edindex@fornote@ This counter is incremented at the beginning of each note (either a footnote or a sidenote), and decremented at the end of each note. If its value is greater than 0, that means we are inside a note.

```

7847 \newcount\@edindex@fornote@
7848 %

```

\prepare@edindex@fornote This macro is called at the beginning of each critical note. It switches some parameters, to allow index referring to this note, with reference to page and line number. It also defines \@ledinnote@command which will be printed as an encapsulating command after the |.

```

7849 \newcommand{\prepare@edindex@fornote}[1]{%
7850   \l@dp@rsefootspec#1|}%
7851   \advance\@edindex@fornote@\@ne%
7852 }
7853 %

```

\get@edindex@ledinnote@command The \get@edindex@ledinnote@command macro defines a \@ledinnote@command command which is added as an attribute (text inserted after |) of the next index entry. Consequently, we write the definition of the location reference attribute in the .xdy file.

```

7854 \newcommand{\get@edindex@ledinnote@command}{%
7855   \ifxindy@%
7856     \gdef\@ledinnote@command{%
7857       ledinnote\thelabidx%
7858     }%
7859     \ifxindyhyperref@%
7860       \immediate\write\eledmac@xindy@out{%
7861         (define-attributes ("ledinnote\thelabidx"))^^J
7862         \space\space(markup-locref^^J
7863         \eledmacmarkuplocrefdepth^^J
7864         :open "\string\ledinnote[\edindexlab\thelabidx]{\@index@command
7855       }{"^^J
7865         :close "}"^^J
7866         :attr "ledinnote\thelabidx"^^J
7867       )
7868     }%
7869   \else%
7870     \immediate\write\eledmac@xindy@out{%

```

```

7871 (define-attributes ("ledinnote\thelabidx"))^^J
7872 \space\space(markup-locref^^J
7873 \eledmacmarkuplocrefdepth^^J
7874 :open "\string\ledinnote{\@index@command}{\"^^J
7875 :close "}"^^J
7876 :attr "ledinnote\thelabidx"^^J
7877 )
7878 }%
7879 \fi%
7880 %

```

If we do not use xindy option, \@ledinnote@command will produce something like ledinnote{formattingcommand}.

```

7881 \else%
7882 \gdef\@ledinnote@command{%
7883 ledinnote[\edindexlab\thelabidx]{\@index@command}%
7884 }%
7885 \fi%
7886 }
7887 %

```

XXVIII.4 Analysis of command in indexed text

`\get@index@command` This macro is used to analyze if a text to be indexed has a command after a |.

```

7888 \def\get@index@command#1|#2+{%
7889 \gdef\@index@txt{#1}%
7890 \gdef\@index@command{#2}%
7891 \xdef\@index@parenthesis{}%
7892 \IfBeginWith{\@index@command}{(}{%
7893 \StrGobbleLeft{\@index@command}{1}{\@index@command@}%
7894 \global\let\@index@command\@index@command@%
7895 \xdef\@index@parenthesis{(%
7896 }%
7897 \IfBeginWith{\@index@command}{)}{%
7898 \StrGobbleLeft{\@index@command}{1}{\@index@command@}%
7899 \global\let\@index@command\@index@command@%
7900 \xdef\@index@parenthesis{)%
7901 }%
7902 }
7903 %

```

XXVIII.5 Code for the formatted index

`\ledinnote` These macros are used to specify that an index reference points to a note. Arguments of `\ledinnote` are: #1 (optional): the label for the hyperlink, #2: command applied to the number, #3: the number itself.

`\ledinnotehyperpage`

`\ledinnotemark`

```

7904 \newcommandx{\ledinnote}[3][1,usedefault]{%
7905   \ifboolexpr{%
7906     test{\ifdefequal{\iftrue}{\ifHy@hyperindex}}%
7907     or%
7908     bool {xindyhyperref@}%
7909   }%
7910   {%
7911     \csuse{#2}{\hyperlink{#1}{\ledinnotemark{#3}}}%
7912   }%
7913   {%
7914     \csuse{#2}{\ledinnotemark{#3}}%
7915   }%
7916 }%
7917 \newcommand{\ledinnotehyperpage}[2]{\csuse{#1}{\ledinnotemark{\hyperpage
7918 {#2}}}}%
7919 \newcommand{\ledinnotemark}[1]{#1\emph{n}}%
7920 %

```

XXVIII.6 Main code

Eledmac and ledmac were using the specific indexing tools of the memoir in order to allow multiple index. However, eledmac used imakeidx or indextools tools when one these two package was loaded. This system forced to maintained a double code, which was not very useful. Since reledmac, we use only the imakeidx or indextools tools.

The memoir class provides more flexible indexing than the standard classes. We need different code if the memoir class is being used, except if imakeidx or indextools is used.

```

\edindex Write the index information to the idx file.
\@wredindex
\dummy@edindex
7920 \newcommandx{\@wredindex}[2][1=\expandonce\jobname,usedefault]{%#1 = the
index name, #2 = the text
7921   \begingroup%
7922     \let\emph\@firstofone%
7923     \let\textbf\@firstofone%
7924     \let\textit\@firstofone%
7925     \let\textmd\@firstofone%
7926     \let\textnormal\@firstofone%
7927     \let\textrm\@firstofone%
7928     \let\textsc\@firstofone%
7929     \let\textsf\@firstofone%
7930     \let\textsl\@firstofone%
7931     \let\texttt\@firstofone%
7932     \let\textup\@firstofone%
7933     \xdef\@tmp{#2}%To be used in IfSubStr instead of #2 directly. Avoid
some expansion bugs (for example with \edindex{textsc{something}})
7934   \endgroup%
7935   \ifl@imakeidx%

```

```

7936 \ifnum\@edindex@fornote@>\z@%
7937 \IfSubStr[1]{\@tmp}{|}{\get@index@command#2+}{\get@index@command#2|+}
%
7938 \get@edindex@ledinnote@command%
7939 \expandafter\imki@wrindexentry{#1}{\@index@txt|(\@ledinnote@command
}{\thestartpageline}%
7940 \expandafter\imki@wrindexentry{#1}{\@index@txt|)\@ledinnote@command
}{\theendpageline}%
7941 \else%
7942 \get@edindex@hyperref{#2}%
7943 \imki@wrindexentry{#1}{\@index@txt\@edindex@hyperref}{\thepageline}%
7944 \fi%
7945 \else%
7946 \ifnum\@edindex@fornote@>\z@%
7947 \IfSubStr[1]{\@tmp}{|}{\get@index@command#2+}{\get@index@command#2|+}
%
7948 \get@edindex@ledinnote@command%
7949 \expandafter\protected@write\@indexfile{}%
7950 {\string\indexentry{\@index@txt|(\@ledinnote@command}{\thestartpageline}
}%
7951 }%
7952 \expandafter\protected@write\@indexfile{}%
7953 {\string\indexentry{\@index@txt|)\@ledinnote@command}{\theendpageline}
}%
7954 }%
7955 \else%
7956 \protected@write\@indexfile{}%
7957 {\string\indexentry{#2}{\thepageline}
}%
7958 }%
7959 \fi%
7960 \fi%
7961 \endgroup
7962 \@esphack%
7963 }
7964 %

```

Need to add the definition of `\edindex` to `\makeindex`, and initialise `\edindex` to do nothing.

```

7965 \pretocmd{\makeindex}{%
7966 \def\edindex{%
7967 \ifboolexpr{bool{numbering} or bool{numberingR} or bool{
l@dprintingpages} or bool{l@dprintingcolumns}}{%
7968 \@bsphack%
7969 \doedindexlabel%
7970 \begingroup%
7971 \@sanitize%
7972 \@wredindex%
7973 }%
7974 {%
7975 \led@warn@edinde@outsidenumbering%
7976 \index%
7977 }%

```

```

7978 }%
7979 }%
7980 {}%
7981 {\led@error@fail@patch@makeindex}%
7982 \newcommand{\edindex}[1]{\@bsphack\@esphack}
7983 \newcommand{\dummy@edindex}[2][1=\expandonce\jobname,usedefault]{}%
7984 \newcommand{\disable@edindex}{\let\old@edindex\edindex\let\edindex\
  dummy@edindex}%
7985 \newcommand{\restore@edindex}{\let\edindex\old@edindex}%
7986 %

```

XXVIII.7 Hyperlink

\hyperlinkformat \hyperlinkformat command is to be used to have both a internal hyperlink and a format, when indexing.

```

7987 \newcommand{\hyperlinkformat}[3]{%
7988   \ifstrempy{#1}%
7989     {\hyperlink{#2}{#3}}%
7990     {\csuse{#1}{\hyperlink{#2}{#3}}}%
7991   }%
7992 %

```

\hyperlinkR \hyperlinkR command is to be used to create a internal hyperlink and \ledRflag, when indexing.

```

7993 \newcommand{\hyperlinkR}[2]{%
7994   \hyperlink{#1}{#2\@Rlineflag}%
7995 }%
7996 %
7997 %

```

\hyperlinkformatR \hyperlinkformatR command is to be used to create a internal hyperlink, a format and a \@Rlineflag, when indexing.

```

7998 \newcommand{\hyperlinkformatR}[3]{%
7999   \hyperlinkformat{#1}{#2}{#3\@Rlineflag}%
8000 }%
8001 %
8002 %

```

\get@edindex@hyperref \get@edindex@hyperref is to be used to define the \@edindex@hyperref macro, which, in index, links to the point where the index was called (with hyperref).

```

8003 \newcommand{\get@edindex@hyperref}[1]{%
8004 %

```

We have to disable temporary spaces to work through a xstring bug (or feature?)

```

8005 \edef\temp@{%
8006 \catcode\ =9 %space need for catcode
8007 \detokenize{#1}%For active character in unicode
8008 \catcode\ =10 % space need for catcode
8009 }%
8010 %

```

Now, we define `\@edindex@hyperref` if the `hyperindex` of `hyperref` is enabled.

```

8011 \ifdefequal{\iftrue}{\ifHy@hyperindex}{%
8012 \IfSubStr{\temp@}{|}%
8013 {\get@index@command#1+%
8014 \ifledRcol%
8015 \gdef\@edindex@hyperref{|\@index@parenthesis %space kept
8016 hyperlinkformatR{\@index@command}%
8017 {\edindexlab\thelabidx}}%
8018 \else%
8019 \gdef\@edindex@hyperref{|\@index@parenthesis %space kept
8020 hyperlinkformat{\@index@command}%
8021 {\edindexlab\thelabidx}}%
8022 \fi%
8023 }%
8024 {\get@index@command#1|+%
8025 \ifledRcol%
8026 \gdef\@edindex@hyperref{|\hyperlinkR{\edindexlab\thelabidx}}%
8027 \else%
8028 \gdef\@edindex@hyperref{|\hyperlink{\edindexlab\thelabidx}}%
8029 \fi%
8030 }%
8031 }%
8032 %

```

```

8033 % If we use both xindy and hyperref, first get the \protect\cs{
index@command} command.
8034 % Then define \protect\cs{@edindex@hyperref} in the form \verb+eledmacXXX+
8035 % \begin{macrocode}
8036 {\ifxindyhyperref%
8037 \IfSubStr{\temp@}{|}%
8038 {\get@index@command#1+%
8039 {\get@index@command#1|+%
8040 \gdef\@edindex@hyperref{|\eledmac\thelabidx}%
8041 %

```

If we start a reference range by a opening parenthesis, store the `\thelabidx` for the current `\edindex`, then define `\@edindex@hyperref` in the form `| (eledmac\thelabidx`.

```

8042 \IfStrEq{\@index@parenthesis}{(}%
8043 {%
8044 \csxdef{xindyparenthesis@\@index@txt}{\thelabidx}%
8045 \gdef\@edindex@hyperref{|(eledmac\thelabidx}%
8046 }%
8047 {}%

```

8048 %

This `\thelabidx` will be called back at the closing parenthesis, to have the same number in `\@edindex@hyperref` command that we had at the opening parenthesis. `\@edindex@hyperref` start by a closing parenthesis, then followed by `eledmacXXX` where `XXX` is the `\thelabidx` of the opening `\edindex`.

```
8049 \IfStrEq{\@index@parenthesis}{})}%
8050 {%
8051 \xdef\@edindex@hyperref{|\)eledmac\csuse{xindyparenthesis@
\@index@txt}}}%
8052 \global\csundef{xindyparenthesis@\@index@txt}%
8053 }%
8054 %
```

Write in the `.xdy` file the attributes of the location.

```
8055 {%
8056 \immediate\write\eledmac@xindy@out{%
8057 (define-attributes ("eledmac\thelabidx"))^^J
8058 \space\space(markup-locoref^^J
8059 \eledmacmarkuplocorefdepth^^J
8060 :open "\string\hyperlink%
8061 \ifledRcol R\fi%
8062 {\edindexlab\thelabidx}%
8063 {\ifdefempty{\@index@command}%
8064 {}%
8065 {\@backslashchar\@index@command}%
8066 {"^^J
8067 :close "}}^^J
8068 :attr "eledmac\thelabidx"^^J
8069 )
8070 }%
8071 }%
8072 %
```

And now, in any other case.

```
8073 \else%
8074 \gdef\@index@txt{#1}%
8075 \gdef\@edindex@hyperref{}%
8076 \fi%
8077 }%
8078 }
8079 %
```

XXVIII.8 ‘innote’ and ‘notenumber’ option of `indextols` package

`\led@set@index@fornote`

The `\led@set@index@fornote` is called when a familiar footnote is inserted — and not when it is read — and changes the `\index` command depending of the option of the `indextools` package. Its only argument is the note series.

```

8080 \newcommand{\led@set@index@fornote}[1]{%
8081   \ifbool{indtl@innote}%
8082     {\let\index\nindex}%
8083     {}}%
8084   \ifbool{indtl@notenumber}%
8085     {%
8086       \renewcommand{\index}[2][\indtl@jobname]{%
8087         \orig@@index[##1]{%
8088           ##2|innotenumber{\this@footnoteX@reading}%
8089         }%
8090       }%
8091     }%
8092   {}}%
8093 }%
8094 %

```

`\led@reinit@index@fornote` The `\led@reinit@index@fornote` just reset the default value of `\index`.

```

8095 \newcommand{\led@reinit@index@fornote}{%
8096   \ifbool{indtl@innote}%
8097     {\let\index\orig@@index}%
8098     {}}%
8099   \ifbool{indtl@notenumber}%
8100     {\let\index\orig@@index}%
8101     {}}%
8102 }%
8103 %

```

XXIX Glossaries

Here, we define the `\gls`-like commands prefixed by `ed`, only if the package `glossaries` is loaded.

```

8104 \AtBeginDocument{%
8105   \@ifpackageloaded{glossaries}{%
8106     %

```

First those which arguments are `[<options>]{<label>}[<insert>]`.

```

8107   \gdef\edglsomo{}%
8108   \listgadd{\edglsomo}{gls}%
8109   \listgadd{\edglsomo}{Gls}%
8110   \listgadd{\edglsomo}{GLS}%
8111   \listgadd{\edglsomo}{glspl}%
8112   \listgadd{\edglsomo}{Glspl}%
8113   \listgadd{\edglsomo}{GLSpl}%
8114   \listgadd{\edglsomo}{glsstext}%
8115   \listgadd{\edglsomo}{GLstext}%
8116   \listgadd{\edglsomo}{GLStext}%
8117   \listgadd{\edglsomo}{Glsfirst}%

```

```

8118 \listgadd{\edglsomo}{GLSfirst}%
8119 \listgadd{\edglsomo}{Glsplural}%
8120 \listgadd{\edglsomo}{Glsplural}%
8121 \listgadd{\edglsomo}{GLSplural}%
8122 \listgadd{\edglsomo}{Glsfirstplural}%
8123 \listgadd{\edglsomo}{Glsfirstplural}%
8124 \listgadd{\edglsomo}{GLSfirstplural}%
8125 \listgadd{\edglsomo}{Glsname}%
8126 \listgadd{\edglsomo}{Glsname}%
8127 \listgadd{\edglsomo}{GLSname}%
8128 \listgadd{\edglsomo}{Glsymbol}%
8129 \listgadd{\edglsomo}{Glsymbol}%
8130 \listgadd{\edglsomo}{GLSsymbol}%
8131 \listgadd{\edglsomo}{Glsdesc}%
8132 \listgadd{\edglsomo}{Glsdesc}%
8133 \listgadd{\edglsomo}{GLSdesc}%
8134 \listgadd{\edglsomo}{Glsuseri}%
8135 \listgadd{\edglsomo}{Glsuseri}%
8136 \listgadd{\edglsomo}{GLSuseri}%
8137 \listgadd{\edglsomo}{Glsuserii}%
8138 \listgadd{\edglsomo}{Glsuserii}%
8139 \listgadd{\edglsomo}{GLSuserii}%
8140 \listgadd{\edglsomo}{Glsuseriii}%
8141 \listgadd{\edglsomo}{Glsuseriii}%
8142 \listgadd{\edglsomo}{GLSuseriii}%
8143 \listgadd{\edglsomo}{Glsuseriv}%
8144 \listgadd{\edglsomo}{Glsuseriv}%
8145 \listgadd{\edglsomo}{GLSuseriv}%
8146 \listgadd{\edglsomo}{Glsuserv}%
8147 \listgadd{\edglsomo}{Glsuserv}%
8148 \listgadd{\edglsomo}{GLSuserv}%
8149 \listgadd{\edglsomo}{Glsuservi}%
8150 \listgadd{\edglsomo}{Glsuservi}%
8151 \listgadd{\edglsomo}{GLSuservi}%
8152 \renewcommand{\do}[1]{%
8153 \expandafter\DeclareRobustCommand\csname ed#1\endcsname[3][1,3,
usedefault]{%
8154 \doedindexlabel%
8155 \ifdef{\hypertarget}{%
8156 \Hy@raisedlink@left{\hypertarget{pageline.\thepageline}{}}%
8157 }{}%
8158 \csname#1\endcsname[counter=pageline,##1]{##2}[##3]%
8159 }%
8160 \expandafter\WithSuffix\expandafter\DeclareRobustCommand\csname ed
#1\endcsname*[3][1,3,usedefault]{%
8161 \doedindexlabel%
8162 \ifdef{\hypertarget}{%
8163 \Hy@raisedlink@left{\hypertarget{pageline.\thepageline}{}}%
8164 }{}%
8165 \csname#1\endcsname*[counter=pageline,##1]{##2}[##3]%

```

```

8166 }%
8167 }%
8168 \dolistloop{\edglsomo}%
8169 %

```

Then those which arguments are [*options*]{*label*}{*link text*}.

```

8170 \gdef\edglsomm{%
8171 \listgadd\edglsomm{glsdisp}%
8172 \listgadd\edglsomm{glslink}%
8173 \renewcommand{\do}[1]{%
8174 \expandafter\DeclareRobustCommandx\csname ed#1\endcsname[3][1,
usedefault]{%
8175 \doedindexlabel%
8176 \ifdef{\hypertarget}{%
8177 \Hy@raisedlink@left{\hypertarget{pageline.\thepageline}}}%
8178 }{}%
8179 \csname#1\endcsname[counter=pageline,##1]{##2}{##3}%
8180 }%
8181 \expandafter\WithSuffix\expandafter\DeclareRobustCommandx\csname ed
#1\endcsname*[3][1,usedefault]{%
8182 \doedindexlabel%
8183 \ifdef{\hypertarget}{%
8184 \Hy@raisedlink@left{\hypertarget{pageline.\thepageline}}}%
8185 }{}%
8186 \csname#1\endcsname*[counter=pageline,##1]{##2}{##3}%
8187 }%
8188 }%
8189 \dolistloop{\edglsomm}%
8190 %

```

Then those which arguments are [*options*]{*label*}.

```

8191 \gdef\edglsom{%
8192 \listgadd\edglsom{glsadd}%
8193 \renewcommand{\do}[1]{%
8194 \expandafter\DeclareRobustCommandx\csname ed#1\endcsname[2][1,
usedefault]{%
8195 \doedindexlabel%
8196 \ifdef{\hypertarget}{%
8197 \Hy@raisedlink@left{\hypertarget{pageline.\thepageline}}}%
8198 }{}%
8199 \csname#1\endcsname[counter=pageline,##1]{##2}%
8200 }%
8201 \expandafter\WithSuffix\expandafter\DeclareRobustCommandx\csname ed
#1\endcsname*[2][1,usedefault]{%
8202 \doedindexlabel%
8203 \ifdef{\hypertarget}{%
8204 \Hy@raisedlink@left{\hypertarget{pageline.\thepageline}}}%
8205 }{}%
8206 \csname#1\endcsname*[counter=pageline,##1]{##2}%
8207 }%

```

```

8208 }%
8209 \dolistloop{\edglsom}%
8210 %

```

`\l@noexpands@edgl` is a macro to avoid expanding glossaries macros in `\edtext` first argument. It is called by `\no@expands`. Its definition is made dynamically.

```

\l@noexpands@edgl111 \def\l@noexpands@edgl{}%
8212 \renewcommand\do[1]{%
8213 \xappto\l@noexpands@edgl{%
8214 \noexpand\RenewDocumentCommand\csname ed#1\endcsname{omos}{}%
8215 }%
8216 }%
8217 \dolistloop{\edglsomo}%
8218 \renewcommand\do[1]{%
8219 \xappto\l@noexpands@edgl{%
8220 \noexpand\RenewDocumentCommand\csname ed#1\endcsname{omms}{}%
8221 }%
8222 }%
8223 \dolistloop{\edglsomm}%
8224 \renewcommand\do[1]{%
8225 \xappto\l@noexpands@edgl{%
8226 \noexpand\RenewDocumentCommand\csname ed#1\endcsname{oms}{}%
8227 }%
8228 }%
8229 \dolistloop{\edglsom}%
8230 }{\let\l@noexpands@edgl\relax}%
8231 }%
8232 %

```

XXX Verse

The original code is principally Wayne Sullivan's code from `edstanza`. However, the code has been many time modified by Maïeul Rouquette in order to obtain new features and improved compatibility with `reledpar`.

XXX.1 Hanging symbol management

`\@hangingsymbol` The macro `\@hangingsymbol` is used to insert a symbol on each hanging of verses. It is set by user level macro `\sethangingsymbol`.
`\sethangingsymbol` For example, in French typography, the symbol is '['. We obtain it by means of the following code:
`\ifinstanza`

```
\sethangingsymbol{[,}
```

The `\ifinstanza` boolean is used to ensure that we are in a stanza part.

```

8233 \def\@hangingsymbol{}
8234 \newcommand*\sethangingsymbol[1]{%

```

```

8235 \gdef\@hangingsymbol{#1}%
8236 }%
8237 \newif\ifinstanza
8238 %

```

`\inserthangingsymbol` The boolean `\ifinserthangingsymbol` is set to TRUE when `\@lock` is greater than 1, i.e. when we are not in the first line of a verse. The switch of `\ifinserthangingsymbol` is made in `\do@line` before the printing of line but after the line number calculation.

```

8239 \newif\ifinserthangingsymbol
8240 \newcommand{\inserthangingsymbol}{%
8241 \ifinserthangingsymbol%
8242 \ifinstanza%
8243 \@hangingsymbol%
8244 \fi%
8245 \fi%
8246 }
8247 %

```

XXX.2 Using & character

`\ampersand` Within a stanza the `\&` macro is going to be usurped. We need an alias in case an `&` needs to be typeset in a stanza. Define it rather than letting it in case some other package has already defined it.

```

8248 \newcommand*{\ampersand}{\char`\&}
8249
8250 %

```

XXX.3 Code category setting

`\stanza@count` Before we can define the main macros we need to save and reset some category codes.
`\stanzaindentbase` To save the current values we use `\next` and `\body` from the `\loop` macro.

```

8251 \chardef\body=\catcode`\@
8252 \catcode`\@=11
8253 \chardef\next=\catcode`\&
8254 \catcode`\&=\active
8255
8256 %

```

XXX.4 Stanza count and indent

A count register is allocated for counting lines in a stanza; also allocated is a dimension register which is used to specify the base value for line indentation; all stanza indentations are multiples of this value. The default value of `\stanzaindentbase` is 20pt.

```

8257 \newcount\stanza@count
8258 \newlength{\stanzaindentbase}
8259 \setlength{\stanzaindentbase}{20pt}
8260
8261 %

```

`\strip@szacnt` The indentations of stanza lines are non-negative integer multiples of the unit called `\stanzaindentbase`. To make it easier for the user to specify these numbers, some list macros are defined. These take numerical values in a list separated by commas and assign the values to special control sequences using `\mathchardef`. Though this does limit the range from 0 to 32767, it should suffice for most applications, including *penalties*, which will be discussed below.

`\setstanzavalues`

```

8262 \def\strip@szacnt#1,#2|{\def\@tempb{#1}\def\@tempa{#2|}}
8263 \newcommand*\setstanzavalues{[2]{\def\@tempa{#2,,|}%
8264   \stanza@count\z@
8265   \def\next{\expandafter\strip@szacnt\@tempa
8266     \ifx\@tempb\empty\let\next\relax\else
8267     \expandafter\mathchardef\csname #1@\number\stanza@count
8268     \@endcsname\@tempb\relax
8269     \advance\stanza@count\@ne\fi\next}%
8270   \next}
8271
8272 %

```

`\setstanzaindents` In the original edmac, `\setstanzavalues{sza}{\langle...⟩}` had to be called to set the indents, and similarly `\setstanzavalues{szp}{\langle...⟩}` to set the penalties. `\setstanzaindents` and `\setstanzapenalties` macros are a convenience to give the user one less thing to worry about (misspelling the first argument).

`\setstanzapenalties`

```

8273 \newcommand*\setstanzaindents{[1]{\setstanzavalues{sza}{#1}}
8274 \newcommand*\setstanzapenalties{[1]{\setstanzavalues{szp}{#1}}
8275 %
8276 %

```

`\managestanza@modulo` Since version 0.13, the `stanzaindentsrepetition` counter can be used when the indentation is repeated every *n* verses. The `\managestanza@modulo` is a command which modifies the counter `stanza@modulo`. The command adds 1 to `stanza@modulo`, but if `stanza@modulo` is equal to the `stanzaindentsrepetition` counter, the command restarts it.

```

8277 \newcounter{stanzaindentsrepetition}
8278 \newcount\stanza@modulo
8279
8280 \newcommand*\managestanza@modulo{[0]{%
8281   \advance\stanza@modulo\@ne%
8282   \ifnum\stanza@modulo>\value{stanzaindentsrepetition}%
8283   \stanza@modulo\@ne%
8284   \fi%

```

```
8285 }
8286 %
```

\stanzaindent The macro `\stanzaindent`, when called at the beginning of a verse, changes the indentation normally defined for this verse by `\setstanzaindent`. The starred version **\stanzaindent*** skips the current verse for the repetition of stanza indent.

```
8287 \newcommand{\stanzaindent}[1]{%
8288   \hspace{\dimexpr#1\stanzaindentbase-\parindent\relax}%
8289   \ignorespaces%
8290 }%
8291 \WithSuffix\newcommand\stanzaindent*[1]{%
8292   \stanzaindent{#1}%
8293   \global\advance\stanza@modulo-\@ne%
8294   \ifnum\stanza@modulo=0%
8295     \global\stanza@modulo=\value{stanzaindentrepetition}%
8296   \fi%
8297   \ignorespaces%
8298 }%
8299 %
```

XXX.5 Numbering stanza

Here, macro for numbering stanza. First, the stanza counter.

```
\thestanza00 \newcounter{stanza}
8301 \renewcommand{\thestanza}{%
8302   \textbf{\arabic{stanza}}%
8303 }
8304 %
```

\ifnumberstanza Then, macro to activate automatically numbering of stanza.

```
8305 \newif\ifnumberstanza%
8306 %
```

\@insertstanzanumber Now, macro called at the first line of of verse of a stanza.

```
8307 \newcommand{\@insertstanzanumber}[0]{%
8308   \ifnumberstanza%
8309     \ifl@pairing%
8310       \ifledRcol%
8311         \stanzanumwrapper{\thestanzaR}%
8312       \else%
8313         \stanzanumwrapper{\thestanzaL}%
8314       \fi%
8315     \else%
8316       \stanzanumwrapper{\thestanza}%
8317     \fi%
```

```

8318 \setline{1}%
8319 \fi%
8320 }%
8321 %

```

`\@advancestanzanumber` Also a command to advance the counter of stanza.

```

8322 \newcommand{\@advancestanzanumber}[0]{%
8323 \ifnumberstanza%
8324 \ifl@dpairing%
8325 \ifledRcol%
8326 \addtocounter{stanzaR}{1}%
8327 \else%
8328 \addtocounter{stanzaL}{1}%
8329 \fi%
8330 \else%
8331 \addtocounter{stanza}{1}%
8332 \fi%
8333 \fi%
8334 }%
8335 %

```

`\stanzanumwrapper` And finally, the wrapper for stanza number

```

8336 \newcommand{\stanzanumwrapper}[1]{%
8337 \flagstanza{#1}%
8338 }%
8339 %

```

XXX.6 Stanza number in note

Here, the command called when printing stanza number in notes.

```

8340 \newcommand{\printstanza}[0]{%
8341 \ifboolexpr{bool{l@dpairing} or bool{l@dprintingpages} or bool{
8342 l@dprintingcolumns}}{%
8343 \ifledRcol%
8344 \thestanzaR%
8345 \else%
8346 \thestanzaL%
8347 \fi%
8348 }{%
8349 \thestanza%
8350 }%
8351 %

```

XXX.7 Main work

`\stanza@line` Now we arrive at the main works. `\stanza@line` sets the indentation for the line and starts a numbered paragraph—each line is treated as a paragraph. `\stanza@hang` sets the hanging indentation to be used if the stanza line requires more than one print line.

`\stanza@hang`
`\sza@penalty`

If it is known that each stanza line will fit on one print line, it is advisable to set the hanging indentation to zero. `\sza@penalty` places the specified penalty following each stanza line. By default, this facility is turned off so that no penalty is included. However, the user may initiate these penalties to indicate good and bad places in the stanza for page breaking.

```

8352 \newcommand{\stanza@line}[2][1,2,usedefault]{%
8353   \ifnum\value{stanzaindentrepetition}=0
8354     \ifcsdef{sza@\number\stanza@count @}{%
8355       {%
8356         \parindent=\csname sza@\number\stanza@count @\endcsname\
stanzaindentbase%
8357       }{%
8358         \led@err@StanzaIndentNotDefined%
8359       }%
8360     \else
8361       \ifcsdef{sza@\number\stanza@modulo @}{%
8362         \parindent=\csname sza@\number\stanza@modulo @\endcsname\
stanzaindentbase%
8363         \managestanza@modulo%
8364       }%
8365       {%
8366         \led@err@StanzaIndentNotDefined%
8367       }%
8368     \fi
8369     \pstart[#1][#2]\stanza@hang\ignorespaces%
8370 }%
8371 \xdef\stanza@hang{\noexpand\leavevmode\noexpand\startlock
8372   \hangindent\expandafter
8373   \noexpand\csname sza@0@\endcsname\stanzaindentbase
8374   \hangafter\@ne}
8375 \def\sza@penalty{\count@\csname szp@\number\stanza@count @\endcsname
8376   \ifnum\count@>\@M\advance\count@-\@M\penalty-\else
8377   \penalty\fi\count@}
8378 %

```

`\@startstanza` Now we have the components of the `\stanza` macro, which appears at the start of a group of lines. This macro initializes the count and checks to see if hanging indentation and penalties are to be included. Hanging indentation suspends the line count, so that the enumeration is by verse line rather than by print line. If the print line count is desired, invoke `\let\startlock\relax` and do the same for `\endlock`. Here and above we have used `\xdef` to make the stored macros take up a bit less space, but it also makes them more obscure to the reader. Lines of the stanza are delimited by ampersands &.

`\@stopstanza`
`\AtEveryStopStanza`
`\AtEveryStanza`
`\AtStartEveryStanza`
`\BeforeEveryStopStanza`
`\newverse`

The last line of the stanza must end with `\&`.

```

8379 \xdef\@startstanza[#1][#2]{%
8380   \noexpand\instanzatrue\expandafter
8381   \begingroup%
8382   \catcode`\noexpand\&\active%
8383   \unexpanded{\newdimen\parindent@beforestanza%
8384   \parindent@beforestanza=\parindent}%Keep in memory the standard \
parindent
8385   \global\stanza@count\@ne\stanza@modulo\@ne
8386   \noexpand\ifnum\expandafter\noexpand\csname sz@0@\endcsname=\z@%
8387     \let\noexpand\stanza@hang\relax%
8388     \let\noexpand\endlock\relax%
8389   \noexpand\else%
8390     \interlinepenalty%
8391     \@M\rightskip\z@ plus 1fil\relax%
8392   \noexpand\fi%
8393   \noexpand\ifnum\expandafter\noexpand\csname szp@0@\endcsname=\z@%
8394     \let\noexpand\sza@penalty%
8395     \relax\noexpand\fi%
8396   \def\noexpand&{%
8397     \noexpand\newverse[] []}%
8398   \def\noexpand\&{\noexpand\@stopstanza}%
8399   \noexpand\@advancestanza@number%
8400   \noexpand\stanza@line[#1][#2]%
8401   \noexpand\@insertstanza@number%
8402   \let\par\relax\ignorespaces%No paragraph in verses
8403 }
8404
8405 \newcommandx{\stanza}[2][1,2,usedefault]{%
8406   \ifboolexpr{%
8407     not test{\ifdefvoid{\at@every@stanza}}%
8408     and test{\ifstrempy{#1}}%
8409     and test{\ifstrempy{#2}}}%
8410     {\@startstanza[] [\at@every@stanza] \at@start@every@stanza}%
8411     {\@startstanza[#1][#2] \at@start@every@stanza}%
8412   }%
8413
8414 \newcommandx{\@stopstanza}[2][1,2,usedefault]{%
8415   \unskip%
8416   \endlock%
8417   \ifboolexpr{%
8418     not test{\ifdefvoid{\at@every@stop@stanza}}%
8419     and test{\ifstrempy{#1}}%
8420     and test{\ifstrempy{#2}}}%
8421     {\before@every@stop@stanza\pend[] [\at@every@stop@stanza]}%
8422     {\before@every@stop@stanza\pend[#1][#2]}%
8423   \endgroup%
8424   \instanzafalse%
8425   \global\undef\parindent@beforestanza%
8426 }
8427

```

```

8428 \newcommand{\AtEveryStopStanza}[1]{%
8429   \ifstrempy{#1}%
8430   {\gdef\at@every@stop@stanza{}}%
8431   {\gdef\at@every@stop@stanza{\noindent#1}}%
8432 }%
8433 \WithSuffix\newcommand\AtEveryStopStanza*[1]{%
8434   \ifstrempy{#1}%
8435   {\gdef\at@every@stop@stanza{}}%
8436   {\gdef\at@every@stop@stanza{#1}}%
8437 }%
8438 \def\at@every@stop@stanza{%
8439
8440 \newcommand{\AtEveryStanza}[1]{%
8441   \ifstrempy{#1}%
8442   {\gdef\at@every@stanza{}}%
8443   {\gdef\at@every@stanza{\noindent#1}}%
8444 }%
8445 \WithSuffix\newcommand\AtEveryStanza*[1]{%
8446   \ifstrempy{#1}%
8447   {\gdef\at@every@stanza{}}%
8448   {\gdef\at@every@stanza{#1}}%
8449 }%
8450
8451
8452 \newcommand{\AtStartEveryStanza}[1]{%
8453   \ifstrempy{#1}%
8454   {\gdef\at@start@every@stanza{}}%
8455   {\gdef\at@start@every@stanza{#1}}%
8456 }%
8457 \def\at@start@every@stanza{%
8458
8459 \newcommand{\BeforeEveryStopStanza}[1]{%
8460   \ifstrempy{#1}%
8461   {\gdef\before@every@stop@stanza{}}%
8462   {\gdef\before@every@stop@stanza{#1}}%
8463 }%
8464 \def\before@every@stop@stanza{%
8465
8466 \newcommandx*\newverse}[4][1,2,3,4,usedefault]{%
8467   \unskip%
8468   \endlock\pend[#1][#3]\sza@penalty\global%
8469   \advance\stanza@count\@ne\stanza@line[#2][#4]%
8470 }
8471
8472
8473 %

```

\flagstanza Use `\flagstanza[len]{text}` at the start of a line to put *text* a distance *len* before the start of the line. The default for *len* is `\stanzaindentbase`.

```

8474 \newcommand*{\flagstanza}[2][\stanzaindentbase]{%
8475   \hskip -#1\llap{#2}\hskip #1\ignorespaces}
8476
8477 %

```

XXX.8 Restore catcode and penalties

The ampersand & is used to mark the end of each stanza line, except the last, which is marked with \&. This means that \halign may not be used directly within a stanza line. This does not affect macros involving alignments defined outside \stanza \&. Since these macros usurp the control sequence \&, the replacement \ampersand is defined to be used if this symbol is needed in a stanza. Also we reset the modified category codes and initialize the penalty default.

```

8478 \catcode`\&=\next
8479 \catcode`\@=\body
8480 \setstanzavalues{szp}{0}
8481
8482 %

```

XXXI Apparatus of Manuscripts

XXXI.1 User level macro

\msdata The user level \msdata command only writes the manuscripts data in a numbered auxiliary file. There are two associated etoolbox counters.

\msdata@c

\msdata@cR

```

8483 \def\msdata@c{}%
8484 \def\msdata@cR{}%
8485 \newcommand{\msdata}[1]{%
8486   \leavevmode%
8487   \unless\ifstopmsdata@inserted@%
8488     \stopmsdata%
8489     \led@warning@msdatawithoutstop%
8490   \fi%
8491   \global\stopmsdata@inserted@false%
8492   \unless\ifledRcol%
8493     \numgdef{\msdata@c}{\msdata@c+1}%
8494     \ifdef{\hypertarget}{%
8495       \edlabel{\msdata@c:start:msdata}%
8496     }{}%
8497     \protected@write\linenum@out{}{%
8498       \string\@msd{#1}%
8499     }%
8500   \else%
8501     \numgdef{\msdata@cR}{\msdata@cR+1}%
8502     \ifdef{\hypertarget}{%
8503       \edlabel{\msdata@cR:start:msdata}%

```

```

8504     }{}%
8505     \protected@write\linenum@outR{}{%
8506         \string\@msd{#1}%
8507     }%
8508     \fi%
8509 }%
8510 %

```

\stopmsdata The user level `\stopmsdata` command only writes information about the end of manuscripts data in numbered auxiliary file.

```

8511 \newcommand{\stopmsdata}[0]{%
8512     \leavevmode%
8513     \unless\ifledRcol%
8514         \protected@write\linenum@out{}{%
8515             \string\@stopmsd%
8516         }%
8517         \ifdef{\hypertarget}{%
8518             \edlabel{\msdata@c:end:msdata}%
8519         }{}%
8520     \else%
8521         \protected@write\linenum@outR{}{%
8522             \string\@stopmsd%
8523         }%
8524         \ifdef{\hypertarget}{%
8525             \edlabel{\msdata@cR:end:msdata}%
8526         }{}%
8527     \fi%
8528     \global\stopmsdata@inserted@true%
8529 }%
8530 %

```

\ifstopmsdata@inserted@ The `\ifstopmsdata@inserted@` boolean is set to TRUE at every `\stopmsdata` and reset to FALSE at all `\msdata`. It also set to TRUE at every `\beginnumbering`. It is used to automatically insert `\stopmsdata` if forgotten before `\msdata`

```

8531 \newif\ifstopmsdata@inserted@%
8532 %

```

XXXI.2 Setting macro

Setting macros for the manuscripts apparatus tools is very easy: they just save their argument in an internal macro.

\setmsdataseries In which series of notes will be printed the apparatus of manuscripts?

```

8533 \newcommand{\setmsdataseries}[1]{%
8534     \gdef\@msdata@series{#1}%
8535 }%
8536 \def\@msdata@series{A}%
8537 %

```

`\setmsdataposition` The label for the manuscripts data.

```
8538 \def\ms@data@position{msdata-regular}%
8539 \newcommand{\setmsdataposition}[1]{%
8540   \gdef\ms@data@position{#1}%
8541 }%
8542 %
```

`\setmsdatalabel` The label for the manuscripts data.

```
8543 \def\ms@data@label{Ms.}%
8544 \newcommand{\setmsdatalabel}[1]{%
8545   \gdef\ms@data@label{#1}%
8546 }%
8547 %
```

XXXI.3 Counters and lists

`\@msd@c` `\@msd@c` is a counter incremented at each `\@msd` read in auxiliary file.

```
8548 \numdef{\@msd@c}{0}
8549 \numdef{\@msd@cR}{0}
8550 %
```

`\add@msd@` `\add@msd@` is a counter incremented at each `\add@msddata`, that is at each time we prepare the insertion of manuscripts data footnote.

```
8551 \numdef{\add@msd@c}{0}%
8552 \numdef{\add@msd@cR}{0}%
8553 %
```

`\@msdata@list` The `\@msdata@list` will contain, for each line, the lists of command to be executed to insert the manuscripts apparatus. It will be filled on `\add@msdata` and looped on `\insert@msdata`, then emptied.

```
8554 \def\@msdata@list{}%
8555 %
```

XXXI.4 Auxiliary file macros

`\@msd` The `\@msd` macro is written in the auxiliary file. It just defines three macros by `\msdata` macro, which allow us to know the manuscripts data, the line number and the absolute line number where it was called

It also stores the action code 1010 in the list of actions by line.

```
8556 \newcommand{\@msd}[1]{%
8557   \unless\ifledRcol%
8558     \global\numdef{\@msd@c}{\@msd@c+\@ne}%
8559     \csgdef{\@msdata@\@msd@c @data}{#1}%

```

```

8560 \csxdef{@msdata@{@msd@c @linenumber}}{\the\line@num}%
8561 \csxdef{@msdata@{@msd@c @sublinenumber}}{\the\subline@num}%
8562 \csxdef{@msdata@{@msd@c @abslinenumber}}{\the\absline@num}%
8563 \xright@appenditem{\the\absline@num}\to\actionlines@list%
8564 \xright@appenditem{-1010}\to\actions@list%
8565 \else%
8566 \global\newdef{@msd@cR}{\@msd@cR+\@one}%
8567 \csgdef{@msdata@{@msd@cR @dataR}}{#1}%
8568 \csxdef{@msdata@{@msd@cR @linenumberR}}{\the\line@numR}%
8569 \csxdef{@msdata@{@msd@cR @sublinenumberR}}{\the\subline@numR}%
8570 \csxdef{@msdata@{@msd@cR @abslinenumberR}}{\the\absline@numR}%
8571 \xright@appenditem{\the\absline@numR}\to\actionlines@listR%
8572 \xright@appenditem{-1010}\to\actions@listR%
8573 \fi%
8574 }%
8575 %

```

\@stopmsd Inserted in the auxiliary file by \stopmsd, the \@stopmsd macro will store in two commands the line number and the absolute line number on which it is called.

```

8576 \newcommand{\@stopmsd}[0]{%
8577 \unless\ifledRcol%
8578 \ifcsundef{@msdata@{@msd@c @stoplinenumber}}{%
8579 \csxdef{@msdata@{@msd@c @stopabslinenumber}}{\the\absline@num}%
8580 \csxdef{@msdata@{@msd@c @stoplinenumber}}{\the\line@num}%
8581 \csxdef{@msdata@{@msd@c @stopsublinenumber}}{\the\subline@num}%
8582 }}%
8583 \else%
8584 \ifcsundef{@msdata@{@msd@cR @stoplinenumberR}}{%
8585 \csxdef{@msdata@{@msd@cR @stopabslinenumberR}}{\the\absline@numR}%
8586 \csxdef{@msdata@{@msd@cR @stoplinenumberR}}{\the\line@numR}%
8587 \csxdef{@msdata@{@msd@cR @stopsublinenumberR}}{\the\subline@numR}%
8588 }%
8589 }%
8590 \fi%
8591 }%
8592 %

```

XXXI.5 Action macro

\add@msdata \add@msdata is executed on each line when action code 1010 is seen. It will not insert immediately the manuscript data footnote, as action code are executed before the line be typeset, and, consequently, could be on the previous page. So it just stores the manuscript data footnote to \@msdata@list.

```

8593 \newcommand{\add@msdata}{%
8594 \bgroup%
8595 \normalfont%
8596 \unless\ifledRcol%

```

```

8597 \numdef{\add@msd@c}{\add@msd@c+\@ne}%
8598 \ifcsdef{@msdata@\add@msd@c @data}{%
8599 \letcs{\@data}{@msdata@\add@msd@c @data}%
8600 \edef\l@d@nums{%
8601 000| % Start page = we don't print it
8602 \csuse{@msdata@\add@msd@c @linenumber}| % Start line number
8603 \csuse{@msdata@\add@msd@c @sublinenumber}| % Start subline number
8604 000| % End page number, we don't print it
8605 \ifnumless{\csuse{@msdata@\add@msd@c @stopabslinenumber}}{\csuse{
@lastabsline@forpage@\the\page@num}}%
8606 {\csuse{@msdata@\add@msd@c @stoplinenumber}} % End line number if
in the same page
8607 {\csuse{@lastline@forpage@\the\page@num}} % Otherwise, last
number of the page
8608 | %
8609 \ifnumless{\csuse{@msdata@\add@msd@c @stopabslinenumber}}{\csuse{
@lastabsline@forpage@\the\page@num}}%
8610 {\csuse{@msdata@\add@msd@c @stopsublinenumber}} % End subline
number if in the same page
8611 {\csuse{@lastsubline@forpage@\the\page@num}} % Otherwise, last
subnumber of the page
8612 | %
8613 \edfont@info % Font
8614 } %
8615 \@msd@options@fullpagefalse %
8616 \if@firstlineofpage % Try if the data are for the full page. If yes
, will add options to the list.
8617 \unless\if@msdata@insertedfrompreviouspage %
8618 \ifnumless{\csuse{@lastabsline@forpage@\the\page@num}}{\csuse{
{@msdata@\add@msd@c @stopabslinenumber}+\@ne}%
8619 {%
8620 \numdef{\@tmp}{\add@msd@c+\@ne}%
8621 \ifcsdef{@msdata@\@tmp @abslinenumber}%
8622 {\ifnumequal{\csuse{@msdata@\@tmp @abslinenumber}}{\csuse{
@lastabsline@forpage@\the\page@num}}%
8623 {}%
8624 {\@msd@options@fullpagetrue}%
8625 }%
8626 {\@msd@options@fullpagetrue}%
8627 }%
8628 {}%
8629 \fi%
8630 \fi%
8631 \listxadd{\@msdata@list}{%
8632 \@msd@options@iffullpage%
8633 \ifluatex%
8634 \csxdef{footnote@luatextextdir}{\the\textdir}%
8635 \csxdef{footnote@luatexpardir}{\the\pardir}%
8636 \fi%
8637 \csdef{@this@crossref@start}{\add@msd@c:start:msdata}%

```

```

8638         \csdef{@this@crossref@end}{\add@msd@c:end:msdata}%
8639         \unexpanded{%
8640             \def\annot@start{%
8641                 \def\annot@end{%
8642                     }%
8643                     \noexpand\csuse{v\@msdata@series footnote}{\@msdata@series}{\@
expandonce\l@d@nums}{\ms@data@label}{\expandonce\@data}}%
8644             \reset@msd@options@iffullpage%
8645         }%
8646     }%
8647     {}%
8648 \else%
8649     \numgdef{\add@msd@cR}{\add@msd@cR+\@one}%
8650     \ifcsdef{@msdata@\add@msd@cR @dataR}{%
8651         \letcs{\@data}{@msdata@\add@msd@cR @dataR}%
8652         \edef\l@d@nums{%
8653             000|% Start page = we don't print it
8654             \csuse{@msdata@\add@msd@cR @linenumberR}|% Start line number
8655             \csuse{@msdata@\add@msd@cR @sublinenumberR}|% Start subline
number, for now, not used
8656             000|% End page number, we don't print it
8657             \ifnumless{\csuse{@msdata@\add@msd@cR @stopabslinenumberR}}{\
csuse{@lastline@forpageR@the\page@numR}}%
8658             {\csuse{@msdata@\add@msd@cR @stoplinenumberR}}%End line number
if in the same page
8659             {\csuse{@lastline@forpageR@the\page@numR}}%Otherwise, last
number of the page
8660             |%
8661             \ifnumless{\csuse{@msdata@\add@msd@cR @stopabslinenumberR}}{\
csuse{@lastline@forpageR@the\page@numR}}%
8662             {\csuse{@msdata@\add@msd@cR @stopsublinenumberR}}%End subline
number if in the same page
8663             {\csuse{@lastsubline@forpageR@the\page@numR}}%Otherwise, last
number of the page
8664             000|% End sub line number, for now, not used
8665             \edfont@info%Font
8666         }%
8667         \@msd@options@fullpagefalse%
8668         \if@firstlineofpageR%
8669             \unless@if@msdata@insertedfrompreviouspage%
8670             \ifnumless{\csuse{@lastabsline@forpageR@the\page@numR}}{\
csuse{@msdata@\add@msd@c @stopabslinenumberR}+\@one}%
8671             {%
8672             \numdef{\@tmp}{\add@msd@cR+\@one}%
8673             \ifcsdef{@msdata@\@tmp @abslinenumberR}%
8674             {\ifnumequal{\csuse{@msdata@\@tmp @abslinenumberR}}{\csuse{
@lastabsline@forpageR@the\page@numR}}}%
8675             {}%
8676             {\@msd@options@fullpagetrue}%
8677         }%

```

```

8678         {\msd@options@iffullpagetrue}%
8679         }%
8680         {}%
8681         \fi%
8682     \fi%
8683     \listxadd{\msdata@list}{%
8684         \msd@options@iffullpage%
8685         \ifluatex%
8686             \csxdef{footnote@luatextextdir}{\the\textdir}%
8687             \csxdef{footnote@luatexpardir}{\the\pardir}%
8688         \fi%
8689         \csdef{@this@crossref@start}{\add@msd@cR:start:msdata}%
8690         \csdef{@this@crossref@end}{\add@msd@cR:end:msdata}%
8691         \unexpanded{%
8692             \def\annot@start{}%
8693             \def\annot@end{}%
8694         }%
8695         \noexpand\csuse{v\msdata@series footnote}{\msdata@series}{\{
expandonce\l@d@nums}{\msdata@label}{\expandonce\data}}%
8696         \reset@msd@options@iffullpage%
8697     }%
8698     }%
8699     {}%
8700     \fi%
8701     \egroup%
8702 }%
8703 %

```

`\ifmsdata@insertedfrompreviouspage` The `\ifmsdata@insertedfrompreviouspage` boolean is set to TRUE if reledmac automatically inserts data from previous page in the first line of a page.

```

8704 \newif\ifmsdata@insertedfrompreviouspage%
8705 %

```

`\addmsdata@firstlineofpage` `\addmsdata@firstlineofpage` is called at the first line of every page. It inserts manuscript data which start on one of the previous pages and continue on this page.

```

8706 \newcommand{\addmsdata@firstlineofpage}{%
8707     \bgroup%
8708     \normalfont%
8709     \unless\ifledRcol@%
8710         \ifcsdef{\msdata@\add@msd@c @data}{%
8711             \ifnumless{\the\absline@num-\@ne}{\csuse{\msdata@\add@msd@c
@stopabslinenumber}}%
8712         }%
8713         \global\msdata@insertedfrompreviouspagetrue%
8714         \letcs{\@data}{\msdata@\add@msd@c @data}%
8715         \edef\l@d@nums{%
8716             000| % Start page = we don't print it

```

```

8717 \numexpr\the\line@num+\@ne\relax| % Start line number = first line
      of the page. As \add@msdata@firstlineofpage is called before line number
      has been incremented, we increment it for printing
8718 000| % Start subline number, for now, not used
8719 000| % End page number, we don't print it
8720 \ifnumless{\csuse{\@msdata@\add@msd@c @stopabslinenumber}}{\csuse{
      @lastabsline@forpage@\the\page@num}}}%
8721 {\csuse{\@msdata@\add@msd@c @stoplinenumber}}}% End line number if
      in the same page
8722 {\csuse{@lastline@forpage@\the\page@num}}}% Otherwise, last
      number of the page
8723 |%
8724 000| % End sub line number, for now, not used
8725 \edfont@info%Font
8726 }%
8727 \@msd@options@fullpagefalse%
8728 \ifnumless{\csuse{@lastabsline@forpage@\the\page@num}}{\csuse{
      \@msdata@\add@msd@c @stopabslinenumber}+\@ne}% We will test if the ms data is
      for the full page
8729 {%
8730 \numdef{\@tmp}{\add@msd@c+\@ne}%
8731 \ifcsdef{\@msdata@\@tmp @abslinenumber}%
8732 {\ifnumequal{\csuse{\@msdata@\@tmp @abslinenumber}}{\csuse{
      @lastabsline@forpage@\the\page@num}}}%
8733 {}%
8734 {\@msd@options@fullpagetrue}%
8735 }%
8736 {\@msd@options@fullpagetrue}%
8737 }%
8738 {}%
8739 \listxadd{\@msdata@list}{%
8740 \@msd@options@iffullpage%
8741 \ifluatex%
8742 \csxdef{footnote@luatextextdir}{\the\textdir}%
8743 \csxdef{footnote@luatexpardir}{\the\pardir}%
8744 \fi%
8745 \csdef{@this@crossref@start}{\add@msd@c:start:msdata}%
8746 \csdef{@this@crossref@end}{\add@msd@c:end:msdata}%
8747 \unexpanded{%
8748 \def\annot@start{%
8749 \def\annot@end{%
8750 }%
8751 \noexpand\csuse{v\@msdata@series footnote}{\@msdata@series}{\@
      expandonce\l@d@nums}{\ms@data@label}{\expandonce\data}}}%
8752 \reset@msd@options@iffullpage%
8753 }%
8754 }%
8755 {\global\@msdata@insertedfrompreviouspagefalse}%
8756 }{}%
8757 \else%

```

```

8758 \ifcsdef{@msdata@add@msd@cR @dataR}{%
8759 \ifnumless{\the\absline@numR-\@ne}{\csuse{@msdata@add@msd@cR
@stopabslinenumberR}}}%
8760 {%
8761 \global\@msdata@insertedfrompreviouspagetrue%
8762 \letcs{\@data}{@msdata@add@msd@cR @dataR}%
8763 \edef\l@d@nums{%
8764 000}% Start page = we don't print it
8765 \numexpr\the\line@numR+\@ne\relax}% Start line number = first
line of the page. As \add@msdata@firstlineofpage is called before line
number has been incremented, we increment it for printing
8766 000}% Start subline number, for now, not used
8767 000}% End page number, we don't print it
8768 \ifnumless{\csuse{@msdata@add@msd@cR @stopabslinenumberR}}{\
csuse{@lastline@forpageR@the\page@numR}}}%
8769 {\csuse{@msdata@add@msd@cR @stoplinenumberR}}}%End line number
if in the same page
8770 {\csuse{@lastline@forpageR@the\page@numR}}}%Otherwise, last
number of the page
8771 |%
8772 000}% End sub line number, for now, not used
8773 \edfont@info%Font
8774 }%
8775 \@msd@options@fullpagefalse%
8776 \ifnumless{\csuse{@lastabsline@forpageR@the\page@numR}}{\csuse{
@msdata@add@msd@cR @stopabslinenumberR}+\@ne}%
8777 {%
8778 \numdef{@tmp}{\add@msd@cR+\@ne}%
8779 \ifcsdef{@msdata@\@tmp @abslinenumberR}%
8780 {\ifnumequal{\csuse{@msdata@\@tmp @abslinenumberR}}{\csuse{
@lastabsline@forpageR@the\page@numR}}}%
8781 {}%
8782 {\@msd@options@fullpagetrue}%
8783 }%
8784 {\@msd@options@fullpagetrue}%
8785 }%
8786 {}%
8787 \listxadd{\@msdata@list}{%
8788 \@msd@options@iffullpage%
8789 \ifluatex%
8790 \csxdef{footnote@luatextextdir}{\the\textdir}%
8791 \csxdef{footnote@luatexpardir}{\the\pardir}%
8792 \fi%
8793 \csdef{@this@crossref@start}{\add@msd@cR:start:msdata}%
8794 \csdef{@this@crossref@end}{\add@msd@cR:end:msdata}%
8795 \unexpanded{%
8796 \def\annot@start{%
8797 \def\annot@end{%
8798 }%
8799 \noexpand\csuse{v\@msdata@series footnote}{\@msdata@series}{\

```

```

expandonce\l@d@nums}{\ms@data@label}{\expandonce\@data}}}%
8800 \reset@msd@options@iffullpage%
8801 }%
8802 }%
8803 {\global\@msdata@insertedfrompreviouspagefalse}%
8804 }{}%
8805 \fi%
8806 \egroup%
8807 }%
8808 %

```

XXXI.6 Inserting footnote

Just before inserting standard insert (familiar and critical footnotes, sidenotes), we call `\insert@msdata` to insert manuscripts data's footnotes.

```

\insert@msdata 8809 \newcommand{\insert@msdata}{%
8810 \def\do##1{##1}%
8811 \dolistloop{\@msdata@list}%
8812 \global\let\@msdata@list\relax%
8813 }%
8814 %

```

XXXI.7 Other

`\@msd@options@iffullpage` `\@msd@options@iffullpage` sets some options if the manuscripts data are for all the page. `\reset@msd@options@iffullpage` resets them after the footnote. `\if@msd@options@fullpage` is switch to true in `add@msdata@firstlineofpage` if these option must be inserted.

```

8815 \newif\if@msd@options@fullpage%
8816 \newcommand{\@msd@options@iffullpage}[0]{%
8817 \if@msd@options@fullpage%
8818 \noexpand\toggletrue{nonum@}%
8819 \ifdefvoid{\ms@data@label}%
8820 {\noexpand\toggletrue{nosep@}}%
8821 }%
8822 \fi%
8823 }%
8824 \newcommand{\reset@msd@options@iffullpage}[0]{%
8825 \noexpand\togglefalse{nonum@}%
8826 \noexpand\togglefalse{nosep@}%
8827 }%
8828 %

```

XXXII Arrays and tables

XXXII.1 Preamble: macro as environment

The following is borrowed, and renamed, from the `amsmath` package. See also the CTT thread ‘`eeq` and `amstex`’, 1995/08/31, started by Keith Reckdahl and ended definitively by David M. Jones.

Several of the `[math]` macros scan their body twice. This means we must collect all text in the body of an environment form before calling the macro.

`\@emptytoks` This is actually defined in the `amsgen` package.

```
8829 \newtoks\@emptytoks
8830
8831 %
```

The rest is from `amsmath`.

`\l@denvbody` A token register to contain the body.

```
8832 \newtoks\l@denvbody
8833
8834 %
```

`\addtol@denvbody` `\addtol@denvbody{arg}` adds `arg` to the token register `\l@denvbody`.

```
8835 \newcommand{\addtol@denvbody}[1]{%
8836   \global\l@denvbody\expandafter{\the\l@denvbody#1}}
8837 %
```

`\if@edtabular` A boolean set to true inside a `reledmac`’ tabular environment.

```
8838 \newif\if@edtabular%
8839 %
```

`\l@dcollect@body` The macro `\l@dcollect@body` starts the scan for the `\end{env}` command of the current environment. It takes a macro name as argument. This macro is supposed to take the whole body of the environment as its argument. For example, given `cenv#1{...}` as a macro that processes `#1`, then the environment form, `\begin{env}` would call `\l@dcollect@body\cenv`.

```
8840 \newcommand{\l@dcollect@body}[1]{%
8841   %%Ensure that we don't have spurious indentation at the very first line,
   caused by some text before.
8842   \l@denvbody{\expandafter#1\expandafter{\the\l@denvbody}}%
8843   \edef\processl@denvbody{\the\l@denvbody\noexpand\end{\@currenvir}}%
8844   \l@denvbody\@emptytoks \def\l@dbegin@stack{b}%
8845   \begingroup
8846   \@edtabulartrue%
8847   \expandafter\let\csname\@currenvir\endcsname\l@dcollect@@body
```

```

8848 \edef\processl@denbody{\expandafter\noexpand\csname\@currenvir\
endcsname}%
8849 \processl@denbody%
8850 }%
8851
8852 %

```

\l@dpush@begins When adding a piece of the current environment's contents to \l@denbody, we scan it to check for additional \begin tokens, and add a 'b' to the stack for any that we find.

```

8853 \def\l@dpush@begins#1\begin#2{%
8854 \ifx\end#2\else b\expandafter\l@dpush@begins\fi}
8855
8856 %

```

\l@dcollect@@body \l@dcollect@@body takes two arguments: the first will consist of all text up to the next \end command, and the second will be the \end command's argument. If there are any extra \begin commands in the body text, a marker is pushed onto a stack by the \l@dpush@begins function. Empty state for this stack means we have reached the \end that matches our original \begin. Otherwise we need to include the \end and its argument in the material we are adding to the environment body accumulator.

```

8857 \def\l@dcollect@@body#1\end#2{%
8858 \edef\l@dbegin@stack{\l@dpush@begins#1\begin\end
8859 \expandafter\@gobble\l@dbegin@stack}%
8860 \ifx\@empty\l@dbegin@stack
8861 \endgroup
8862 \@checkend{#2}%
8863 \addtol@denbody{#1}%
8864 \else
8865 \addtol@denbody{#1\end{#2}}%
8866 \fi
8867 \processl@denbody % A little tricky! Note the grouping
8868 }
8869
8870 %

```

There was a question on CTT about how to use \collect@body for a macro taking an argument. The following is part of that thread.

From: Heiko Oberdiek <oberdiek@uni-freiburg.de>
 Newsgroups: comp.text.tex
 Subject: Re: Using \collect@body with commands that take >1 argument
 Date: Fri, 08 Aug 2003 09:03:20 +0200

eed132@psu.edu (Evan) wrote:

> I'm trying to make a new Latex environment that acts like the>
 > \colorbox command that is part of the color package. I looked through
 > the FAQ and ran across this bit about using the \collect@body command

```

> that is part of AMSLaTeX:
> http://www.tex.ac.uk/cgi-bin/texfaq2html?label=cmdasenv
>
> It almost works. If I do something like the following:
> \newcommand{\redbox}[1]{\colorbox{red}{#1}}
>
> \makeatletter
> \newenvironment{redbox}{\collect@body \redbox}{\}

```

You will get an error message: Command `\redbox` already defined. Thus you must rename either the command `\redbox` or the environment name.

```

> \begin{coloredbox}{blue}
>   Yadda yadda yadda... this is on a blue background...
> \end{coloredbox}
> and can't figure out how to make the \collect@body take this.

> \collect@body \colorbox{red}
> \collect@body {\colorbox{red}}

```

The argument of `\collect@body` has to be one token exactly.

```

\documentclass{article}
\usepackage{color}
\usepackage{amsmath}

\newcommand{\redbox}[1]{\colorbox{red}{#1}}
\makeatletter
\newenvironment{coloredbox}[1]{%
  \def\next@{\colorbox{#1}}%
  \collect@body\next@
}{\}

% ignore spaces at begin and end of environment
\newenvironment{coloredboxII}[1]{%
  \def\next@{\mycoloredbox{#1}}%
  \collect@body\next@
}{\}

\newcommand{\mycoloredbox}[2]{%
  \colorbox{#1}{\ignorespaces#2\unskip}%
}

% support of optional color model argument
\newcommand\coloredboxIII\endcsname{}
\def\coloredboxIII#1#2{%
  \@coloredboxIII{#1}%
}
\def\@coloredboxIII#1#2{%
  \def\next@{\mycoloredboxIII{#1}{#2}}%
}

```

```

\collect@body\next@
}
\newcommand{\mycoloredboxIII}[3]{%
  \colorbox#1{#2}{\ignorespaces#3\unskip}%
}

\makeatother

\begin{document}
  Black text before
  \begin{coloredbox}{blue}
    Hello World
  \end{coloredbox}
  Black text after

  Black text before
  \begin{coloredboxII}{blue}
    Hello World
  \end{coloredboxII}
  Black text after

  Black text before
  \begin{coloredboxIII}[rgb]{0,0,1}
    Hello World
  \end{coloredboxIII}
  Black text after

\end{document}

Yours sincerely
Heiko <oberdiek@uni-freiburg.de>

```

XXXII.2 Tabular environments

This is based on the work by Herbert Breger in developing `tabmac.tex`.

The original `tabmac.tex` file was void of comments or any explanatory text other than the above notice. The algorithm is Breger's. Peter Wilson have made some cosmetic changes to the original code and reimplemented some things so they are more LaTeX-like. All the commentary are from Peter Wilson, as are any mistake or errors.

However, Maïeul Rouquette has modified code in order to add new features of `eledmac` and `reledmac`.

XXXII.2.1 Disabling and restoring commands

`\l@dtabnoexpands` More no expansion for critical and familiar footnotes in tabular environment.

```

8871 \newcommand*{\l@dtabnoexpands}{%
8872   \let\rtab=0%

```

```

8873 \let\ctab=0%
8874 \let\ltab=0%
8875 \let\rtabtext=0%
8876 \let\ltabtext=0%
8877 \let\ctabtext=0%
8878 \let\edbeforetab=0%
8879 \let\edaftertab=0%
8880 \let\edatleft=0%
8881 \let\edatright=0%
8882 \let\edvertline=0%
8883 \let\edvertdots=0%
8884 \let\edrowfill=0%
8885 }
8886
8887 %

```

`\disable@familiarnotes` Macros to disable and restore familiar notes, to prevent them from printing multiple times in edtabularx and edarrayx environments.

`\restore@familiarnotes`

```

8888 \newcommand{\disable@familiarnotes}{%
8889 \unless\ifnofamiliar%
8890 \def\do##1{%
8891 \csletcs{footnote@@##1}{footnote##1}%
8892 \expandafter\renewcommand \csname footnote##1\endcsname[1]{%
8893 \protected@csxdef{@thefnmark##1}{\csuse{thefootnote##1}}%
8894 \csuse{@footnotemark##1}}%
8895 }%
8896 }%
8897 \dolistloop{\@series}%
8898 \fi%
8899 }%
8900 \newcommand{\restore@familiarnotes}{%
8901 \unless\ifnofamiliar%
8902 \def\do##1{%
8903 \csletcs{footnote##1}{footnote@@##1}%
8904 }%
8905 \dolistloop{\@series}%
8906 \fi%
8907 }%
8908
8909 %

```

`\disable@sidenotes` The same for sidenotes.

`\restore@sidenotes`

```

8910 \newcommand{\disable@sidenotes}{%
8911 \let\@@ledrightnote\ledrightnote%
8912 \let\@@ledleftnote\ledleftnote%
8913 \let\@@ledsidenote\ledsidenote%
8914 \let\ledrightnote@gobble%
8915 \let\ledleftnote@gobble%

```

```

8916 \let\ledsidenote\@gobble%
8917 }%
8918 \newcommand{\restore@sidenotes}{%
8919 \let\ledrightnote\@ledrightnote%
8920 \let\ledleftnote\@ledleftnote%
8921 \let\ledsidenote\@ledsidenote%
8922 }%
8923 %

```

\disable@endnotes The same for endnotes.

```

\restore@endnotes
8924 \newcommand{\disable@endnotes}{%
8925 \unless\ifnoend{%
8926 \def\do##1{%
8927 \csletcs{##1@endnote}{##1endnote}%
8928 \expandafter\renewcommand \csname ##1endnote\endcsname[1]{}%
8929 }%
8930 \dolistloop{\@series}%
8931 \fi%
8932 }%
8933 \newcommand{\restore@endnotes}{%
8934 \unless\ifnofamiliar{%
8935 \def\do##1{%
8936 \csletcs{##1endnote}{##1@endnote}%
8937 }%
8938 \dolistloop{\@series}%
8939 \fi%
8940 }%
8941 %

```

\disable@notes Disable/restore side, familiar and end notes.

```

\restore@notes
8942 \newcommand{\disable@notes}{%
8943 \disable@sidenotes%
8944 \disable@familiarnotes%
8945 \disable@endnotes%
8946 }%
8947 \newcommand{\restore@notes}{%
8948 \restore@sidenotes%
8949 \restore@familiarnotes%
8950 \restore@endnotes%
8951 }%
8952 %

```

\EDTEXT We need to be able to modify the `\edtext` macros and also restore their original definitions.

```

\edtext
8953 \let\EDTEXT=\edtext
8954 \newcommand{\xedtext}[2]{\EDTEXT{#1}{#2}}
8955 %

```

`\EDLABEL` We need to be able to modify and restore the `\edlabel` macro.

```
\xedlabel
8956 \let\EDLABEL=\edlabel
8957 \newcommand*\xedlabel}[1]{\EDLABEL{#1}}
8958 %
```

`\xedindex` Macros supporting modification and restoration of `\edindex`.

```
\nulledindex
8959 \AtBeginDocument{\let\xedindex\edindex}%
8960 \newcommand{\nulledindex}[2][\jobname]{\@bsphack\@esphack}
8961
8962 %
```

`\@line@num` Macro supporting restoration of `\linenum`.

```
8963 \let\@line@num=\linenum
8964 %
```

`\l@gobbleoptarg` `\l@gobbleoptarg[⟨arg⟩]{⟨arg⟩}` replaces these two arguments (first is optional) by `\relax`.

```
8965 \newcommand*\l@gobbleoptarg}[2][\relax]%
8966
8967 %
```

`\l@secondmandarg` `\l@secondoptarg[⟨arg⟩]{⟨arg⟩}` gobble the first (optional) argument, and expand to the second (mandatory) argument.

```
8968 \NewExpandableDocumentCommand{\l@secondmandarg}{om}{#2}%
8969 %
```

```
\Relax70 \let\Relax=\relax
```

```
\NEXT71 \let\NEXT=\next
```

```
8972
8973 %
```

`\l@dmodforedtext` Modify and restore various macros for when `\edtext` is used.

```
\l@drestoreforedtext
8974 \newcommand{\l@dmodforedtext}{%
8975 \let\edtext\relax
8976 \def\do##1{\global\csletcs{##1footnote}{\l@gobbleoptarg}}%
8977 \dolistloop{\@series}%
8978 \let\edindex\nulledindex
8979 \let\linenum\@gobble}
8980 \newcommand{\l@drestoreforedtext}{%
8981 \def\do##1{\global\csletcs{##1footnote}{##1@footnote}}
8982 \dolistloop{\@series}%
8983 \let\edindex\xedindex}
8984 %
```

`\l@dnnullfills` Nullify and restore some column fillers, etc.

```
\l@drestorefills
8985 \newcommand{\l@dnnullfills}{%
8986   \def\edlabel##1{%
8987     \def\edrowfill##1##2##3{%
8988     }
8989 \newcommand{\l@drestorefills}{%
8990   \def\edrowfill##1##2##3{\@EDROWFILL@{##1}{##2}{##3}}%
8991 }
8992
8993 %
```

`\letsforverteilen` Gathers some lets and other code that is common to the **verteilen** macros.

```
8994 \newcommand{\letsforverteilen}{%
8995   \let\edtext\xedtext
8996   \let\edindex\xedindex
8997   \def\do##1{\global\csletcs{##1footnote}{##1@@footnote}}
8998   \dolistloop{\@series}%
8999   \let\linenum@line@num
9000   \hilfsskip=\l@dcwidth%
9001   \advance\hilfsskip by -\wd\hilfsbox
9002   \def\edlabel##1{\xedlabel{##1}}
9003
9004 %
```

`\disablel@dtabfeet` Declarations for using or using `\edtext` inside tabulars. The default at this point is for
`\enablel@dtabfeet` `\edtext`.

```
9005 \newcommand\disablel@dtabfeet{\l@dmmodforedtext}%
9006 \newcommand\enablel@dtabfeet{\l@drestoreforedtext}%
9007 %
```

XXXII.2.2 Counters, boxes and lengths

`\l@dampcount` `\l@dampcount` is a counter for the & column dividers and `\l@dcolcount` is a counter
`\l@dcolcount` for the columns.

```
9008 \newcount\l@dampcount
9009 \l@dampcount=1\relax
9010 \newcount\l@dcolcount
9011 \l@dcolcount=0\relax
9012
9013 %
```

`\hilfsbox` Some (temporary) helper items.

```
\hilfsskip
9014 \newbox\hilfsbox
\Hilfsbox
9015 \newskip\hilfsskip
\hilfscount
9016 \newbox\Hilfsbox
```

```

9017 \newcount\hilfscount
9018
9019 %

```

30 columns should be adequate (compared to the original 60). These are the column widths. (Originally these were German spelled numbers e.g., \eins, \zwei, etc).

```

9020 \newdimen\dcoli
9021 \newdimen\dcolii
9022 \newdimen\dcoliii
9023 \newdimen\dcoliv
9024 \newdimen\dcolv
9025 \newdimen\dcolvi
9026 \newdimen\dcolvii
9027 \newdimen\dcolviii
9028 \newdimen\dcolix
9029 \newdimen\dcolx
9030 \newdimen\dcolxi
9031 \newdimen\dcolxii
9032 \newdimen\dcolxiii
9033 \newdimen\dcolxiv
9034 \newdimen\dcolxv
9035 \newdimen\dcolxvi
9036 \newdimen\dcolxvii
9037 \newdimen\dcolxviii
9038 \newdimen\dcolxix
9039 \newdimen\dcolxx
9040 \newdimen\dcolxxi
9041 \newdimen\dcolxxii
9042 \newdimen\dcolxxiii
9043 \newdimen\dcolxxiv
9044 \newdimen\dcolxxv
9045 \newdimen\dcolxxvi
9046 \newdimen\dcolxxvii
9047 \newdimen\dcolxxviii
9048 \newdimen\dcolxxix
9049 \newdimen\dcolxxx
9050 \newdimen\dcolerr % added for error handling
9051
9052 %

```

\l@dcolwidth This is a cunning way of storing the columnwidths indexed by the column number \l@dcolcount, like an array. (was \Dimenzuordnung)

```

9053 \newcommand{\l@dcolwidth}{\ifcase \the\l@dcolcount \dcoli %???
9054 \or \dcoli \or \dcolii \or \dcoliii
9055 \or \dcoliv \or \dcolv \or \dcolvi
9056 \or \dcolvii \or \dcolviii \or \dcolix \or \dcolx
9057 \or \dcolxi \or \dcolxii \or \dcolxiii
9058 \or \dcolxiv \or \dcolxv \or \dcolxvi

```

```

9059 \or \dcolxvii \or \dcolxviii \or \dcolxix \or \dcolxx
9060 \or \dcolxxi \or \dcolxxii \or \dcolxxiii
9061 \or \dcolxxiv \or \dcolxxv \or \dcolxxvi
9062 \or \dcolxxvii \or \dcolxxviii \or \dcolxxix \or \dcolxxx
9063 \else \dcolerr \fi}
9064
9065 %

```

\stepl@dcolumcount This increments the column counter, and issues an error message if it is too large.

```

9066 \newcommand*{\stepl@dcolumcount}{\advance\l@dcolumcount\@ne
9067 \ifnum\l@dcolumcount>30\relax
9068 \led@err@TooManyColumns
9069 \fi}
9070
9071 %

```

\l@dsetmaxcolwidth Sets the column width to the maximum value seen so far.

```

9072 \newcommand{\l@dsetmaxcolwidth}{%
9073 \ifdim\l@dcolumwidth < \wd\hilfsbox
9074 \l@dcolumwidth = \wd\hilfsbox
9075 \else \relax \fi}
9076
9077 %

```

\measuremcell Measure (recursively) the width required for a math cell.

```

9078 \def\measuremcell #1{%
9079 \ifx #1\ \ifnum\l@dcolumcount=0\let\NEXT\relax%
9080 \else\l@dcheckcols%
9081 \l@dcolumcount=0%
9082 \let\NEXT\measuremcell%
9083 \fi%
9084 \else\setbox\hilfsbox=\hbox{$\displaystyle{#1}$}%
9085 \stepl@dcolumcount%
9086 \l@dsetmaxcolwidth%
9087 \let\NEXT\measuremcell%
9088 \fi\NEXT}
9089
9090 %

```

\measuretcell Measure (recursively) the width required for a text cell.

```

9091 \def\measuretcell #1{%
9092 \ifx #1\ \ifnum\l@dcolumcount=0\let\NEXT\relax%
9093 \else\l@dcheckcols%
9094 \l@dcolumcount=0%
9095 \let\NEXT\measuretcell%
9096 \fi%

```

```

9097 \else\setbox\hilfsbox=\hbox{#1}%
9098 \step1@dcolcount%
9099 \l@dsetmaxcolwidth%
9100 \let\NEXT\measuretcell%
9101 \fi\NEXT}
9102
9103 %

```

\measuremrow Measure (recursively) the width required for a math row.

```

9104 \def\measuremrow #1\{\%
9105 \ifx #1&\let\NEXT\relax%
9106 \else\measuremcell #1&\&\&\&%
9107 \let\NEXT\measuremrow%
9108 \fi\NEXT}
9109 %

```

\measuretrow Measure (recursively) the width required for a text row.

```

9110 \def\measuretrow #1\{\%
9111 \ifx #1&\let\NEXT\relax%
9112 \else\measuretcell #1&\&\&\&%
9113 \let\NEXT\measuretrow%
9114 \fi\NEXT}
9115
9116 %

```

\edtabcolsep The length \edtabcolsep controls the distance between columns.

```

9117 \newskip\edtabcolsep
9118 \global\edtabcolsep=10pt
9119
9120 %

```

\variab₂₁ \newcommand{\variab}{\relax}

```

9122
9123 %

```

\l@dcheckcols Check that the number of columns is consistent.

```

9124 \newcommand*{\l@dcheckcols}{\%
9125 \ifnum\l@dcolcount=1\relax
9126 \else
9127 \ifnum\l@dampcount=1\relax
9128 \else
9129 \ifnum\l@dcolcount=\l@dampcount\relax
9130 \else
9131 \l@d@err@UnequalColumns

```

```

9132     \fi
9133     \fi
9134     \l@dampcount=\l@dcolcount
9135   \fi}
9136
9137   %

```

`\edfilldimen` A length.

```

9138   \newdimen\edfilldimen
9139   \edfilldimen=0pt
9140
9141   %

```

`\c@addcolcount` A counter to hold the number of a column. We use a roman number so that we can grab the column dimension from `\dcol`. We do not use the `\roman` \TeX command, because some packages, like `babel` can override it in some specific cases (Greek, for example).

`\theadcolcount`

```

9142   \newcounter{addcolcount}
9143   \renewcommand{\theadcolcount}{\romannumeral \c@addcolcount}
9144   %

```

XXXII.2.3 Tabular typesetting

`\setmcellright` Typeset (recursively) cells of display math right justified.

```

9145   \def\setmcellright #1&{\def\edlabel##1}%
9146     \let\edindex\nulledindex
9147     \ifx #1\ \ifnum\l@dcolcount=0%\removelastskip
9148       \let\Next\relax%
9149     \else\l@dcolcount=0%
9150       \let\Next=\setmcellright%
9151     \fi%
9152   \else%
9153     \disablel@dtabfeet%
9154     \stepl@dcolcount%
9155     \disable@notes%
9156     \setbox\hilfsbox=\hbox{$\displaystyle{#1}$}%
9157     \restore@notes%
9158     \letsforverteilen%
9159     \hskip\hilfsskip$\displaystyle{#1}$%
9160     \hskip\edtabcolsep%
9161     \let\Next=\setmcellright%
9162   \fi\Next}
9163
9164   %

```

`\settcellright` Typeset (recursively) cells of text right justified.

```

9165 \def\settccllright #1&{\def\edlabel##1{}}%
9166     \let\edindex\nulledindex
9167     \ifx #1\\ \ifnum\l@dcclcount=0%\removelastskip
9168         \let\Next\relax%
9169     \else\l@dcclcount=0%
9170         \let\Next=\settccllright%
9171     \fi%
9172 \else%
9173     \disablel@dtabfeet%
9174     \stepl@dcclcount%
9175     \disable@notes%
9176     \setbox\hilfsbox=\hbox{#1}%
9177     \restore@notes%
9178     \letsforverteilen%
9179     \hskip\hilfsskip#1%
9180     \hskip\edtabcolsep%
9181     \let\Next=\settccllright%
9182 \fi\Next}
9183 %

```

\setmcellleft Typeset (recursively) cells of display math left justified.

```

9184 \def\setmcellleft #1&{\def\edlabel##1{}}%
9185     \let\edindex\nulledindex
9186     \ifx #1\\ \ifnum\l@dcclcount=0 \let\Next\relax%
9187     \else\l@dcclcount=0%
9188         \let\Next=\setmcellleft%
9189     \fi%
9190 \else \disablel@dtabfeet%
9191     \stepl@dcclcount%
9192     \disable@notes%
9193     \setbox\hilfsbox=\hbox{$\displaystyle{#1}$}%
9194     \restore@notes%
9195     \letsforverteilen%
9196     $\displaystyle{#1}$\hskip\hilfsskip\hskip\edtabcolsep%
9197     \let\Next=\setmcellleft%
9198 \fi\Next}
9199
9200 %

```

\settccllleft Typeset (recursively) cells of text left justified.

```

9201 \def\settccllleft #1&{\def\edlabel##1{}}%
9202     \let\edindex\nulledindex
9203     \ifx #1\\ \ifnum\l@dcclcount=0 \let\Next\relax%
9204     \else\l@dcclcount=0%
9205         \let\Next=\settccllleft%
9206     \fi%
9207 \else \disablel@dtabfeet%
9208     \stepl@dcclcount%

```

```

9209         \disable@notes%
9210         \setbox\hilfsbox=\hbox{#1}%
9211         \restore@notes%
9212         \letsforverteilen%
9213         #1\hskip\hilfsskip\hskip\edtabcolsep%
9214         \let\Next=\settcellleft%
9215     \fi\Next}
9216 %

```

\setmcellcenter Typeset (recursively) cells of display math centered.

```

9217 \def\setmcellcenter #1{\def\edlabel##1{%
9218     \let\edindex\nulledindex
9219     \ifx #1\ \ifnum\l@dcolcount=0 \let\Next\relax%
9220         \else\l@dcolcount=0%
9221             \let\Next=\setmcellcenter%
9222         \fi%
9223     \else \disablel@dtabfeet%
9224         \stepl@dcolcount%
9225         \disable@notes%
9226         \setbox\hilfsbox=\hbox{$\displaystyle{#1}$}%
9227         \restore@notes%
9228         \letsforverteilen%
9229         \hskip 0.5\hilfsskip$\displaystyle{#1}$\hskip0.5\hilfsskip%
9230         \hskip\edtabcolsep%
9231         \let\Next=\setmcellcenter%
9232     \fi\Next}
9233 %
9234 %

```

\settcellcenter Typeset (recursively) cells of text centered.

```

9235 \def\settcellcenter #1{\def\edlabel##1{%
9236     \let\edindex\nulledindex
9237     \ifx #1\ \ifnum\l@dcolcount=0 \let\Next\relax%
9238         \else\l@dcolcount=0%
9239             \let\Next=\settcellcenter%
9240         \fi%
9241     \else \disablel@dtabfeet%
9242         \stepl@dcolcount%
9243         \disable@notes%
9244         \setbox\hilfsbox=\hbox{#1}%
9245         \restore@notes%
9246         \letsforverteilen%
9247         \hskip 0.5\hilfsskip #1\hskip 0.5\hilfsskip%
9248         \hskip\edtabcolsep%
9249         \let\Next=\settcellcenter%
9250     \fi\Next}
9251 %
9252 %

```

```
\NEXT \let\next=\relax
```

```
9254  
9255 %
```

\setmrowright Typeset (recursively) rows of right justified math.

```
9256 \def\setmrowright #1\{\%  
9257   \ifx #1& \let\next=\relax  
9258   \else \centerline{\setmcellright #1&\\&\\&}  
9259     \let\next=\setmrowright  
9260   \fi\next}  
9261 %
```

\settroright Typeset (recursively) rows of right justified text.

```
9262 \def\settroright #1\{\%  
9263   \ifx #1& \let\next=\relax  
9264   \else \centerline{\settrcellright #1&\\&\\&}  
9265     \let\next=\settroright  
9266   \fi\next}  
9267  
9268 %
```

\setmrowleft Typeset (recursively) rows of left justified math.

```
9269 \def\setmrowleft #1\{\%  
9270   \ifx #1& \let\next=\relax  
9271   \else \centerline{\setmcellleft #1&\\&\\&}  
9272     \let\next=\setmrowleft  
9273   \fi\next}  
9274 %
```

\settrorleft Typeset (recursively) rows of left justified text.

```
9275 \def\settrorleft #1\{\%  
9276   \ifx #1& \let\next=\relax  
9277   \else \centerline{\settrcellleft #1&\\&\\&}  
9278     \let\next=\settrorleft  
9279   \fi\next}  
9280  
9281 %
```

\setmrowcenter Typeset (recursively) rows of centered math.

```
9282 \def\setmrowcenter #1\{\%  
9283   \ifx #1& \let\next=\relax  
9284   \else \centerline{\setmcellcenter #1&\\&\\&}  
9285     \let\next=\setmrowcenter  
9286   \fi\next}  
9287 %
```

\settrowcenter Typeset (recursively) rows of centered text.

```

9288 \def\settrowcenter #1\{\%
9289   \ifx #1& \let\NEXT\relax
9290   \else \centerline{\settcellcenter #1&\&\&}
9291   \let\NEXT=\settrowcenter
9292   \fi\NEXT}
9293
9294 %

```

```

\newcommand{\nullsetzen}%
9295
9296   \step1@dcolcount%
9297   \l@dcolwidth=0pt%
9298   \ifnum\l@dcolcount=30\let\NEXT\relax%
9299   \l@dcolcount=0\relax
9300   \else\let\NEXT\nullsetzen%
9301   \fi\NEXT}
9302
9303 %

```

\edatleft $\edatleft[\langle math \rangle]{\langle symbol \rangle}{\langle len \rangle}$. Left $\langle symbol \rangle$, $2\langle len \rangle$ high with prepended $\langle math \rangle$ vertically centered.

```

9304 \newcommand{\edatleft}[3][\@empty]{%
9305   \ifx#1\@empty
9306     \vbox to 10pt{\vss\hbox{$\left#2\vrule width0pt height #3
9307       depth 0pt \right. $\hss}\vfil}
9308   \else
9309     \vbox to 4pt{\vss\hbox{$#1\left#2\vrule width0pt height #3
9310       depth 0pt \right. $\}\vfil}
9311   \fi}
9312 %

```

\edatright $\edatright[\langle math \rangle]{\langle symbol \rangle}{\langle len \rangle}$. Right $\langle symbol \rangle$, $2\langle len \rangle$ high with appended $\langle math \rangle$ vertically centered.

```

9313 \newcommand{\edatright}[3][\@empty]{%
9314   \ifx#1\@empty
9315     \vbox to 10pt{\vss\hbox{$\left.\vrule width0pt height #3
9316       depth 0pt \right#2 $\hss}\vfil}
9317   \else
9318     \vbox to 4pt{\vss\hbox{$\left.\vrule width0pt height #3
9319       depth 0pt \right#2 #1 $\}\vfil}
9320   \fi}
9321
9322 %

```

\edvertline $\edvertline{\langle len \rangle}$ vertical line $\langle len \rangle$ high.

```

9323 \newcommand{\edvertline}[1]{\vbox to 8pt{\vss\hbox{\vrule height #1}\vfil}}
9324
9325 %

```

\edvertdots `\edvertdots{<len>}` vertical dotted line <len> high.

```

9326 \newcommand{\edvertdots}[1]{\vbox to 1pt{\vss\vbox to #1%
9327     {\cleaders\hbox{$\m@th\hbox{.}\vbox to 0.5em{ }$}\vfil}}}
9328
9329 %

```

\l@dtabaddcols `\l@dtabaddcols{<startcol>}{<endcol>}` adds the widths of the columns <startcol> through <endcol> to `\edfilldimen`. It is a L^AT_EX style reimplementation of the original `\@add@`.

```

9330 \newcommand{\l@dtabaddcols}[2]{%
9331     \l@dcheckstartend{#1}{#2}%
9332     \ifl@dstartendok
9333     \setcounter{addcolcount}{#1}%
9334     \@whilenum \value{addcolcount}<#2\relax \do
9335     {\advance\edfilldimen by \the \csname dcol\theaddcolcount\endcsname
9336     \advance\edfilldimen by \edtabcolsep
9337     \stepcounter{addcolcount}}%
9338     \advance\edfilldimen by \the \csname dcol\theaddcolcount\endcsname
9339     \fi
9340 }
9341
9342 %

```

\ifl@dstartendok `\l@dcheckstartend{<startcol>}{<endcol>}` checks that the values of <startcol> and <endcol> are sensible. If they are then `\ifl@dstartendok` is set TRUE, otherwise it is set FALSE.

```

9343 \newif\ifl@dstartendok
9344 \newcommand{\l@dcheckstartend}[2]{%
9345     \l@dstartendoktrue
9346     \ifnum #1<\@ne
9347     \l@dstartendokfalse
9348     \led@err@LowStartColumn
9349     \fi
9350     \ifnum #2>30\relax
9351     \l@dstartendokfalse
9352     \led@err@HighEndColumn
9353     \fi
9354     \ifnum #1>#2\relax
9355     \l@dstartendokfalse
9356     \led@err@ReverseColumns
9357     \fi
9358 }
9359
9360 %

```

`\edrowfill` `\edrowfill{<startcol>}{<endcol>}` fill fills columns `<startcol>` to `<endcol>` inclusive with `<fill>` (e.g. `\hrulefill`, `\upbracefill`). This is a \TeX style reimplementation and generalization of the original `\waklam`, `\Waklam`, `\waklamec`, `\wastricht` and `\wapunktel` macros.

```

9361 \newcommand*{\edrowfill}[3]{%
9362   \l@dtabaddcols{#1}{#2}%
9363   \hb@xt@ \the\l@dcolwidth{\hb@xt@ \the\edfilldimen{#3}\hss}}
9364 \let\@edrowfill=\edrowfill
9365 \def\@EDROWFILL@#1#2#3{\@edrowfill@{#1}{#2}{#3}}
9366
9367 %

```

`\edbeforetab` The macro `\edbeforetab{<text>}{<math>}` puts `<text>` at the left margin before array cell entry `<math>`. Conversely, the macro `\edaftertab{<math>}{<text>}` puts `<text>` at the right margin after array cell entry `<math>`. `\edbeforetab` should be in the first column and `\edaftertab` in the last column. The following macros support these.

`\leftltab` `\leftltab{<text>}` for `\edbeforetab` in `\ltab`.

```

9368 \newcommand{\leftltab}[1]{%
9369   \hb@xt@ \z@{\vbox{\edtabindent%
9370     \moveleft\Hilfsskip\hbox{\ #1}}\hss}}
9371
9372 %

```

`\leftrtab` `\leftrtab{<text>}{<math>}` for `\edbeforetab` in `\rtab`.

```

9373 \newcommand{\leftrtab}[2]{%
9374   #2\hb@xt@ \z@{\vbox{\edtabindent%
9375     \advance\Hilfsskip by \dcoli%
9376     \moveleft\Hilfsskip\hbox{\ #1}}\hss}}
9377
9378 %

```

`\leftctab` `\leftctab{<text>}{<math>}` for `\edbeforetab` in `\ctab`.

```

9379 \newcommand{\leftctab}[2]{%
9380   \hb@xt@ \z@{\vbox{\edtabindent\l@dcolcount=\l@dampcount%
9381     \advance\Hilfsskip by 0.5\dcoli%
9382     \setbox\hilfsbox=\hbox{\def\edlabel##1}%
9383     \disablel@dtabfeet$\displaystyle{#2}$}%
9384     \advance\Hilfsskip by -0.5\wd\hilfsbox%
9385     \moveleft\Hilfsskip\hbox{\ #1}}\hss}%
9386   #2}
9387
9388 %

```

`\rightctab` `\rightctab{<math>}{<text>}` for `\edaftertab` in `\ctab`.

```

9389 \newcommand{\rightctab}[2]{%
9390     \setbox\hilfsbox=\hbox{\def\edlabel##1{%
9391         \disablel@dtabfeet#2}\l@dampcount=\l@dcolcount%
9392         #1\hb@xt@\z@\vbox{\edtabindent\l@dcolcount=\l@dampcount%
9393         \advance\Hilfsskip by 0.5\l@dcolwidth%
9394         \advance\Hilfsskip by -\wd\hilfsbox%
9395         \setbox\hilfsbox=\hbox{\def\edlabel##1{%
9396             \disablel@dtabfeet$\displaystyle{#1}$}%
9397             \advance\Hilfsskip by -0.5\wd\hilfsbox%
9398             \advance\Hilfsskip by \edtabcolsep%
9399             \moveright\Hilfsskip\hbox{ #2}}\hss}%
9400     }
9401
9402 %

```

\rightltab `\rightltab{<math><math>}{<text>}` for `\edaftertab` in `\ltab`.

```

9403 \newcommand{\rightltab}[2]{%
9404     \setbox\hilfsbox=\hbox{\def\edlabel##1{%
9405         \disablel@dtabfeet#2}\l@dampcount=\l@dcolcount%
9406         #1\hb@xt@\z@\vbox{\edtabindent\l@dcolcount=\l@dampcount%
9407         \advance\Hilfsskip by \l@dcolwidth%
9408         \advance\Hilfsskip by -\wd\hilfsbox%
9409         \setbox\hilfsbox=\hbox{\def\edlabel##1{%
9410             \disablel@dtabfeet$\displaystyle{#1}$}%
9411             \advance\Hilfsskip by -\wd\hilfsbox%
9412             \advance\Hilfsskip by \edtabcolsep%
9413             \moveright\Hilfsskip\hbox{ #2}}\hss}%
9414     }
9415
9416 %

```

\rightrtab `\rightrtab{<math><math>}{<text>}` for `\edaftertab` in `\rtab`.

```

9417 \newcommand{\rightrtab}[2]{%
9418     \setbox\hilfsbox=\hbox{\def\edlabel##1{%
9419         \disablel@dtabfeet#2}%
9420         #1\hb@xt@\z@\vbox{\edtabindent%
9421         \advance\Hilfsskip by -\wd\hilfsbox%
9422         \advance\Hilfsskip by \edtabcolsep%
9423         \moveright\Hilfsskip\hbox{ #2}}\hss}%
9424     }
9425
9426 %

```

\rtab `\rtab{<body>}` typesets `<body>` as an array with the entries right justified.

\edbeforetab The process is first to measure the `<body>` to get the column widths, and then in a
\edaftertab second pass to typeset the body.

```

9427 \newcommand{\rtab}[1]{%
9428   \l@dnnullfills
9429   \def\edbeforetab##1##2{\lefttrtab{##1}{##2}}%
9430   \def\edaftertab##1##2{\righttrtab{##1}{##2}}%
9431   \measuretbody{#1}%
9432   \l@drestorefills
9433   \variab
9434   \setmrowright #1\&\&\&%
9435   \enablel@dtabfeet}
9436
9437 %

```

\measuretbody `\measuretbody{<body>}` measures the array `<body>`.

```

9438 \newcommand{\measuretbody}[1]{%
9439   \disablel@dtabfeet%
9440   \l@dcolcount=0%
9441   \nullsetzen%
9442   \l@dcolcount=0
9443   \measuremrow #1\&\&\&%
9444   \global\l@dampcount=1}
9445
9446 %

```

\rtabtext `\rtabtext{<body>}` typesets `<body>` as a tabular with the entries right justified.

```

9447 \newcommand{\rtabtext}[1]{%
9448   \l@dnnullfills
9449   \measuretbody{#1}%
9450   \l@drestorefills
9451   \variab
9452   \settroright #1\&\&\&%
9453   \enablel@dtabfeet}
9454
9455 %

```

\measuretbody `\measuretbody{<body>}` measures the tabular `<body>`.

```

9456 \newcommand{\measuretbody}[1]{%
9457   \disable@notes%
9458   \disablel@dtabfeet%
9459   \l@dcolcount=0%
9460   \nullsetzen%
9461   \l@dcolcount=0
9462   \measuretbody #1\&\&\&%
9463   \restore@notes%
9464   \global\l@dampcount=1}
9465
9466 %

```

`\ltab` Array with entries left justified.

```

\edbeforetab
\edaftertab
9467 \newcommand{\ltab}[1]{%
9468   \l@dnnullfills
9469   \def\edbeforetab##1##2{\leftltab{##1}{##2}}%
9470   \def\edaftertab##1##2{\rightltab{##1}{##2}}%
9471   \measurebody{#1}%
9472   \l@drestorefills
9473   \variab
9474   \setmrowleft #1\\&\\%
9475   \enablel@dtabfeet}
9476
9477 %

```

`\ltabtext` Tabular with entries left justified.

```

9478 \newcommand{\ltabtext}[1]{%
9479   \l@dnnullfills
9480   \measuretbody{#1}%
9481   \l@drestorefills
9482   \variab
9483   \settrrowleft #1\\&\\%
9484   \enablel@dtabfeet}
9485
9486 %

```

`\ctab` Array with centered entries.

```

\edbeforetab
\edaftertab
9487 \newcommand{\ctab}[1]{%
9488   \l@dnnullfills
9489   \def\edbeforetab##1##2{\leftctab{##1}{##2}}%
9490   \def\edaftertab##1##2{\rightctab{##1}{##2}}%
9491   \measurebody{#1}%
9492   \l@drestorefills
9493   \variab
9494   \setmrowcenter #1\\&\\%
9495   \enablel@dtabfeet}
9496
9497 %

```

`\ctabtext` Tabular with entries centered.

```

9498 \newcommand{\ctabtext}[1]{%
9499   \l@dnnullfills
9500   \measuretbody{#1}%
9501   \l@drestorefills
9502   \variab
9503   \settrrowcenter #1\\&\\%
9504   \enablel@dtabfeet}
9505
9506 %

```

```
\spreadtext907 \newcommand{\spreadtext}[1]{% \l@dcolumcount=\l@dampcount%
9508 \hb@xt@ \the\l@dcolumwidth{\hbox{#1}\hss}}
9509 %
```

```
\spreadmath9510 \newcommand{\spreadmath}[1]{%
9511 \hb@xt@ \the\l@dcolumwidth{\hbox{$\displaystyle{#1}$}\hss}}
9512 %
9513 %
```

\HILFSskip More helpers.

```
\Hilfsskip9514 \newskip\HILFSskip
9515 \newskip\Hilfsskip
9516 %
9517 %
```

```
\EDTABINDENT9518 \newcommand{\EDTABINDENT}{%
9519 \ifnum\l@dcolumcount=30\let\NEXT\relax\l@dcolumcount=0%
9520 \else\step\l@dcolumcount%
9521 \advance\Hilfsskip by\l@dcolumwidth%
9522 \ifdim\l@dcolumwidth=0pt\advance\hilfscount\@ne
9523 \else\advance\Hilfsskip by \the\hilfscount\edtabcolsep%
9524 \hilfscount=1\fi%
9525 \let\NEXT=\EDTABINDENT%
9526 \fi\NEXT}%
9527 %
```

\edtabindent (was \tabindent)

```
9528 \newcommand{\edtabindent}{%
9529 \l@dcolumcount=0\relax
9530 \Hilfsskip=0pt%
9531 \hilfscount=1\relax
9532 \EDTABINDENT%
9533 \hilfsskip=\hsize%
9534 \advance\hilfsskip -\Hilfsskip%
9535 \Hilfsskip=0.5\hilfsskip%
9536 }%
9537 %
9538 %
```

\EDTAB (was \TAB)

```
9539 \def\EDTAB #1|#2|{%
9540 \setbox\tabhilfbox=\hbox{$\displaystyle{#1}$}%
9541 \setbox\tabHilfbox=\hbox{$\displaystyle{#2}$}%
9542 \advance\tabelskip -\wd\tabhilfbox%
```

`\EDTABtext` (was `\TABtext`)

`\tabhilfbox` Further helpers.

edarrayl edarrayc edarrayr The ‘environment’ forms for \ltab, \ctab and \rtab.

edtabularl edtabularc edtabularr The ‘environment’ forms for `\ltabtext`, `\ctabtext` and `\rtabtext`.

XXXIII Quotation's commands

`\initnumbering@quote` This macro, called at the beginning of any numbered section, locally redefines the quotation and quote environments, in order to allow their use inside of numbered sections.

```

\quotation \initnumbering@quote defines quotation environment.
\endquotation
\quote
\endquote
\newcommand{\initnumbering@quote}{
  \ifnoquotation@else
  \renewcommand{\quotation}{\par\leavevmode%
    \parindent=1.5em%
    \skipnumbering%
    \ifautopar%
      \vskip-\parskip%
    \else%
      \vskip\topsep%
    \fi%
    \global\leftskip=\leftmargin%
    \global\rightskip=\leftmargin%
  }
  \renewcommand{\endquotation}{\par%
    \global\leftskip=0pt%
    \global\rightskip=0pt%
    \leavevmode%
    \skipnumbering%
    \ifautopar%
      \vskip-\parskip%
    \else%
      \vskip\topsep%
    \fi%
  }
  \renewcommand{\quote}{\par\leavevmode%
    \parindent=0pt%
    \skipnumbering%
    \ifautopar%
      \vskip-\parskip%
    \else%
      \vskip\topsep%
    \fi%
    \global\leftskip=\leftmargin%
    \global\rightskip=\leftmargin%
  }
  \renewcommand{\endquote}{\par%
    \global\leftskip=0pt%
    \global\rightskip=0pt%
    \leavevmode%
    \skipnumbering%
    \ifautopar%
      \vskip-\parskip%
    \else%
      \vskip\topsep%
    \fi%
  }
}
\fi
}

```

```
9618 %
```

XXXIV Section's title commands

XXXIV.1 Commands to disable some feature

`\ledsectnotoc` The `\ledsectnotoc` only disables the `\addcontentsline` macro.

```
9619 \newcommand{\ledsectnotoc}{\let\addcontentsline@gobblethree}
9620 %
```

`\ledsectnomark` The `\ledsectnomark` only disables the `\chaptermark`, `\sectionmark` and `\subsectionmark` macros.

```
9621 \newcommand{\ledsectnomark}{%
9622   \let\chaptermark@gobble%
9623   \let\sectionmark@gobble%
9624   \let\subsectionmark@gobble%
9625 }
9626 %
```

XXXIV.2 General overview

The system of `\eledxxxx` commands to section text work like this:

1. When one of these commands is called, `reledmac` writes to an auxiliary files:
 - The section level.
 - The section title.
 - The side (when `reledpar` is used).
 - The `pstart` where the command is called.
 - If we have starred version or not.
2. `reledmac` adds the title of the section to `pstart`, as normal content. This is to enable critical notes.
3. When \LaTeX is run a other time, this file is read. That:
 - Adds the `pstart` number to a list of `pstarts` where a sectioning command is used.
 - Defines a command, the name of which contains the `pstart` number, and which calls the normal \LaTeX sectioning command.
4. This last command is called when the `pstart` is effectively printed.

XXXIV.3 `\beforeeledchapter` command

We do not define commands for `\eledsection` and related if the `noeledsec` option is loaded. We use `etoolbox` tests and not the `\ifxxx... \else... \fi` structure to prevent problem of expansions with command after the `\ifxxx` which contains `\fi`. As we patch command inside this test, we need to change the category code of `#` character *before* `\notbool` statement, because the second argument is read with the standard catcode (read *The TeXbook* to understand when the catcode's change has effect).

```

9627 \catcode`\#=12
9628 \notbool{@noeled@sec}{%
9629 %

```

`\beforeeledchapter` For technical reasons, not yet solved, page-breaking before chapters can't be made automatically by `eledmac`. Users have to use `\beforeeledchapter`.

```

9630 \ifl@dmemoir
9631   \newcommand\beforeeledchapter{%
9632     \clearforchapter%
9633   }
9634 \else
9635   \newcommand\beforeeledchapter{%
9636     \if@openright%
9637       \cleardoublepage%
9638     \else%
9639       \clearpage%
9640     \fi%
9641   }
9642 \fi
9643 %

```

XXXIV.4 Auxiliary commands

`\print@leftmargin@eledsection` and `\print@rightmargin@eledsection` are added by `reledmac` inside the code of sectioning command, in order to affix lines numbers. They include tests for RTL languages.

```

9644 \def\print@rightmargin@eledsection{%
9645   \if@eled@sectioning%
9646     \begingroup%
9647     \if@RTL%
9648       \let\llap\rlap%
9649       \let\leftlinenum\rightlinenum%
9650       \let\leftlinenumR\rightlinenumR%
9651       \let\l@drd@ta\l@dld@ta%
9652       \let\l@drsn@te\l@dlsn@te%
9653     \fi%
9654     \hfill\l@drd@ta \csuse{LR}{\l@drsn@te}%
9655   \endgroup%
9656 \fi%

```

```

9657 }%
9658
9659 \def\print@leftmargin@eledsection{%
9660   \if@eled@sectioning%
9661     \leavevmode%
9662     \begingroup%
9663     \if@RTL%
9664       \let\rlap\llap%
9665       \let\rightlinenum\leftlinenum%
9666       \let\rightlinenumR\leftlinenumR%
9667       \let\l@dld@ta\l@dld@ta%
9668       \let\l@dlsn@te\l@dlsn@te%
9669     \fi%
9670     \l@dld@ta\csuse{LR}{\l@dlsn@te}%
9671     \endgroup%
9672   \fi%
9673 }%
9674
9675 %

```

XXXIV.5 Patching standard commands

We have to patch \LaTeX , book and memoir sectioning commands in order to:

- Disable `\edtext` inside.
- Disable page breaking (for `\chapter`).
- Add line numbers and sidenotes.

Unfortunately, Maïeul Rouquette was not able to try if memoir is loaded. That is why `eledmac` tries to define for both standard class and memoir class.

```

9676 \AtBeginDocument{%
9677
9678
9679 \pretocmd{\M@sect}
9680   {\let\old@edtext=\edtext%
9681    \let\edtext=\dummy@edtext@showlemma%
9682   }
9683   {}
9684   {}
9685
9686 \apptocmd{\M@sect}
9687   {\let\edtext=\old@edtext}
9688   {}
9689   {}
9690
9691 \patchcmd{\M@sect}
9692   { #9}

```

```

9693 { #9%
9694 \print@rightmargin@eledsection%
9695 }
9696 {}
9697 {}
9698
9699 \patchcmd{\M@sect}
9700 {\hskip #3\relax}
9701 {\hskip #3\relax%
9702 \print@leftmargin@eledsection%
9703 }
9704 {}
9705 {}
9706
9707 \patchcmd{\@mem@old@ssect}
9708 {#5}
9709 {#5%
9710 \print@leftmargin@eledsection%
9711 }
9712 {}
9713 {}
9714
9715 \patchcmd{\@mem@old@ssect}
9716 {\hskip #1}
9717 {\hskip #1%
9718 \print@rightmargin@eledsection%
9719 }
9720 {}
9721 {}
9722
9723
9724
9725 \patchcmd{\scr@startchapter}{\if@openright\cleardoublepage\else\clearpage\fi}{%
9726 \if@eled@sectioning\else%
9727 \ifl@dprintingpages\else%
9728 \if@openright\cleardoublepage\else\clearpage\fi%No clearpage inside a
\Pages: will keep critical notes from printing on the title page. Here for
scrbook.
9729 \fi%
9730 \fi%
9731 }
9732 {}
9733 {}
9734
9735 \patchcmd{\@makechapterhead}
9736 {#1}
9737 {\print@leftmargin@eledsection%
9738 #1%
9739 \print@rightmargin@eledsection%

```

```

9740 }
9741 {}
9742 {}
9743
9744 \patchcmd{\@makechapterhead}% For BIDI
9745 {\if@RTL\raggedleft\else\raggedright\fi}%
9746 {\if@eled@sectioning\else%
9747   \if@RTL\raggedleft\else\raggedright\fi%
9748   \fi%
9749 }%
9750 {}%
9751 {}%
9752
9753 \patchcmd{\@makeschapterhead}
9754 {#1}
9755 {\print@leftmargin@eledsection%
9756   #1%
9757   \print@rightmargin@eledsection%
9758 }
9759 {}
9760 {}
9761
9762 \pretocmd{\@sect}
9763 {\let\old@edtext=\edtext
9764   \let\edtext=\dummy@edtext@showlemma%
9765 }
9766 {}
9767 {}
9768
9769 \apptocmd{\@sect}
9770 {\let\edtext=\old@edtext}
9771 {}
9772 {}
9773
9774 \pretocmd{\@ssect}
9775 {\let\old@edtext=\edtext%
9776   \let\edtext=\dummy@edtext@showlemma%
9777 }
9778 {}
9779 {}
9780
9781 \apptocmd{\@ssect}
9782 {\let\edtext=\old@edtext}
9783 {}
9784 {}
9785
9786 %

```

hyperref also redefines \@sect. That is why, when manipulating arguments, we patch \@sect and the same only if hyperref is not used. If it is, we patch the \NR commands.

```

9787 \@ifpackageloaded{nameref}{
9788
9789   \patchcmd{\NR@sect}
9790     {#8}
9791     {#8%
9792       \print@rightmargin@eledsection%
9793     }
9794     {}
9795     {}
9796
9797   \patchcmd{\NR@sect}
9798     {\hskip #3\relax}
9799     {\hskip #3\relax%
9800       \print@leftmargin@eledsection%
9801     }
9802     {}
9803     {}
9804
9805   \patchcmd{\NR@ssect}
9806     {#5}
9807     {#5%
9808       \print@rightmargin@eledsection%
9809     }
9810     {}
9811     {}
9812
9813   \patchcmd{\NR@ssect}
9814     {\hskip #1}
9815     {\hskip #1%
9816       \print@leftmargin@eledsection%
9817     }
9818     {}
9819     {}
9820   }%
9821   {
9822     \patchcmd{\@sect}
9823       {#8}
9824       {#8%
9825         \print@rightmargin@eledsection%
9826       }
9827       {}
9828       {}
9829
9830     \patchcmd{\@sect}
9831       {\hskip #3\relax}
9832       {\hskip #3\relax%
9833         \print@leftmargin@eledsection%
9834       }
9835       {}
9836       {}

```

```

9837 \patchcmd{\@ssect}
9838   {\#5}
9839   {\#5%
9840     \print@rightmargin@eledsection%
9841   }
9842   {}
9843   {}
9844   {}
9845
9846 \patchcmd{\@ssect}
9847   {\hskip #1}
9848   {\hskip #1%
9849     \print@leftmargin@eledsection%
9850   }
9851   {}
9852   {}
9853   }%
9854 }%
9855 %

```

Close the `\notbool{@noeled@sec}` statement. Also, we have finished patching the commands, using `#` with a catcode equal to 12, so we are restoring the normal catcode for `#`.

```

9856 {}}%
9857 \protect\catcode`\#6 %Space NEEDS by \catcode
9858 %

```

`\chapter` We patch the `\chapter` command even if the `noeledsec` option is called, because we can use `\chapter` in the optional argument of a `\pstart` in parallel typesetting.

```

9859 \AtBeginDocument{%
9860 \patchcmd{\chapter}{\clearforchapter}{%
9861   \if@eled@sectioning\else%
9862     \ifl@dprintingpages\else%
9863       \clearforchapter%
9864     \fi%
9865   \fi%
9866   }%
9867   {}%
9868   {}%
9869
9870 \patchcmd{\chapter}{\if@openright\cleardoublepage\else\clearpage\fi}{%
9871   \if@eled@sectioning\else%
9872     \ifl@dprintingpages%
9873       \endgraf%
9874     \else%
9875       \if@openright\cleardoublepage\else\clearpage\fi%No clearpage inside a
\Pages: will keep critical notes from printing on the title page. Here for
classical classes
9876     \fi%

```

```

9877 \fi%
9878 }%
9879 {}%
9880 {}%
9881 }%
9882 %

```

\if@eled@sectioning The boolean \if@eled@sectioning is set to true when a sectioning command is called by a \eledxxx command, and set to false after. It is used to enable/disable line number printing.

```

9883 \newif\if@eled@sectioning%
9884 %

```

We reopen a new \notbool{@noeled@sec} statement, as we will define the \elesection commands.

```

9885 \notbool{@noeled@sec}{%
9886 %

```

XXXIV.6 Main code of \eledxxx commands

\eled@sectioning@out \eled@sectioning@out is the output file, to dump the pstarts where a sectioning command is used.

```

9887 \newwrite\eled@sectioning@out
9888 %

```

\eledchapter And now, the user sectioning commands, which write to the file, and also add content as a “normal” line.

```

\eledsection
\eledsubsection
\eledsubsubsection
\eledchapter*
\eledsection*
\eledsubsection*
\eledsubsubsection*
\newcommand{\eledchapter}[2][]{%
  \disable@familiarnotes%
  #2%
  \restore@familiarnotes%
  \ifledRcol%
    \immediate\write\eled@sectioningR@out{%
      \string\eled@chapter{#1}{\unexpanded{#2}}{\the\l@dnumpstartsR}{R}
    }%
  \else%
    \immediate\write\eled@sectioning@out{%
      \string\eled@chapter{#1}{\unexpanded{#2}}{\the\pstarts@read@L}{L}%
    }%
  \fi%
}
\newcommand{\eledsection}[2][]{%
  \disable@familiarnotes%
  #2%

```

```

9907 \restore@familiarnotes%
9908 \ifledRcol%
9909 \immediate\write\eled@sectioningR@out{%
9910 \string\eled@section{#1}{\unexpanded{#2}}{\the\l@dnumpstartsR}{R}
9911 }%
9912 \else%
9913 \immediate\write\eled@sectioning@out{%
9914 \string\eled@section{#1}{\unexpanded{#2}}{\the\pstarts@read@L}{R}%
9915 }%
9916 \fi%
9917 }
9918
9919 \newcommand{\eledsubsection}[2][{}]{%
9920 \disable@familiarnotes%
9921 #2%
9922 \restore@familiarnotes%
9923 \ifledRcol%
9924 \immediate\write\eled@sectioningR@out{%
9925 \string\eled@subsection{#1}{\unexpanded{#2}}{\the\l@dnumpstartsR}{R}
9926 }%
9927 \else%
9928 \immediate\write\eled@sectioning@out{%
9929 \string\eled@subsection{#1}{\unexpanded{#2}}{\the\pstarts@read@L}{R}%
9930 }%
9931 \fi%
9932 }
9933 \newcommand{\eledsubsubsection}[2][{}]{%
9934 \disable@familiarnotes%
9935 #2%
9936 \restore@familiarnotes%
9937 \ifledRcol%
9938 \immediate\write\eled@sectioningR@out{%
9939 \string\eled@subsubsection{#1}{\unexpanded{#2}}{\the\l@dnumpstartsR}
9940 }{R}%
9941 \else%
9942 \immediate\write\eled@sectioning@out{%
9943 \string\eled@subsubsection{#1}{\unexpanded{#2}}{\the\pstarts@read@L}
9944 }{R}%
9945 \fi%
9946 }
9947
9948
9949 \WithSuffix\newcommand\eledchapter*[2][{}]{%
9950 \disable@familiarnotes%
9951 #2%
9952 \restore@familiarnotes%

```

```

9953 \ifledRcol%
9954 \immediate\write\eled@sectioningR@out{%
9955 \string\eled@chapter{#1}{\unexpanded{#2}}{\the\l@dumpstartsR}{*}{R}
9956 }%
9957 \else%
9958 \immediate\write\eled@sectioning@out{%
9959 \string\eled@chapter{#1}{\unexpanded{#2}}{\the\pstarts@read@L}{*}{}%
9960 }%
9961 \fi%
9962 }
9963
9964 \WithSuffix\newcommand\eledsection*[2][]{%
9965 \disable@familiarnotes%
9966 #2%
9967 \restore@familiarnotes%
9968 \ifledRcol%
9969 \immediate\write\eled@sectioningR@out{%
9970 \string\eled@section{#1}{\unexpanded{#2}}{\the\l@dumpstartsR}{*}{R}
9971 }%
9972 \else%
9973 \immediate\write\eled@sectioning@out{%
9974 \string\eled@section{#1}{\unexpanded{#2}}{\the\pstarts@read@L}{*}{}%
9975 }%
9976 \fi%
9977 }
9978
9979 \WithSuffix\newcommand\eledsubsection*[2][]{%
9980 \disable@familiarnotes%
9981 #2%
9982 \restore@familiarnotes%
9983 \ifledRcol%
9984 \immediate\write\eled@sectioningR@out{%
9985 \string\eled@subsection{#1}{\unexpanded{#2}}{\the\l@dumpstartsR}{*}{R}
9986 }%
9987 \else%
9988 \immediate\write\eled@sectioning@out{%
9989 \string\eled@subsection{#1}{\unexpanded{#2}}{\the\pstarts@read@L}
9990 }{*}{}%
9991 \fi%
9992 }
9993
9994 \WithSuffix\newcommand\eledsubsubsection*[2][]{%
9995 \disable@familiarnotes%
9996 #2%
9997 \restore@familiarnotes%
9998 \ifledRcol%
9999 \immediate\write\eled@sectioningR@out{%
10000 \string\eled@subsubsection{#1}{\unexpanded{#2}}{\the\l@dumpstartsR

```

```

}{{*}}{R}
    }%
10001   \else%
10002     \immediate\write\eled@sectioning@out{%
10003       \string\eled@subsubsection{#1}{\unexpanded{#2}}{\the\pstarts@read@L
10004     }}{{*}}}%
10005     }%
10006   \fi%
10007 }
10008 %

```

XXXIV.7 Macros written in the auxiliary file

`\eled@chapter`
`\eled@section`
`\eled@subsection`
`\eled@subsubsection`

The sectioning macros, called in the auxiliary file. They have five arguments:

1. Optional arguments of \LaTeX sectioning command.
2. Mandatory arguments of \LaTeX sectioning command.
3. Pstart number.
4. Side: R if right, nothing if left.
5. Starred or not.

```

10009 \def\eled@chapter#1#2#3#4#5{%
10010   \ifstrempy{#4}%
10011   {%
10012     \ifstrempy{#1}%
10013     {%
10014       \csgdef{eled@sectioning@#3#5}{\let\edtext=\dummy@edtext@showlemma\
chapter{#2}}}%
10015       \csgdef{eled@sectmark@#3#5}{\let\edtext=\dummy@edtext{}\chaptermark
{#2}}}%
10016       }%Need for \pairs, because of using parbox.
10017       {%
10018         \csgdef{eled@sectioning@#3#5}{\let\edtext=\dummy@edtext@showlemma\
chapter[#1]{#2}}}%
10019         \csgdef{eled@sectmark@#3#5}{\let\edtext=\dummy@edtext{}\chaptermark
{#2}}}%Need for \pairs, because of using parbox.
10020         }%
10021       }%
10022       {%
10023         \ifstrempy{#1}%
10024         {\csgdef{eled@sectioning@#3#5}{\let\edtext=\dummy@edtext@showlemma\
chapter*{#2}}}%
10025         {\csgdef{eled@sectioning@#3#5}{\let\edtext=\dummy@edtext@showlemma\
chapter*[#1]{#2}}}%Bug in LaTeX!
10026         }%
10027         \listcsgadd{eled@sections#5@@}{#3}%

```

```

10028 }
10029 \def\eled@section#1#2#3#4#5{%
10030   \ifstrempy{#4}%
10031     {\ifstrempy{#1}%
10032       {%
10033         \csgdef{eled@sectioning@#3#5}{\section{#2}}%
10034         \csgdef{eled@sectmark@#3#5}{\let\edtext=\dummy@edtext{}\sectionmark
10035 {#2}}}%Need for \pairs, because of using parbox.
10036       }%
10037       {%
10038         \csgdef{eled@sectioning@#3#5}{\section[#1]{#2}}%
10039         \csgdef{eled@sectmark@#3#5}{\let\edtext=\dummy@edtext{}\sectionmark
10040 {#1}}}%Need for \pairs, because of using parbox.
10041       }%
10042     }%
10043     {\csgdef{eled@sectioning@#3#5}{\section*{#2}}}%
10044     {\csgdef{eled@sectioning@#3#5}{\section*[#1]{#2}}}%Bug in LaTeX!
10045   }
10046   \listcsgadd{eled@sections#5@@}{#3}%
10047 }
10048 \def\eled@subsection#1#2#3#4#5{%
10049   \ifstrempy{#4}%
10050     {\ifstrempy{#1}%
10051       {%
10052         \csgdef{eled@sectioning@#3#5}{\subsection{#2}}%
10053         \csgdef{eled@sectmark@#3#5}{\let\edtext=\dummy@edtext{}\csuse{
10054 subsectionmark}{#2}}}%Need for \pairs, because of using parbox. \csuse in
10055 case of \subsectionmark is not defined (book)
10056       }%
10057       {%
10058         \csgdef{eled@sectioning@#3#5}{\subsection[#1]{#2}}%
10059         \csgdef{eled@sectmark@#3#5}{\let\edtext=\dummy@edtext{}\csuse{
10060 subsectionmark}{#1}}}%Need for \pairs, because of using parbox. \csuse in
10061 case of \subsectionmark is not defined (book)
10062       }%
10063     }%
10064     {\ifstrempy{#1}%
10065       {\csgdef{eled@sectioning@#3#5}{\subsection*{#2}}}%
10066       {\csgdef{eled@sectioning@#3#5}{\subsection*[#1]{#2}}}%Bug in LaTeX!
10067     }
10068   }
10069   \listcsgadd{eled@subsection#5@@}{#3}%
10070 }
10071 \def\eled@subsubsection#1#2#3#4#5{%
10072   \ifstrempy{#4}%
10073     {\ifstrempy{#1}%
10074       {%
10075         \csgdef{eled@subsectioning@#3#5}{\subsubsection{#2}}%
10076         \csgdef{eled@subsectmark@#3#5}{\let\edtext=\dummy@edtext{}\subsubsectionmark
10077 {#2}}}%Need for \pairs, because of using parbox.
10078       }%
10079       {%
10080         \csgdef{eled@subsectioning@#3#5}{\subsubsection[#1]{#2}}%
10081         \csgdef{eled@subsectmark@#3#5}{\let\edtext=\dummy@edtext{}\subsubsectionmark
10082 {#1}}}%Need for \pairs, because of using parbox.
10083       }%
10084     }%
10085     {\ifstrempy{#1}%
10086       {\csgdef{eled@subsectioning@#3#5}{\subsubsection*{#2}}}%
10087       {\csgdef{eled@subsectioning@#3#5}{\subsubsection*[#1]{#2}}}%Bug in LaTeX!
10088     }
10089   }
10090   \listcsgadd{eled@subsubsection#5@@}{#3}%
10091 }

```

```

10072      {\csgdef{eled@sectioning@#3#5}{\subsubsection*{#2}}}%
10073      {\csgdef{eled@sectioning@#3#5}{\subsubsection*{#1}{#2}}}%Bug in
LaTeX!
10074    }
10075    \listcsgadd{eled@sections#5@@}{#3}%
10076    }
10077
10078 %

```

End of the conditional test about noeledsec option.

```

10079 }{}
10080 %

```

XXXV Page breaking or no page breaking depending of specific lines

By default, page breaks are automatic. However, the user can define lines which will force page breaks, or prevent page breaks around one specific line. On the first run, the line-list file records the line number of where the page break is being changed (either forced, or prevented). On the next run, page breaks occur either before or after this line, depending on how the user sets the command. The default setting is after the line.

\normal@page@break \normal@page@break is an etoolbox list which contains the absolute line number of the last line, for each page.

```

10081 \def\normal@page@break{}
10082 %

```

\l@prev@pb The \l@prev@pb macro is a etoolbox list, which contains the lines in which page breaks occur (before or after). The \l@prev@nopb macro is a etoolbox list, which contains the lines with NO page break before or after.

```

10083 \def\l@prev@pb{}
10084 \def\l@prev@nopb{}
10085 %

```

\ledpb The \ledpb macro writes the call to \led@pb in line-list file. The \ledpbnum macro writes the call to \led@pbnum in line-list file. The \lednopb macro writes the call to \led@nopb in line-list file. The \lednopbnum macro writes the call to \led@nopbnum in line-list file.

```

10086 \newcommand{\ledpb}{\write\linenum@out{\string\led@pb}}
10087 \newcommand{\ledpbnum}[1]{\write\linenum@out{\string\led@pbnum{#1}}}
10088 \newcommand{\lednopb}{\write\linenum@out{\string\led@nopb}}
10089 \newcommand{\lednopbnum}[1]{\write\linenum@out{\string\led@nopbnum{#1}}}
10090 %

```

`\led@pb` The `\led@pb` adds the absolute line number in the `\prev@pb` list. The `\led@pbnum` adds the argument in the `\prev@pb` list. The `\led@nopb` adds the absolute line number in the `\prev@nopb` list. The `\led@nopbnum` adds the argument in the `\prev@nopb` list.

```

10091 \newcommand{\led@pb}{\listxadd{\l@prev@pb}{\the\absline@num}}
10092 \newcommand{\led@pbnum}[1]{\listxadd{\l@prev@pb}{#1}}
10093 \newcommand{\led@nopb}{\listxadd{\l@prev@nopb}{\the\absline@num}}
10094 \newcommand{\led@nopbnum}[1]{\listxadd{\l@prev@nopb}{#1}}
10095 %

```

`\ledpbsetting` The `\ledpbsetting` macro only changes the value of `\led@pb@macro`, for which the default value is before.

`\led@pb@setting`

```

10096 \def\led@pb@setting{before}
10097 \newcommand{\ledpbsetting}[1]{\gdef\led@pb@setting{#1}}
10098 %

```

`\led@check@pb` The `\led@check@pb` and `\led@check@nopb` are called before or after each line. They check if a page break must occur, depending on the current line and on the content of `\l@pb`.

`\led@check@nopb`

```

10099 \newcommand{\led@check@pb}{\xifinlist{\the\absline@num}{\l@prev@pb}{\pagebreak[4]}}
10100 \newcommand{\led@check@nopb}{%
10101   \IfStrEq{\led@pb@setting}{before}{%
10102     \xifinlist{\the\absline@num}{\l@prev@nopb}{%
10103       {\numdef{\abs@prevline}{\the\absline@num-1}}%
10104       \xifinlist{\abs@prevline}{\normal@page@break}%
10105       {\nopagebreak[4]\enlargethispage{\baselineskip}}%
10106       {}}%
10107     {}}%
10108   }%
10109 }%
10110 \IfStrEq{\led@pb@setting}{after}{%
10111   \xifinlist{\the\absline@num}{\l@prev@nopb}{%
10112     \xifinlist{\the\absline@num}{\normal@page@break}%
10113     {\nopagebreak[4]\enlargethispage{\baselineskip}}%
10114     {}}%
10115 }%
10116 {}}%
10117 {}}%
10118 {}}%
10119 }
10120 %

```

XXXVI Long verse: prevents being separated by a page break

`\iflednopbinverse` The `\lednopbinverse` boolean is set to false by default. If set to true, `reledmac` will automatically prevent page breaks inside verse. The declaration is made at the beginning of the file, because it is used as a package option.

`\check@pb@in@verse` The `\check@pb@in@verse` checks if a verse is broken in two page. If true, it adds:

- The absolute line number of the first line of the verse -1 in the `\led@pb` list, if the page break must occur before the verse.
- The absolute line number of the first line of the verse -1 in the `\led@nopb` list, if the page break must occur after the verse.

```

10121 \newcommand{\check@pb@in@verse}{%
10122   \ifinstanza\iflednopbinverse\ifinserthangingsymbol% Using stanzas and
enabling page breaks in verse control, while on a hanging verse.
10123   \ifnum\page@num=\last@page@num\else%If we have change page
10124     \IfStrEq{\led@pb@setting}{before}{%
10125       \numgdef{\abs@line@verse}{\the\absline@num-1}%
10126       \ledpbnum{\abs@line@verse}%
10127     }{}%
10128     \IfStrEq{\led@pb@setting}{after}{%
10129       \numgdef{\abs@line@verse}{\the\absline@num-1}%
10130       \lednopbnum{\abs@line@verse}%
10131     }{}%
10132   \fi%
10133 \fi\fi\fi%
10134 }
10135 %

```

XXXVII Tools for hyperref package

`\Hy@raisedlink@left` The `hyperref` package provides a `\Hy@raisedlink` command, to be used to add an anchor to the top of a line and not to the bottom of it.³⁶

However, this command disrupts the line breaking mechanism when it is called before any word. This is why `reledmac` defines `\Hy@raisedlink@left` that is called to the left of words, at the beginning of `\edtext` or inside the `\edlabel` commands.³⁷

```

10136 \def\Hy@raisedlink@left#1{%
10137   \ifvmode
10138     #1%
10139   \else

```

³⁶<http://tex.stackexchange.com/a/17138/7712>.

³⁷The code is inspired by an answer given by @unbonpetit. Thanks to him. <http://texnique.fr:80/osqa/questions/781/hyraisedlink-perturbe-la-maniere-dont-se-fait-la-coupure-de-ligne/801>.

```

10140 \Hy@SaveSpaceFactor
10141 \llap{\smash{%
10142 \begingroup
10143 \let\HyperRaiseLinkLength\@tempdima
10144 \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
10145 \HyperRaiseLinkHook
10146 \expandafter\endgroup
10147 \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
10148 \Hy@RestoreSpaceFactor
10149 #1%
10150 \Hy@SaveSpaceFactor
10151 }%
10152 }}%
10153 \Hy@RestoreSpaceFactor
10154 \penalty\@M\hskip\z@ \relax
10155 \fi
10156 }
10157 %

```

XXXVIII Compatibility with eledmac

Here, we define some commands for the eledmac-compat option.

```

10158 \ifeledmaccompat@%
10159
10160 \newcommand{\footnormalX}[1]{\arrangementX[#1]{normal}}%
10161 \newcommand{\footparagraphX}[1]{\arrangementX[#1]{paragraph}}%
10162 \newcommand{\foottwocolX}[1]{\arrangementX[#1]{twocol}}%
10163 \newcommand{\footthreecolX}[1]{\XarrangementX[#1]{threecol}}%
10164
10165 \unless\ifnocritical@
10166 \newcommand{\footnormal}[1]{\Xarrangement[#1]{normal}}%
10167 \newcommand{\footparagraph}[1]{\Xarrangement[#1]{paragraph}}%
10168 \newcommand{\foottwocol}[1]{\Xarrangement[#1]{twocol}}%
10169 \newcommand{\footthreecol}[1]{\Xarrangement[#1]{threecol}}%
10170 \let\hsizetwocol\Xhsizetwocol
10171 \let\hsizethreecol\Xsizethreecol
10172 \let\bhookXnote\Xbhooknote
10173 \let\boxsymlinenum\Xboxsymlinenum
10174 \let\symlinenum\Xsymlinenum
10175 \let\beforenumberinfootnote\Xbeforenumber
10176 \let\afternumberinfootnote\Xafternumber
10177 \let\beforeXsymlinenum\XbeforeXsymlinenum
10178 \let\afterXsymlinenum\XafterXsymlinenum
10179 \let\inplaceofnumber\Xinplaceofnumber
10180 \let\Xlemmaseparator\lemmaseparator
10181 \let\afterlemmaseparator\Xafterlemmaseparator
10182 \let\beforelemmaseparator\Xbeforelemmaseparator
10183 \let\inplaceoflemmaseparator\Xinplaceoflemmaseparator

```

```

10184 \let\txtbeforeXnotes\Xtxtbeforenotes
10185 \let\afterXrule\Xafterrule
10186 \let\numberonlyfirstinline\Xnumberonlyfirstinline
10187 \let\numberonlyfirstintwlines\Xnumberonlyfirstintwlines
10188 \let\nonumberinfootnote\Xnonumberinfootnote
10189 \let\pstartinfootnote\Xpstart
10190 \let\pstartinfootnoteeverytime\Xpstarteverytime
10191 \let\onlyXpstart\Xonlypstart
10192 \let\Xnonumberinfootnote\Xnonumber
10193 \let\nonbreakableafternumber\Xnonbreakableafternumber
10194 \let\maxhXnotes\Xmaxhnotes
10195 \let\beforeXnotes\Xbeforenotes
10196 \let\boxlinenum\Xboxlinenum
10197 \let\boxlinenumalign\Xboxlinenumalign
10198 \let\boxstartlinenum\Xboxstartlinenum
10199 \let\boxendlinenum\Xboxendlinenum
10200 \let\twlines\Xtwlines
10201 \let\morethantwlines\Xmorethantwlines
10202 \let\twlinesbutnotmore\Xtwlinesbutnotmore
10203 \let\twlinesonlyinsamepage\Xtwlinesonlyinsamepage
10204 \fi
10205
10206 \unless\ifnofamiliar@
10207   \let\notesXwidthliketwocolumns\noteswidthliketwocolumnsX
10208 \fi
10209 \newcommandx{\parafootsep}[2][1,usedefault]{%
10210   \Xparafootsep[#1]{#2}%
10211   \parafootsepX[#1]{#2}
10212 }%
10213
10214 \newcommandx{\afternote}[2][1,usedefault]{%
10215   \Xafternote[#1]{#2}%
10216   \afternoteX[#1]{#2}%
10217 }%
10218
10219 \unless\ifnoend@
10220   \let\XendXtwlines\Xendtwlines
10221   \let\XendXmorethantwlines\Xendmorethantwlines
10222   \let\XhookXendnote\Xendhooknote
10223   \let\XboxXendlinenum\Xendboxlinenum%
10224   \let\XboxXendlinenumalign\Xendboxlinenumalign%
10225   \let\XboxXendstartlinenum\Xendboxstartlinenum%
10226   \let\XboxXendendlinenum\Xendboxendlinenum%
10227   \let\XendXlemmaseparator\Xendlemmaseparator
10228   \let\XendXbeforelemmaseparator\Xendbeforelemmaseparator
10229   \let\XendXafterlemmaseparator\Xendafterlemmaseparator
10230   \let\XendXinplaceoflemmaseparator\Xendinplaceoflemmaseparator
10231 \fi
10232
10233 \AtBeginDocument{%

```

```
10234 \ifdef\lineref{}\let\lineref\edlineref}%  
10235 }%  
10236  
10237  
10238 \fi%  
10239 %
```

</code>

Appendix A Things to do when changing versions

A.1 Migrating from edmac to ledmac

If you have never used edmac, ignore this section. If you have used edmac and are starting on a completely new document, ignore this section. Only read this section if you are converting an original edmac document to use ledmac.

The package still provides the original `\text` command, but it is (a) deprecated, and (b) its name has been changed³⁸ to `\critext`; use the `\edtext` macro instead. However, if you do use `\critext` (the new name for `\text`), the following is a reminder.

`\critext` Within numbered paragraphs, footnotes and endnotes are generated by forms of the `\critext` macro:

```
\critext{⟨lemma⟩}⟨commands⟩/
```

The `⟨lemma⟩` argument is the lemma in the main text: `\critext` both prints this as part of the text, and makes it available to the `⟨commands⟩` you specify to generate notes. The `/` at the end terminates the command; it is part of the macro's definition so that spaces after the macro will be treated as significant.

For example:

<code>I saw my friend \critext{Smith}</code>	1 I saw my friend
<code>\Afootnote{Jones C, D.}/</code>	2 Smith on Tuesday.
on Tuesday.	<u>2 Smith]</u> Jones C, D.

The lemma Smith is printed as part of this sentence in the text, and is also made available to the footnote that specifies a variant, Jones C, D. The footnote macro is supplied with the line number at which the lemma appears in the main text.

The `⟨lemma⟩` may contain further `\critext` commands. Nesting makes it possible to print an explanatory note on a long passage together with notes on variants for individual words within the passage. For example:

<code>\critext{I saw my friend</code>	1 I saw my friend
<code>\critext{Smith}{\Afootnote{Jones</code>	2 Smith on Tuesday.
<code>C, D.}/ on Tuesday.}</code>	<u>2 Smith]</u> Jones C, D.
<code>\Bfootnote{The date was</code>	<u>1–2 I saw my friend</u>
<code>July 16, 1954.}</code>	Smith on Tuesday.] The
<code>/</code>	date was July 16, 1954.

However, `\critext` cannot handle overlapping but unnested notes—for example, one note covering lines 10–15, and another covering 12–18; a `\critext` that starts in the `⟨lemma⟩` argument of another `\critext` must end there, too. (The `\lemma` and `\linenum` commands may be used to generate overlapping notes if necessary.)

The second argument of the `\critext` macro, `⟨commands⟩`, is the same as the second argument to the `\edtext` macro.

It is possible to define aliases for `\critext`, which can be easier to type. You can make a single character substitute for `\critext` by saying this:

```
\catcode'\<=\active
```

³⁸A name like `\text` is likely to be defined by other \LaTeX packages (it certainly is by the AMS packages) and it seems sensible to try and avoid clashes with other definitions.

```
\let<=\critext
```

Then you might say `<{Smith}\variant{Jones}/`. This of course destroys the ability to use `<` in any new macro definitions, so long as it remains in effect; hence it should be used with care.

Changing the character at the end of the command requires more work:

```
\catcode'\<=\active
\def\xtext#1#2>{\critext{#1}{#2}/}
\let<=\xtext
```

This allows you to say `<{Smith}\Afootnote{Jones}>`.

Aliases for `\critext` of the first kind shown here also can't be nested—that is, you can't use the alias in the text that forms the first argument to `\critext`. (See VI p. 136 to find out why.) Aliases of the second kind may be nested without any problem.

If you really have to use `\critext` in any of the tabular or array environments, then `\edtext` must not be used in the same environment. If you use `\critext` in one of these environments then you have to issue the declaration `\usingcritext` beforehand. The declaration `\usingedtext` must be issued to revert to the default assumption that `\edtext` will be used.

A.2 Migration from ledmac to eledmac

In `eledmac`, some changes were made in the code to allow easy customization. This may cause problems for people who have already made their own. The next sections explain how to handle this.

If you have created your own series using `\addfootins` and `\addfootinsX`, you must use instead the `\newseries` command (see 6.7.1 p. 41), and remove any `\Xfootnote` command.

If you have customized the `\XXXXXfmt` command, please check whether you can achieve the same by the commands documented for display options (7 p. 43) or `\Xfootnote` options (6.2.2 p. 30). Otherwise please add a new ticket on Github to request a new function for doing this.³⁹

If for some reason you do not want to make the modifications to use the new functions of `eledmac`, you can continue using your own `\XXXXXfmt` command, but you must replace:

```
\renewcommand*{XXXXfmt}[3]
```

with

```
\renewcommandx*{XXXXfmt}[4][4=Z]
```

³⁹<https://github.com/maieul/ledmac/issues>

If you do not make that, you will get a spurious [X], where X is series letter.

If you used a `\protect` command inside a `\footnote` command inside a numbered section, you must change the `\protect` to `\noexpand`. Otherwise the command after the `\protect` will be discarded.

A.3 Migration to eledmac 1.5.1

The version 1.5.1 corrects a bug in `stanzaindentrepetition` (cf. 9.3 p. 58). This bug had two consequences:

1. `stanzaindentrepetition` did not work when its value was greater than 2.
2. `stanzaindentrepetition` worked wrong when its value was equal to 2.

So, if you used `stanzaindentrepetition` with a value equal to 2, you had to change your `\setstanzaindent`s. Explanation:

```
\setcounter{stanzaindentrepetition}{2}
\setstanzaindent{5,1,0}
```

This code, in versions prior to 1.5.1, made the first line have an indentation of 0, the second line of 1, the third verse of 0, the fourth verse of 1 and so forth.

But this code should have instead achieved quite the contrary: the first line would have an indentation of 1, the second line of 0, the third line of 1, the fourth line of 0 and so forth.

So version 1.5.1 corrected this bug. If you want to keep the former presentation, you must change:

```
\setcounter{stanzaindentrepetition}{2}
\setstanzaindent{5,1,0}
```

to:

```
\setcounter{stanzaindentrepetition}{2}
\setstanzaindent{5,0,1}
```

A.4 Migration to eledmac 1.12.0

The migration to eledmac 1.12.0 is easy:

- You must first delete all the auxiliary files, then compile your document three times as usual.
- If you have modified `\l@reg`, which is not advisable, you must rename it to `\@nl@reg`.

There is an additional problem. If you have put text into brackets just after `\pstart` or `\pend`, this text will be considered to be an optional argument of `\pstart` or `\pend` (see 5.2.3 p. 19). If so, add a `\relax` between `\pstart`/`\pend` and the first bracket.

The version 1.12.0 also introduce a better way to handle sectional divisions inside numbered text. Please read 16.2 p. 75.

A.5 Migration to *eledmac* 17.1

This version changes the default setting of `\Xpstart`. Henceforth, `pstart` numbers will be printed in footnotes within the section of text where you have called `\numberpstarttrue`.

We do not see any reason to print them in the other sections. However, if you want to print the `\pstart` numbers in every footnote, whatever the section, without having to use `\numberpstarttrue`, you can use `\Xpstarteverytime`.

A.6 Migration to *eledmac* 1.21.0

A.6.1 `\Xledsetnormalparstuff` and `\ledsetnormalparstuffX`

The `\ledsetnormalparstuff` has been split into two different commands:

- `\Xledsetnormalparstuff` for critical notes;
- `\ledsetnormalparstuffX` for familiar notes.

Both commands can take an optional argument which is the series letter. If you have redefined `\ledsetnormalparstuff` or any of the commands which call them, you must change them accordingly.

A.6.2 Endnotes

In any case, delete the `.end` file before the next run.

The previous version of *Eledmac* had a bug: there were two spaces between the starting page number and the starting line number, but only one space between the ending page number and the ending line number.

As a matter of fact, a spurious space was added after the first `\printnpnum`. This spurious space has been deleted. However, if you want to keep the previous spurious space, you may load the package with the `oldprintnpnumspace` option.

If you have redefined `\endprint`, you must:

- Contact us and ask for the feature that required your hack, in order to avoid such a hack in the future.
- Use the new fifth argument.
- Add `\xdef\@currentseries{#4}` at the beginning of your own command.

A.7 Migration to *eledmac* 1.22.0

The `\ledinnote` command now takes a first optional argument, which is the label for the hyperreference. If you have redefined it, change your redefinition, and check whether you can avoid this redefinition by only redefining `\ledinnotemark`.

A.8 Migration to *eledmac* 1.23.0

You must delete the numbered auxiliary files before compiling with the new version of *eledmac*.

A.9 Migration from eledmac to reledmac

There are many changes in reledmac which require the user to make modifications.

A.9.1 Risk of ‘no room for a new’

The risk to obtain a ‘no room for a new something’ error is greater in reledmac than it is in eledmac. See 19.1.3 p. 78 in order to know how to limit it.

A.9.2 Multiple indices with memoir

Eledmac and ledmac used the specific indexing tools of the memoir class designed to produce multiple indices. However, eledmac could also use imakeidx or indextools tools independently of the memoir class. This system forced to maintain redundant code. Since reledmac, we use only the imakeidx or indextools tools.

Consequently: Users of memoir are invited to use indextool or imakeidx to produce multiple indices.

A.9.3 Deprecated commands and options

The table of deprecated commands and their alternatives follows. Note that the way some commands must be used may have changed. Please read the handbook.

<i>Deprecated command</i>	<i>Replaced with</i>
<code>\addfootins</code>	<code>\newseries</code>
<code>\addfootinsX</code>	<code>\newseries</code>
<code>\critext</code>	<code>\edtext</code>
<code>\falseverse</code>	<code>\newverse</code>
<code>\interparanoteglue</code>	<code>\Xafternote</code> and <code>\afternoteX</code>
<code>\ledchapter</code>	<code>\eledchapter</code>
<code>\ledsection</code>	<code>\eledsection</code>
<code>\ledsetnormalparstuff</code>	<code>\Xledsetnormalparstuff</code> and <code>\ledsetnormalparstuffX</code>
<code>\ledsubsection</code>	<code>\eledsubsection</code>
<code>\ledsubsubsection</code>	<code>\eledsubsubsection</code>
<code>\noeledsec</code>	Package option <code>noeledsec</code>
<code>\noendnotes</code>	Package option <code>noendnotes</code>
<code>\pageparbreak</code>	<code>\ledpb</code>

The `ledsecnolinenumber` option has been removed, because it was related to deprecated commands.

The `oldprintnpnumspace` option has been removed too, because it was related to a historical bug. The `\usingedtext` and `\usingcritext` commands are also deprecated.

A.9.4 `\renewcommand` replaced by command

Many uses of `\renewcommand` have been replaced with uses of specific commands. Please read handbook about specific commands.

<i>Deprecated <code>\renewcommand</code></i>	<i>Replaced with</i>
<code>\@led@extranofeet</code>	<code>\newseries</code>
<code>\apprefprefixmore</code>	<code>\setapprefprefixmore</code>
<code>\apprefprefixsingle</code>	<code>\setapprefprefixsingle</code>
<code>\endstanzaextra</code>	Optional argument of <code>\&</code>
<code>\hangingsymbol</code>	<code>\sethangingsymbol</code>
<code>\ledfootinsdim</code>	<code>\Xmaxhnotes</code> and <code>\maxhnotesX</code>
<code>\parafootftmsep</code>	<code>\Xparafootsep</code> and <code>\parafootsepX</code>
<code>\notenumfont</code>	<code>\Xnotenumfont</code> , <code>\Xendnotenumfont</code> and <code>\notenumfontX</code>
<code>\notefontsetup</code>	<code>\Xnotefontsize</code> , <code>\Xendnotefontsize</code> and <code>\notefontsizeX</code>
<code>\sidenotesep</code>	<code>\setsidenotsep</code>
<code>\startstanzahook</code>	Optional argument of <code>\stanza</code>
<code>\symplinenum</code>	<code>\Xsymplinenum</code>

A.9.5 Commands the names of which have been changed

In order to help the migration from eledmac to reledmac, you may load reledmac with `eledmac-compat` option. However, it is advised not to, and to change the command names themselves instead. In many cases, you use only a few of them, except the `\footparagraph` command.

<i>Old command</i>	<i>New command</i>
<code>\footparagraph</code>	<code>\Xarrangement</code>
<code>\footnormal</code>	<code>\Xarrangement</code>
<code>\foottwocol</code>	<code>\Xarrangement</code>
<code>\footthreecol</code>	<code>\Xarrangement</code>
<code>\footparagraphX</code>	<code>\arrangementX</code>
<code>\footnormalX</code>	<code>\arrangementX</code>
<code>\foottwocolX</code>	<code>\arrangementX</code>
<code>\footthreecolX</code>	<code>\arrangementX</code>
<code>\afterlemmaseparator</code>	<code>\Xafterlemmaseparator</code>
<code>\afternote</code>	<code>\Xafternote</code> and <code>\afternoteX</code>
<code>\afternumberinfootnote</code>	<code>\Xafternumber</code>
<code>\afterXrule</code>	<code>\Xafterrule</code>
<code>\afterXsymplinenum</code>	<code>\Xaftersymplinenum</code>
<code>\beforelemmaseparator</code>	<code>\Xbeforelemmaseparator</code>
<code>\beforenumberinfootnote</code>	<code>\Xbeforenumber</code>
<code>\beforeXnotes</code>	<code>\Xbeforenotes</code>
<code>\beforeXsymplinenum</code>	<code>\Xbeforesymplinenum</code>

<i>Old command</i>	<i>New command</i>
<code>\bhookXnote</code>	<code>\Xbhookendnote</code>
<code>\bhookXnote</code>	<code>\Xbhooknote</code>
<code>\boxendlinenum</code>	<code>\Xboxendlinenum</code>
<code>\boxlinenum</code>	<code>\Xboxlinenum</code>
<code>\boxlinenumalign</code>	<code>\Xboxlinenumalign</code>
<code>\boxstartlinenum</code>	<code>\Xboxstartlinenum</code>
<code>\boxsymlinenum</code>	<code>\Xboxsymlinenum</code>
<code>\boxXendlinenum</code>	<code>\Xendboxlinenum</code>
<code>\boxXendlinenumalign</code>	<code>\Xendboxlinenumalign</code>
<code>\boxXendstartlinenum</code>	<code>\boxXendstartlinenum</code>
<code>\letboxXendendlinenum</code>	<code>\Xendletboxendlinenum</code>
<code>\hsizetwocol</code>	<code>\Xhsizetwocol</code>
<code>\hsizethreecol</code>	<code>\Xhsizethreecol</code>
<code>\inplaceoflemmaseparator</code>	<code>\Xinplaceoflemmaseparator</code>
<code>\inplaceofnumber</code>	<code>\Xinplaceofnumber</code>
<code>\lemmaseparator</code>	<code>\Xlemmaseparator</code>
<code>\maxhXnotes</code>	<code>\Xmaxhnotes</code>
<code>\morethantwolines</code>	<code>\Xmorethantwolines</code>
<code>\nonumberinfootnote</code>	<code>\Xnonumber</code>
<code>\notesXwidthliketwocolumns</code>	<code>\noteswidthliketwocolumnsX</code>
<code>\noXlemmaseparator</code>	<code>\Xnolemmaseparator</code>
<code>\numberonlyfirstinline</code>	<code>\Xnumberonlyfirstinline</code>
<code>\numberonlyfirstintwolines</code>	<code>\Xnumberonlyfirstintwolines</code>
<code>\nonbreakableafternumber</code>	<code>\Xnonbreakableafternumber</code>
<code>\onlyXpstart</code>	<code>\Xonlypstart</code>
<code>\parafootsep</code>	<code>\Xparafootsep</code> and <code>\parafootsepX</code>
<code>\pstartinfootnote</code>	<code>\Xpstart</code>
<code>\pstartinfootnoteeverytime</code>	<code>\Xpstarteverytime</code>
<code>\symlinenum</code>	<code>\Xsymlinenum</code>
<code>\twolines</code>	<code>\Xtwolines</code>
<code>\twolinesbutnotmore</code>	<code>\Xtwolinesbutnotmore</code>
<code>\twolinesonlyinsamepage</code>	<code>\Xtwolinesonlyinsamepage</code>
<code>\txtbeforeXnotes</code>	<code>\Xtxtbeforenotes</code>
<code>\XendXafterlemmaseparator</code>	<code>\Xendafterlemmaseparator</code>
<code>\XendXbeforelemmaseparator</code>	<code>\Xendbeforelemmaseparator</code>
<code>\XendXinplaceoflemmaseparator</code>	<code>\Xendinplaceoflemmaseparator</code>
<code>\XendXlemmaseparator</code>	<code>\Xendlemmaseparator</code>
<code>\XendXmorethantwolines</code>	<code>\Xendmorethantwolines</code>
<code>\XendXtwolines</code>	<code>\Xendtwolines</code>
<code>\Xnonumberinfootnote</code>	<code>\Xnonumber</code>
<code>\lineref</code>	<code>\edlineref</code>

A.9.6 Endnotes

With *reledmac*, there is now one auxiliary file for each endnotes set (.Aend, .Bend, .Cend etc.). If you have overridden `\doendnotes` (which you should not have done) you must adapt your code.

A.9.7 Z Series

The ‘Z’ series of notes has been removed. Only five series are provided now by default: A, B, C, D, E.

A.9.8 Internal commands

Users who have overridden internal commands, which is wrong, must adapt according to the following. Or better, they should not override any of such commands and use *reledmac* options instead.

- If you have modified `\Xfootfmt`, note that the fourth argument is now mandatory.
- `\unvxh` has been replaced with `\Xunvxh` and `\unvxhX` with two mandatory arguments.

A.10 Migration to *reledmac* 2.1.0

Reledmac 2.1.0 fix some bugs when using `\Xbhooknote` and `\bhooknoteX` not in order to execute code at the beginning of each notes, but to insert content of at the beginning of each notes.

People who use these commands to do it, which is not the original idea, must change the following:

1. Horizontal space is no longer automatically added after the content of the `\Xbhooknote/\bhooknoteX` argument. You must include it manually. So instead of `\Xbhooknote{content}`, use `\Xbhooknote{content }.`
2. Indent is no longer automatically added before the content of the `\Xbhooknote/\bhooknoteX` argument. If you want to keep it, add `\indent` to the argument of `\Xbhooknote/\bhooknoteX`.

A.11 Migration to *reledmac* 2.1.3

Reledmac 2.1.3 fix an historical bug, (style in *ledmac* 0.7!) which doubled the space before the rules of paragraphed familiar footnotes. Consequently, if you use paragraphed familiar footnotes, you should maybe adapt it, playing with `\beforenotesX`.

A.12 Migration to *reledmac* 2.3.0

Before *reledmac* 2.3.0, for typesetting verse, any empty line was considered a paragraph inside verses. Counting empty lines this created breaking verse, hanging verses, and also added spurious vertical spaces. Version 2.3.0 disables paragraph in stanza. If you want vertical space, use the optional argument of `\stanza` or `\endverse`.

A.13 Migration to reledmac 2.4.0

It is not mandatory, but strongly recommended, to change any `\renewcommand{\endashchar}{\langle...\rangle}` to the use of `\Xlinerangeseparator` or `/` and `\Xendlinerangeseparator` (7.2.5 p. 46).

A.14 Migration to reledmac 2.5.0

It is strongly recommended to stop redefining `\printnpnum` and to use the hooks documented in 7.2.4 p. 46.

`\xlineref` does not print anymore the side flag (R for right side), because it is incompatible with numerical test. Use `\xflagref` to obtain it.

The `\printlines` and `\printendlines` commands take now an eighth argument, which is the side flag. It is strongly recommended to NEVER redefine these two commands and to use the setting commands instead (or to ask for new setting commands if the actual does not answer to your needs). However, if you have done it, just change your redefinition to have a new argument.

It is strongly recommended to stop redefining `\fullstop` and to use `\Xsublinesep` instead.

A.15 Migration to reledmac 2.7.0

`\Serefonlypage` (introduced in reledmac 2.5.0) added an parenthesis after the page number. This was just an error, linked to a bad imitation of `\Serefwithpage`. That has been deleted. And so, the `\XendafterpagenumberSerefonlypage` to set it was also deleted.

`\rigidbalance` is split to two new commands: `\Xrigidbalance` for critical footnotes and `\rigidbalanceX` for familiar footnotes. If you have redefined it — but why should you have ?—, you should split your single redefinition in two redefinitions.

A.16 Migration to reledmac 2.7.2

`\Xhsize` is already defined in the `floatrow` package. It becomes `\Xwidth`, and, consequently, `\hsizeX` becomes `\widthX`.

The ancient names are temporarily maintained as aliases.

A.17 Migration to reledmac 2.8.0

Reledmac 2.8.0 fix spurious indents for paragraphed critical and familiar footnotes in `ledgroup` and `minipage`. You can re-establish the indent with `\Xparindent` and `\parindentX`.

A.18 Migration to reledmac 2.13.1

Reledmac 2.5.0 added a bug, which makes the right flag to be printed on the right side of critical footnotes, even if not explicitly requested by using `\Xlineflag`.

Version 2.13.1 solves this issue. Please use `\Xlineflag` if you want to add the right flag.

A.19 Migration to reledmac 2.18.0

After updating reledmac, and before any new compilation, you need to clean your `.aux` files, if you use `\edlabel` or related.

A.20 Migration to reledmac 2.21.0

Previously, there was a bug, which meant that the description in the handbook was incorrect. If you wrote

```
The \edtext{creature\edindex{elephant} was quite
    unafraid}{\Afootnote{Of the mouse, that is.}}
```

“elephant” was indexed in the main text and in the critical footnotes. With the new version of reledmac, it is indexed only in main text. If you also want to index it in critical footnotes, do

```
The \edtext{creature\edindex{elephant} was quite
    unafraid}{\Afootnote{\edindex{elephant}Of the mouse, that is.}}
```

A.21 Migration to reledmac 2.24.0

When using `\labelpstarttrue`, a spurious space^a was introduced after the `pstart` number (only for normal typesetting, not while typesetting in parallel). The new version of the package has deleted this spurious space. If you consider that it was NOT a spurious space, you should add it manually in your definition of `\thepstart`.

A.22 Migration to reledmac 2.26.0

You must delete your `.aux` file after having upgraded to this new version of reledmac.

A.23 Migration to reledmac 2.27.1

This release fixes spurious space in `\hidenumbering`. If you considered this spurious space as normal, you must insert it manually using.

```
xx\hidenumbering\ xx
```

To get the space after `xx`.

A.24 Migration to reledmac 2.30.0

If you have multiple annotations for the same line, these are now separated with a comma in the margin. You can use `\setlinenumannotationsep` to change the separator.

A.25 Migration to reledmac 2.31.1

If you use `\Xgroupbyline`, the indentation of the notes has been deleted, in order to have the same behavior as for normal critical notes.

Use `\Xparindent` to restore indentation.

A.26 Migration to reledmac 2.32.7

For paragraphed familiar footnotes, the separator between notes was `\Xparafootsep` instead of `\parafootsepX`. This release fixes this bug. You may adapte your settings.

Appendix B Auxiliary softwares

This appendix lists some software and tools related to *reledmac* that may be useful.

B.1 *samewords*

The *samewords* program (Michael Stenskjær Christensen) automatically adds `\sameword` commands (6.3 p. 33) into a `.tex` file.

<https://samewords.readthedocs.io/en/latest/>

B.2 critical-keys for *Emacs*

The *Emacs* editor has a package to help inserting *reledmac*'s commands (Juan Manuel Macías Chaín).

<https://gitlab.com/maciaschain/critical-keys>

B.3 critical-marks for *Emacs*

A set of functions for *Emacs* that run in the export process from Org Mode to LaTeX and replace a series of simple textual marks with the basic *reledmac*'s commands (Juan Manuel Macías Chaín) <https://gitlab.com/maciaschain/critical-marks>

B.4 Import from TEI

B.5 Import from TEI

There are multiple tools to convert from XML-TEI to *reledmac*. Here is a non exhaustive-list:

- <http://ciham-digital.huma-num.fr/teicat/>
- https://github.com/fizzbucket/tei_transformer
- <https://github.com/TEIC/Stylesheets>
- <http://lombardpress.org/print/>

- <https://github.com/Jean-Baptiste-Camps/TEItoLaTeX>

Please, tell us if you know of other tools.

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Index

Symbols

<code>\&</code>	57
<code>\@EDROWFILL@</code>	1
<code>\@adv</code>	1
<code>\@advancestanzanumber</code>	1
<code>\@annot</code>	1
<code>\@annot@end@print</code>	1
<code>\@annot@start@print</code>	1
<code>\@beforeinsertofthisedtext</code>	1
<code>\@check@edtext@args</code>	1
<code>\@docclearpage</code>	1
<code>\@doreinfeetX</code>	1

<code>\@edindex@fornote@</code>	1
<code>\@edindex@hyperref</code>	1
<code>\@edrowfill@</code>	1
<code>\@edtext@level</code>	1
<code>\@emptytoks</code>	1
<code>\@fnpos</code>	1
<code>\@footnotemark</code>	1
<code>\@footnotetext</code>	1
<code>\@getfirstseries</code>	1
<code>\@gobblefour</code>	1
<code>\@gobbleseven</code>	1
<code>\@gobblethree</code>	1
<code>\@h</code>	1
<code>\@changingsymbol</code>	1
<code>\@iiiminipage</code>	1
<code>\@insertstanzanumber</code>	1
<code>\@insidethisline</code>	1
<code>\@k</code>	1
<code>\@l@dttempcnta</code>	1
<code>\@l@dttempcntb</code>	1
<code>\@lab</code>	1
<code>\@led@testifnofoot</code>	1
<code>\@lemma</code>	1
<code>\@line@#num</code>	1
<code>\@linenumannotationsep</code>	1
<code>\@lock</code>	1
<code>\@lopL</code>	1
<code>\@lopR</code>	1
<code>\@makechapterhead</code>	1
<code>\@makeschapterhead</code>	1
<code>\@mem@extranofeet</code>	1
<code>\@mem@old@ssect</code>	1
<code>\@mpfnpos</code>	1
<code>\@msd</code>	1
<code>\@msd@c</code>	1
<code>\@msd@options@iffullpage</code>	1
<code>\@msdata@list</code>	1
<code>\@nl</code>	1
<code>\@nl@reg</code>	1
<code>\@opXfeet</code>	1
<code>\@outputpage</code>	1
<code>\@page</code>	1
<code>\@pend</code>	1
<code>\@pendR</code>	1
<code>\@ref</code>	1
<code>\@ref@reg</code>	1
<code>\@ref@reg@parse</code>	1
<code>\@sect</code>	1
<code>\@series</code>	1
<code>\@set</code>	1

\@sidenoteseop	1
\@ssect	1
\@startstanza	1
\@stopmsd	1
\@stopstanza	1
\@sw	1
\@tag	1
\@wredindex	1
\@xloop	1
\@xympar	1
CLASSarticle	78
CLASSbook	78, 378
CLASSmemoir	222, 223, 288–291, 326, 378, 398, 462, 466
CLASSscrbook	466
COMMAND*footnote	79
COMMAND\...\@footnotemark...	226
COMMAND\...d@ta	165
COMMAND\<hook	
@<series	275
COMMAND\<hookname	
<pseudoseris	277
COMMAND\<type	
footfmt	210
COMMAND\@@line	200
COMMAND\@MM	186, 463
COMMAND\@Rlineflag	328, 463
COMMAND\@Serefprefix	305
COMMAND\@Serefprefixmore	305
COMMAND\@add@	368
COMMAND\@adv	119
COMMAND\@annot	171
COMMAND\@annot@end@print	213
COMMAND\@annot@start@print	213, 217, 256
COMMAND\@apprefprefixmore	305
COMMAND\@apprefprefixsingle	305
COMMAND\@beforeinsertofthisedtext	143
COMMAND\@bsphack	293
COMMAND\@docclearpage	289, 290, 456, 466
COMMAND\@doreinfeetX	466
COMMAND\@dprintingcolumns	463
COMMAND\@edindex@hyperref	328–330
COMMAND\@edtext@level	140
COMMAND\@esphack	293
COMMAND\@firstofone	38
COMMAND\@fnpos	244, 285
COMMAND\@footnotemark	223, 456, 466
COMMAND\@footnotetext	223, 224, 456
COMMAND\@gobble	27, 37, 138, 139, 171, 269
COMMAND\@gobblefive	465
COMMAND\@gobblefour	462

COMMAND\@gobbleseven	271
COMMAND\@gobblethree	455
COMMAND\@h	203
COMMAND\@hangingsymbol	334
COMMAND\@iiiminipage	317, 319, 455, 466
COMMAND\@iiiminpage	317
COMMAND\@l	460
COMMAND\@l@tempcnta	168, 172, 180
COMMAND\@l@tempcntb	172
COMMAND\@l@reg	460
COMMAND\@lab	115, 293, 296, 301, 455
COMMAND\@ldunboxmpfoot	320
COMMAND\@led@extranofeet	399
COMMAND\@ledinnote@command	324, 325
COMMAND\@lemma	143, 145
COMMAND\@lock	109, 335
COMMAND\@lopL	456
COMMAND\@lopR	456
COMMAND\@makecol	285, 288, 466
COMMAND\@mempnum	291
COMMAND\@mpfnpos	244
COMMAND\@msd	344
COMMAND\@msd@c	344
COMMAND\@msd@options@iffullpage	351
COMMAND\@msdata@list	344, 345
COMMAND\@nl	115–120, 130, 172, 296, 455, 456
COMMAND\@nl@reg	116, 396, 456, 460
COMMAND\@opXfeet	456
COMMAND\@opfeetX	466
COMMAND\@opxtrafeeti	466
COMMAND\@outputpage	291, 292
COMMAND\@page	116, 117, 296
COMMAND\@pend	456
COMMAND\@pendR	456
COMMAND\@ref	115, 126, 127, 132, 138
COMMAND\@ref@later	127, 133
COMMAND\@ref@reg	126, 171, 456
COMMAND\@ref@reg@parsearg	127
COMMAND\@reinserts	285–288, 466
COMMAND\@secondoftwo	80
COMMAND\@sect	380
COMMAND\@series	273
COMMAND\@set	120
COMMAND\@sidenotesep	316
COMMAND\@stopmsd	345
COMMAND\@sw	127, 147, 150, 151
COMMAND\@tag	139, 141, 145
COMMAND\@tempcnta	94
COMMAND\@tempcntb	94
COMMAND\@this@crossref@start	222

COMMAND\@toksa	101
COMMAND\@toksb	101
COMMAND\@xloop	181, 182
COMMAND\@xympar	309, 466
COMMAND\Aendnote	17, 30
COMMAND\Afootfmt	186
COMMAND\Afootgroup	186
COMMAND\Afootnote	9, 17, 29, 30, 33, 141, 195, 222, 245, 264, 465
COMMAND\Afootstart	186
COMMAND\AtBeginDocument	288
COMMAND\AtEndEveryPend	20, 472
COMMAND\AtEveryPend	19, 20, 60, 158, 462, 464, 466, 472
COMMAND\AtEveryPend*	19
COMMAND\AtEveryPstart	19, 20, 60, 462, 464, 466, 469, 472
COMMAND\AtEveryPstart*	19
COMMAND\AtEveryStanza	60, 470, 472
COMMAND\AtEveryStopStanza	60, 470, 472
COMMAND\AtStartEveryPstart	20, 472
COMMAND\AtStartEveryStanza	60, 472
COMMAND\BeforeEveryStopStanza	60, 472
COMMAND\Bendnote	17, 29
COMMAND\Bfootnote	9, 17, 222, 245, 264
COMMAND\Centering	53
COMMAND\Cfootnote	222
COMMAND\Columns	94, 154, 191
COMMAND\Dfootnote	222
COMMAND\Efootnote	222
COMMAND\Gls	71
COMMAND\Hy@raisedlink	390
COMMAND\Hy@raisedlink@left	390
COMMAND\LTR	52
COMMAND\NR	380
COMMAND\Pages	94, 154, 286, 287, 290
COMMAND\ProcessOptionsX	84
COMMAND\RL	51
COMMAND\RaggedLeft	53
COMMAND\RaggedRight	53
COMMAND\RenewExpandableDocumentCommand	38, 149
COMMAND\SEonlypage	302, 468
COMMAND\SEref	64–67, 302, 306, 469, 471, 475
COMMAND\SErefonlypage	65–67, 402, 468
COMMAND\SErefwithpage	64, 66, 67, 302, 306, 402, 468, 470
COMMAND\Stanza	461
COMMAND\Waklam	369
COMMAND\X@doreinfeet	287, 466
COMMAND\XR@prefix	309
COMMAND\XR@test	309
COMMAND\XR@test@mac	309
COMMAND\XR@test@mac@test	309
COMMAND\XXXXXXfmt	395

COMMAND\XXXXXfmt	395
COMMAND\Xafterenumber	48
COMMAND\Xafterlemmaseparator	50, 399
COMMAND\Xafternote	53, 54, 398, 399
COMMAND\Xafternumber	48, 399
COMMAND\Xafterrule	55, 245, 399, 461, 464
COMMAND\Xaftersymlinenum	48, 399
COMMAND\Xarrangement	43, 54, 79, 187, 188, 275, 399
COMMAND\Xarrangement@footparagraph	193
COMMAND\Xarrangement@normal	188
COMMAND\Xarrangement@paragraph	193
COMMAND\Xbeforeinserting	52
COMMAND\Xbeforelemmaseparator	50, 399
COMMAND\Xbeforenotes	55, 245, 399, 461, 464
COMMAND\Xbeforenumber	48, 399
COMMAND\Xbeforesymlinenum	48, 399
COMMAND\Xbhookendnote	400
COMMAND\Xbhookgroup	54, 468, 469
COMMAND\Xbhooknote	52, 400, 401, 466, 467
COMMAND\Xboxendlinum	49, 400, 465
COMMAND\Xboxlinenum	48, 49, 400
COMMAND\Xboxlinenumalign	49, 400, 465
COMMAND\Xboxstartlinenum	49, 400, 465
COMMAND\Xboxsymlinenum	49, 400
COMMAND\Xcolalign	53, 464
COMMAND\Xdo@feet	466, 471
COMMAND\Xemdnoidenticallinenumannotation	66
COMMAND\Xend	271
COMMAND\XendXafterlemmaseparator	400
COMMAND\XendXbeforelemmaseparator	400
COMMAND\XendXinplaceoflemmaseparator	400
COMMAND\XendXlemmaseparator	400
COMMAND\XendXmorethantwolines	400
COMMAND\XendXtwolines	400
COMMAND\Xendafterenumber	48, 467
COMMAND\Xendafterlemmaseparator	50, 400
COMMAND\Xendafternote	56, 469
COMMAND\Xendafternumber	49
COMMAND\Xendafterpagenumbe	470
COMMAND\Xendafterpagenumber	46, 66
COMMAND\XendafterpagenumberSErefonlypage	402
COMMAND\Xendaftersymlinenum	48, 49, 467
COMMAND\Xendahookinplaceofnumber	49, 467
COMMAND\Xendahooklinenumber	49, 467
COMMAND\Xendbeforelemmaseparator	50, 400
COMMAND\Xendbeforelinenumber	49
COMMAND\Xendbeforenumber	48, 467
COMMAND\Xendbeforepagenumber	46, 65, 66
COMMAND\XendbeforepagenumberSErefonlypage	65
COMMAND\Xendbeforesymlinenum	48, 49, 467

COMMAND\Xendbhookinplaceofnumber	49, 467
COMMAND\Xendbhooklinenumber	49, 467
COMMAND\Xendbhooknote	52
COMMAND\Xendboxendlinenum	49, 465
COMMAND\Xendboxlinenum	49, 400, 463
COMMAND\Xendboxlinenumalign	49, 400, 465
COMMAND\Xendboxstartlinenum	49, 465
COMMAND\Xendboxsymlinenum	49, 467
COMMAND\Xendhangindent	52, 467, 469
COMMAND\Xendinplaceoflemmaseparator	30, 50, 400
COMMAND\Xendinplaceofnumber	48, 466
COMMAND\Xendinplaceofpagenumber	45, 471
COMMAND\Xendinsertsep@	252
COMMAND\Xendlemmadisablefontselection	51
COMMAND\Xendlemmafont	51, 468
COMMAND\Xendlemmaseparator	31, 50, 400
COMMAND\Xendletboxendlinenum	400
COMMAND\Xendlineflag	66
COMMAND\Xendlinenumannotationonlyfirst	45, 256, 475
COMMAND\Xendlinenumannotationonlyfirstintwo	45, 256, 475
COMMAND\Xendlinenumannotationposition	26, 66
COMMAND\Xendlineprefixmore	46, 66
COMMAND\Xendlineprefixsingle	46, 66
COMMAND\Xendlinerangeseparator	46, 66, 208, 402, 467
COMMAND\Xendmorethantwolines	30, 47, 66, 400, 464, 465
COMMAND\Xendnoidenticallinenumannotation	27, 256, 474
COMMAND\Xendnonumber	47, 466
COMMAND\Xendnote	248, 270, 271, 464
COMMAND\Xendnotefontsize	51, 399
COMMAND\Xendnotenumfont	49, 50, 399
COMMAND\Xendnotes	251
COMMAND\Xendnumberonlyfirstinline	44, 467
COMMAND\Xendnumberonlyfirstintwolines	44, 467
COMMAND\Xendpagenumberonlyfirst	45, 471
COMMAND\Xendpagenumberonlyfirstifsingle	45, 471
COMMAND\Xendpagenumberonlyfirstintwo	45, 471
COMMAND\Xendparagraph	56, 461
COMMAND\Xendsep	56, 475
COMMAND\Xendstorelineinfo	250
COMMAND\Xendsublinesep	47, 66, 208
COMMAND\Xendsymlinenum	44, 467, 475
COMMAND\Xendsymlinenumannotation	45, 475
COMMAND\Xendsympagenum	45, 471
COMMAND\Xendtwolines	30, 46, 47, 66, 400, 464, 465
COMMAND\Xendtwolinesbutnotmore	47, 66, 464, 465
COMMAND\Xendtwolinesonlyinsamepage	47, 66, 464, 465
COMMAND\Xendtxtbeforenotes	54, 473
COMMAND\Xendwrapcontent	52, 470
COMMAND\Xendwraplemma	51, 470
COMMAND\Xendwraplinenumannotation	27, 66

COMMAND\Xfootfmt	401
COMMAND\Xfootgroup	192
COMMAND\Xfootins	191
COMMAND\Xfootnote	63, 69, 139, 395, 458, 462–464, 468, 470
COMMAND\Xfootstarts	192
COMMAND\Xgroupbyline	54, 179, 221, 283, 404, 473–475
COMMAND\Xgroupbylines	471
COMMAND\Xgroupbylineseparetwolines	54
COMMAND\Xhangindent	52, 467, 475
COMMAND\Xhsize	402, 468, 469
COMMAND\Xsizethreecol	53, 56, 400
COMMAND\Xsizetwocol	53, 56, 277, 400
COMMAND\Xinplaceoflemmaseparator	30, 50, 400
COMMAND\Xinplaceofnumber	30, 48, 400, 463, 465
COMMAND\Xinsertparafootsep	198, 199
COMMAND\Xledsetnormalparstuff	397, 398, 464
COMMAND\Xlemmadisablefontselection	51
COMMAND\Xlemmafont	51, 468
COMMAND\Xlemmaseparator	50, 208, 278, 281, 284, 400
COMMAND\Xlineflag	66, 402, 403, 470
COMMAND\Xlinenumannotationonlyfirst	44, 45, 217, 475
COMMAND\Xlinenumannotationonlyfirsttwo	45, 217, 475
COMMAND\Xlinenumannotationposition	26, 66, 170
COMMAND\Xlinenumannotationposition@side	170
COMMAND\Xlinenumannotationpositionside	26
COMMAND\Xlinerangeseparator	46, 66, 208, 402, 467
COMMAND\Xmaxhnotes	55, 78, 79, 399, 400, 461, 463
COMMAND\Xmorethantwolines	30, 46, 47, 66, 400, 463
COMMAND\Xnoidenticallinenumannotation	27, 66, 217, 474
COMMAND\Xnoindent	467
COMMAND\Xnolemmaseparator	50, 284, 400
COMMAND\Xnonbreakableafternumber	48, 400, 459
COMMAND\Xnonumber	47, 400
COMMAND\Xnonumberinfootnote	400
COMMAND\Xnotefontsize	51, 399
COMMAND\Xnotefontsize@⟨s⟩	198, 202, 203
COMMAND\Xnotenumfont	50, 399
COMMAND\Xnoteswidthliketwocolumns	56, 462
COMMAND\Xnumberonlyfirstinline	44, 46, 54, 112, 210, 250, 277, 278, 281, 400, 458, 463, 472
COMMAND\Xnumberonlyfirstintwolines	44, 54, 400, 458, 472
COMMAND\Xonlypstart	47, 400, 458, 463
COMMAND\Xpagelinesep	48, 471
COMMAND\Xparafootsep	53, 54, 112, 399, 400, 404, 470, 472, 473
COMMAND\Xparafootsep@series	198
COMMAND\Xparindent	52, 402, 404, 464, 467, 469, 475
COMMAND\Xprenotes	55, 245, 470
COMMAND\Xprenotes@	191, 245, 458
COMMAND\Xprintlines	111
COMMAND\Xpstart	47, 397, 400, 458, 463
COMMAND\Xstarteverytime	47, 397, 400, 463

COMMAND\Xragged	54
COMMAND\Xrigidbalance	200, 402, 468
COMMAND\Xsethangindent	207
COMMAND\Xstanza	47, 61
COMMAND\Xstanzaseparator	47
COMMAND\Xstorelineinfo	210
COMMAND\Xsublinesep	23, 47, 48, 66, 208, 402
COMMAND\Xsublinesepside	23, 48
COMMAND\Xsymlinenum	44, 54, 399, 400, 465, 472
COMMAND\Xsymlinenumannotation	45, 475
COMMAND\Xtextbeforenotes	182
COMMAND\Xtoendnotes	31, 271
COMMAND\Xtwolines	30, 46, 47, 66, 216, 218, 277, 400, 463
COMMAND\Xtwolinesappref	277
COMMAND\Xtwolinesbutnotmore	46, 47, 66, 400, 464
COMMAND\Xtwolinesbutnotmoreappref	277
COMMAND\Xtwolinesonlyinsamepage	46, 47, 66, 400, 464
COMMAND\Xtxtbeforenotes	54, 400, 470, 471, 473
COMMAND\Xtxtbeforenotesonlyonce	54, 473
COMMAND\Xtxtbeforenumber	46
COMMAND\Xunvxh	195, 401
COMMAND\Xwidth	56, 402, 469
COMMAND\Xwrapcontent	52, 470
COMMAND\Xwraplemma	51, 52, 470
COMMAND\Xwraplinenumannotation	27, 66, 171
COMMAND\Xwraplinenumannotation@ref	171
COMMAND\Xwraplinenumannotation@side	171
COMMAND\Xwraplinenumannotationref	27
COMMAND\Xwraplinenumannotationside	27
COMMAND\&	399
COMMAND\absline@num	109, 167
COMMAND\accent	138
COMMAND\actionlines@list	110, 168
COMMAND\actions@list	110
COMMAND\add@Xgroupbyline	179
COMMAND\add@hooktoggle@specific@to@cs	283
COMMAND\add@inserts	110, 178, 179
COMMAND\add@inserts@next	178, 179
COMMAND\add@msd@	344
COMMAND\add@msdata	344, 345
COMMAND\add@msdata@firstlineofpage	348
COMMAND\add@msddata	344
COMMAND\add@penalties	166, 180
COMMAND\addcontentsline	376
COMMAND\addfootins	395, 398
COMMAND\addfootinsX	395, 398
COMMAND\addtoendnotes	271
COMMAND\advancelabel@refs	295
COMMAND\advanceline	24, 111, 119, 134, 466
COMMAND\affixline@num	172, 175, 177, 316, 456

COMMAND\affixpstart@num	177
COMMAND\afterXrule	399
COMMAND\afterXsymlinenum	399
COMMAND\aftergroup	137, 142
COMMAND\afterlemmaseparator	399
COMMAND\afternote	399
COMMAND\afternoteX	53, 398, 399
COMMAND\afternumberinfootnote	399
COMMAND\afterruleX	55, 461, 464
COMMAND\annot@end@print	217, 256
COMMAND\annot@list	111, 172
COMMAND\annotationref	27, 62
COMMAND\applabel	65, 296, 298, 464, 470
COMMAND\appref	63, 65–67, 302, 306, 468, 469, 475
COMMAND\apprefprefixmore	65, 399
COMMAND\apprefprefixsingle	65, 399
COMMAND\apprefwithpage	65–67, 302, 306, 465, 468
COMMAND\arrangementX	43, 79, 226, 275, 399
COMMAND\arrangementX@normal	232
COMMAND\article	15
COMMAND\at@every@pend	158
COMMAND\autopar	19, 154, 159, 160, 242, 457, 459, 460, 464, 474
COMMAND\ballast	78
COMMAND\ballast@count	166, 180
COMMAND\baselineskip	43, 194, 198
COMMAND\beforeXnotes	399
COMMAND\beforeXsymlinenum	399
COMMAND\beforeeledchapter	11, 76, 377
COMMAND\beforeinsertingX	52
COMMAND\beforelemmaseparator	399
COMMAND\beforenotesX	55, 401, 460, 461, 464
COMMAND\beforenumberinfootnote	399
COMMAND\begin	353
COMMAND\beginnumbering	17–20, 94, 95, 99, 100, 108, 113, 129, 159, 248, 343, 458, 461, 465, 466, 471, 472
COMMAND\beginnumberingR	94
COMMAND\bf	458
COMMAND\bfseries	50, 51, 458
COMMAND\bhookXnote	400
COMMAND\bhookgroupX	54, 468
COMMAND\bhooknoteX	52, 401, 466, 467
COMMAND\body	335
COMMAND\bodyfootmarkA	40
COMMAND\book	15
COMMAND\boxXendlinenum	400
COMMAND\boxXendlinenumalign	400
COMMAND\boxXendstartlinenum	400
COMMAND\boxendlinenum	400
COMMAND\boxlinefootnote	212
COMMAND\boxlinenum	400

COMMAND\boxlinenumalign	400
COMMAND\boxstartlinenum	400
COMMAND\boxsymlinenum	400
COMMAND\break	44, 195
COMMAND\brokenpenalty	180
COMMAND\c@page	130
COMMAND\c@page@page	130
COMMAND\centering	53
COMMAND\ch@ck@l@ck	456
COMMAND\ch@cksub@l@ck	175, 456
COMMAND\chapter	75, 378, 382, 461, 464, 466, 470
COMMAND\chaptermark	376
COMMAND\check@pb@in@verse	390
COMMAND\colalignX	53, 464
COMMAND\collect@body	353
COMMAND\color	470
COMMAND\colorbox	79
COMMAND\columns	56
COMMAND\columnwidth	194, 462
COMMAND\command names	277
COMMAND\continuousnumberingwithcolumns@sync@linenumber@singletext	170
COMMAND\copyright	138
COMMAND\correct@Xfootins@box	463
COMMAND\correct@footinsX@box	463
COMMAND\count	201
COMMAND\critex	457
COMMAND\critext	145, 394, 395, 398
COMMAND\csname	84
COMMAND\csquotes	267
COMMAND\ctab	369, 374
COMMAND\ctabtext	374
COMMAND\current@annot	171
COMMAND\dcoll	363
COMMAND\def	81, 98
COMMAND\dimen	201
COMMAND\dimexpr	56
COMMAND\discretionary	195
COMMAND\displaywidowpenalty	180
COMMAND\do@Xfeet	285, 456, 466, 471
COMMAND\do@actions	166–168, 456
COMMAND\do@actions@fixedcode	456
COMMAND\do@actions@next	167, 168
COMMAND\do@ballast	166, 167, 180
COMMAND\do@feet@custom@order	285
COMMAND\do@insidelinehook	459
COMMAND\do@line	110, 137, 157, 160, 164, 166, 178, 180, 335, 456, 457, 459, 461
COMMAND\do@linehook	456
COMMAND\do@lockoff	111
COMMAND\do@lockon	111
COMMAND\dodoreinextrafeet	455

COMMAND\doendnotes	31, 252, 401, 465, 472
COMMAND\doendnotesbysection	31, 252, 271, 465, 472
COMMAND\doennotes	472
COMMAND\doinsidelinehook	28, 461
COMMAND\doinsidethislinehook	28, 164, 474
COMMAND\dolinehook	28, 461
COMMAND\doreintrafeeti	466
COMMAND\doreintrafeetii	466
COMMAND\doxtrafeet	455
COMMAND\doxtrafeeti	466
COMMAND\doxtrafeetii	466
COMMAND\dummy@ref	138
COMMAND\edaftertab	74, 369, 370
COMMAND\edannotationref	300
COMMAND\edatleft	74, 367
COMMAND\edatright	74, 367
COMMAND\edbeforetab	74, 369
COMMAND\edfilldimen	368
COMMAND\edfont@info	145
COMMAND\edgls	71, 323
COMMAND\edgls...	469
COMMAND\edglsadd	472
COMMAND\edindex	38, 69–71, 323, 324, 327, 329, 330, 358, 459, 461, 463, 466, 467, 471–473, 475
COMMAND\edindexlab	71
COMMAND\edlabel	62–65, 67, 138, 292, 293, 295, 296, 299, 300, 308, 323, 358, 390, 403, 455, 458–460, 463, 468, 473
COMMAND\edlabelE	64, 298
COMMAND\edlabelS	64, 298
COMMAND\edlabelSE	64
COMMAND\edlineref	62, 292, 400, 463, 465, 468, 472
COMMAND\edmakelabel	64, 308
COMMAND\edpageref	62, 292, 299, 308
COMMAND\edrowfill	369
COMMAND\edsublineref	62
COMMAND\edtabcolsep	362
COMMAND\edtext	7, 25, 29, 32, 34–37, 57, 62, 63, 65, 69, 72, 79, 98, 109–111, 126, 127, 131–133, 136–145, 148, 150, 152, 170– 172, 296–298, 301, 334, 357, 359, 378, 390, 394, 395, 398, 455, 457, 459, 461–465, 471–475
COMMAND\edtext@level	465
COMMAND\edtextlater	128
COMMAND\edvertdots	75, 368
COMMAND\edvertline	74, 75, 367
COMMAND\elechapter	76
COMMAND\eled@sectioning@out	383
COMMAND\eledchapter	75, 398, 461, 466
COMMAND\eledchapter*	75
COMMAND\eledmac@error	455
COMMAND\eledsection	7, 17, 75, 138, 163, 377, 398, 463, 472, 474, 475
COMMAND\eledsection*	75
COMMAND\eledsubsection	75, 398

COMMAND\eledsubsection*	75
COMMAND\eledsubsubsection	75, 398
COMMAND\eledsubsubsection*	75
COMMAND\eledxxx	11, 76, 383, 461
COMMAND\eledxxxx	376
COMMAND\elesection	383
COMMAND\else	322, 377
COMMAND\emph	38
COMMAND\empty	93, 173, 174, 293
COMMAND\end	352, 353
COMMAND\end@lemmas	137
COMMAND\endashchar	208
COMMAND\endgraf	157, 197, 242
COMMAND\endlock	23, 111, 135, 339
COMMAND\endminipage	317, 320, 455, 466
COMMAND\endmsdata	39
COMMAND\endnotes	464, 468
COMMAND\endnumbering	17–20, 95, 97, 98, 129, 456, 465, 471, 472
COMMAND\endnumberingR	94
COMMAND\endprint	248, 251, 271, 397
COMMAND\endstanzaextra	399
COMMAND\endsub	23, 111, 134
COMMAND\endverse	401
COMMAND\everypar	159
COMMAND\extensionchars	77, 95
COMMAND\externaldocument	67, 309
COMMAND\f@x@l@cks	456
COMMAND>falseverse	398, 459, 461
COMMAND\fi	377
COMMAND\firstlinenum	21, 22, 172, 457
COMMAND\firstsublinenum	22, 457
COMMAND\flag@end	132, 133, 144, 461
COMMAND\flag@end@RTL	133
COMMAND\flag@end@later	133
COMMAND\flag@start	132, 133, 144, 461, 462
COMMAND\flag@start@RTL	133
COMMAND\flag@start@later	133
COMMAND\flagstanza	61
COMMAND\floatingpenalty	186, 463
COMMAND\flush@notes	181
COMMAND\fnpos	42, 244, 460, 471
COMMAND\footfmt	186, 188
COMMAND\footfmt...	227
COMMAND\footfootmarkA	40
COMMAND\footfudgefactor	196
COMMAND\footfudgefiddle	79, 193, 194, 455
COMMAND\footgroup	186
COMMAND\footins	191
COMMAND\footnormal	276, 399, 455
COMMAND\footnormalX	399

COMMAND\footnote	40, 78, 222–224, 396, 456
COMMAND\footnote@lang	208
COMMAND\footnoteA	17, 40
COMMAND\footnoteB	17
COMMAND\footnoteC	29
COMMAND\footnoteE	40
COMMAND\footnoteX	9, 41, 267, 269, 471
COMMAND\footnoteX@reading	269
COMMAND\footnoteXmark	269, 472, 475
COMMAND\footnoteXmk	284
COMMAND\footnoteXtext	269, 472, 475
COMMAND\footnote⟨X⟩	139
COMMAND\footnote⟨X⟩mark	41
COMMAND\footnote⟨X⟩mk	41
COMMAND\footnote⟨X⟩nomk	41
COMMAND\footnote⟨X⟩text	41
COMMAND\footnotelang@lua	185
COMMAND\footnotelang@poly	185
COMMAND\footnotemark	41, 269
COMMAND\footnoteoption@	184, 467
COMMAND\footnoterule	201
COMMAND\footnotesize	51
COMMAND\footnotetext	41, 269
COMMAND\footparagraph	194, 276, 399, 461
COMMAND\footparagraphX	237, 399, 461
COMMAND\footplitskips	456, 463
COMMAND\footstart	186, 191, 201
COMMAND\footstrut	197
COMMAND\footthreecol	399
COMMAND\footthreecolX	399, 464
COMMAND\foottwocol	399
COMMAND\foottwocolX	399, 464
COMMAND\foreignlanguage	52
COMMAND\fullstop	402
COMMAND\get@edindex@hyperref	328
COMMAND\get@edindex@ledinnote@command	324
COMMAND\get@fnmark	224
COMMAND\get@index@command	460
COMMAND\get@linelistfile	456
COMMAND\get@thisfootnote	230
COMMAND\getline@num	166, 168
COMMAND\gl@p	101
COMMAND\global	115
COMMAND\globaldefs	115
COMMAND\gls	71, 331
COMMAND\hangindentX	52, 464, 467, 475
COMMAND\hangingsymbol	399, 457
COMMAND\hbox	195
COMMAND\hfill	459
COMMAND\hidenumbering	24, 124, 403, 464, 474

COMMAND\hidenumberingonleftpage	24, 124, 470
COMMAND\hidenumberingonrightpage	24, 124, 470
COMMAND\hline	72
COMMAND\hooktoggle@specific	283
COMMAND\hrulefill	369
COMMAND\hsize	44, 191, 194, 196, 202, 205, 243, 456, 462
COMMAND\hsizeX	402, 468, 469
COMMAND\hsizethreecol	400
COMMAND\hsizethreecolX	53, 56
COMMAND\hsizetwocol	400
COMMAND\hsizetwocolX	53, 56
COMMAND\hyperlinkR	328
COMMAND\hyperlinkformat	328
COMMAND\hyperlinkformatR	328
COMMAND\if@RTL	86, 141
COMMAND\if@edtext@	462, 465
COMMAND\if@eled@sectioning	383
COMMAND\if@firstlineofpage	86
COMMAND\if@firstlineofpageR	86
COMMAND\if@msd@options@fullpage	351
COMMAND\if@msdata@insertedfrompreviouspage	348
COMMAND\if@nobreak	158
COMMAND\if@noneed@Footnote	131
COMMAND\ifXnote@	94
COMMAND\ifafterendnumberingR	94
COMMAND\ifautopar	159
COMMAND\ifby@autopar	159
COMMAND\ifbypage@	101
COMMAND\ifbypage@R	102
COMMAND\ifbypstart@	101
COMMAND\ifbypstart@R	102
COMMAND\iffirst@linenum@out@	129
COMMAND\ifindtl@innote	95
COMMAND\ifindtl@notenumber	95
COMMAND\ifinserthangingsymbol	335
COMMAND\ifinstanza	334
COMMAND\ifistwofollowinglines	218
COMMAND\ifl@d@Xmorethantwolines	213, 463
COMMAND\ifl@d@Xtwolines	213
COMMAND\ifl@d@dash	213
COMMAND\ifl@d@elin	213
COMMAND\ifl@d@esl	213
COMMAND\ifl@d@pnum	213
COMMAND\ifl@d@ssub	213
COMMAND\ifl@dend@X	270
COMMAND\ifl@dmemoir	455
COMMAND\ifl@dpaging	462
COMMAND\ifl@dpairing	94, 457
COMMAND\ifl@dprintingpages	463
COMMAND\ifl@dskipnumber	173

COMMAND\ifl@dstartendok	368
COMMAND\ifl@imakeidx	85
COMMAND\ifledRcol	94, 457
COMMAND\ifledRcol@	94, 461
COMMAND\iflemmacommand@	462
COMMAND\ifnoend@	253
COMMAND\ifnoledgroup@	322
COMMAND\ifnoteschanged@	112
COMMAND\ifnumberedpar@	154
COMMAND\ifnumbering	95, 98
COMMAND\ifnumberingR	94, 457
COMMAND\ifnumberline	144, 173
COMMAND\ifpst@rted	457
COMMAND\ifpst@rtedL	96
COMMAND\ifresumenummering@start	99
COMMAND\ifseriesbefore	274
COMMAND\ifstopmsdata@inserted@	343
COMMAND\ifsublines@	108, 122
COMMAND\iftrue	465
COMMAND\ifvmode	295
COMMAND\ifxxx	377
COMMAND\ignorespaces	141
COMMAND\imki@wrindexentry	85
COMMAND\immediate	129, 247
COMMAND\indent	19, 159, 401
COMMAND\index	330, 331, 471
COMMAND\indtl@wrindexentry	85
COMMAND\initnumbering@quote	375, 466
COMMAND\initnumbering@reg	456
COMMAND\initnumbering@sectcmd	466
COMMAND\inplaceoflemmaseparator	400
COMMAND\inplaceofnumber	400
COMMAND\insert	143, 178, 186, 188, 189, 203, 221, 227
COMMAND\insert@Xtxtbeforenotes	182, 203
COMMAND\insert@count	126, 132, 141
COMMAND\insert@countR	141
COMMAND\insert@msdata	344, 351
COMMAND\insert@txtbeforenotesX	182
COMMAND\inserthangingsymbol	459
COMMAND\insertlines@list	110, 126
COMMAND\insertparafootsepX	241
COMMAND\inserts@list	137, 154, 178, 195
COMMAND\interAfootnotelinepenalty	457
COMMAND\interfootnotelinepenalty	457
COMMAND\interlinepenalty	186
COMMAND\interparanoteglue	398
COMMAND\justifying	53
COMMAND\keep@this@crossref@forinserting	222
COMMAND\l@advance@parledgroup@beforenormalnotes	466
COMMAND\l@d@@wrindexhyp	462

COMMAND\l@d@add	146
COMMAND\l@d@end	248, 270
COMMAND\l@d@nums	141, 144–146, 213, 214
COMMAND\l@d@section	248
COMMAND\l@d@set	120, 135
COMMAND\l@dampcount	359
COMMAND\l@dbfnote	224, 456
COMMAND\l@dcheckstartend	368
COMMAND\l@dchset@num	120
COMMAND\l@dcolcount	359, 360
COMMAND\l@dcollect@@body	353
COMMAND\l@dcollect@body	352
COMMAND\l@dcsnote	461
COMMAND\l@dcsnotetext	165, 313, 314
COMMAND\l@dcsnotetext@l	165, 313, 314
COMMAND\l@dcsnotetext@r	165, 313
COMMAND\l@ddodorextrafeet	286, 455
COMMAND\l@ddoxtrafeet	285, 286, 455
COMMAND\l@emptyd@ta	456
COMMAND\l@dend@close	247
COMMAND\l@dend@open	247
COMMAND\l@dend@stuff	248
COMMAND\l@denvbody	353
COMMAND\l@dfeetbeginmini	455
COMMAND\l@dfeetendmini	455
COMMAND\l@dgetline@margin	457
COMMAND\l@dgetlock@disp	457
COMMAND\l@dgetref@num	301
COMMAND\l@dgetsidenote@margin	310, 457
COMMAND\l@dgobbeloptarg	462
COMMAND\l@dgonblearg	462
COMMAND\l@dgonbleoptarg	358
COMMAND\l@dlabel@parse	301
COMMAND\l@dld@ta	172, 174
COMMAND\l@dlp@rbox	315
COMMAND\l@dlsn@te	457
COMMAND\l@dlsnote	461
COMMAND\l@dmake@labels	295, 309
COMMAND\l@dmake@labelsR	309
COMMAND\l@dnumpsstartsL	96, 457
COMMAND\l@dp@rsefootspec	214
COMMAND\l@dp@rsefootspec	214
COMMAND\l@dpush@begins	353
COMMAND\l@d@rd@ta	172, 174
COMMAND\l@dref@undefined	300
COMMAND\l@d@rsn@te	457
COMMAND\l@d@rsnote	461
COMMAND\l@dtabaddcols	368
COMMAND\l@dtabnoexpands	455
COMMAND\l@dumboxmpfoot	466

COMMAND\l@dunboxmpfoot	456
COMMAND\l@dunhbox@line	160
COMMAND\l@dzeropenalties	457, 462
COMMAND\l@noexpands@edgl	334
COMMAND\l@pb	389
COMMAND\l@prev@nopb	388
COMMAND\l@prev@pb	388
COMMAND\l@reg	396
COMMAND\l@secondoptarg	358
COMMAND\l@wrap@ifnotemptybox	93
COMMAND\label	20, 64, 67, 71, 293, 301
COMMAND\label@refs	293
COMMAND\labelstarttrue	20, 403, 458, 473
COMMAND\labelref@list	292, 293, 296
COMMAND\language	195
COMMAND\lastbox	159
COMMAND\lastskip	134
COMMAND\latex@makecol	288
COMMAND\leavevmode	19, 159
COMMAND\led@check@nopb	389
COMMAND\led@check@pb	389
COMMAND\led@nopb	388–390
COMMAND\led@nopbnum	388, 389
COMMAND\led@pb	388–390
COMMAND\led@pb@macro	389
COMMAND\led@pbnum	388, 389
COMMAND\led@reinit@index@fornote	331
COMMAND\led@set@index@fornote	330
COMMAND\ledRflag	328
COMMAND\ledchapter	398, 458
COMMAND\ledfootinsdim	399
COMMAND\ledinnernote	67, 311, 461, 470
COMMAND\ledinnote	325, 397, 465
COMMAND\ledinnotemark	69, 397, 464
COMMAND\ledleftnote	68, 311
COMMAND\ledlinenum	107, 457
COMMAND\ledllfill	166
COMMAND\ledlsnotefontsetup	470
COMMAND\ledlsnotesep	68
COMMAND\ledlsnotewidth	68
COMMAND\lednopb	76, 77, 388
COMMAND\lednopbinverse	390
COMMAND\lednopbinversetrue	59, 77
COMMAND\lednopbnum	388
COMMAND\ledouternote	67, 311, 461, 470
COMMAND\ledpb	76, 77, 388, 398
COMMAND\ledpbnum	388
COMMAND\ledpbsetting	77, 389, 467
COMMAND\ledrightnote	68, 311
COMMAND\ledrsnotefontsetup	470

COMMAND\ledrsnotesep	68
COMMAND\ledrsnotewidth	68
COMMAND\ledsection	398
COMMAND\ledsectnomark	376
COMMAND\ledsectnotoc	376
COMMAND\ledsetnormalparstuff	397, 398, 464
COMMAND\ledsetnormalparstuff@common	242
COMMAND\ledsetnormalparstuffX	397, 398, 464
COMMAND\ledsidenote	67, 68, 311, 313, 314
COMMAND\ledsubsection	398
COMMAND\ledsubsubsection	398
COMMAND\ledxxx	461
COMMAND\left	74
COMMAND\leftctab	369
COMMAND\leftheadline	107
COMMAND\leftlinenum	23, 107, 455, 457
COMMAND\leftltab	369
COMMAND\leftnoteupfalse	68
COMMAND\leftpstartnum	177
COMMAND\leftrtab	369
COMMAND\leftsidenote	314
COMMAND\leftskip	191, 194, 196
COMMAND\lemma	3, 29, 32, 34–37, 136, 140–142, 145, 148, 394, 457, 458, 465, 466, 468
COMMAND\lemmaseparator	400
COMMAND\let	33, 57, 139, 143, 269, 288, 339, 455
COMMAND\letboxXendendlinenum	400
COMMAND\line	200, 203
COMMAND\line@list	109, 111, 127, 144
COMMAND\line@list@stuff	95, 113, 129, 455, 457
COMMAND\line@list@version	115
COMMAND\line@margin	103, 174, 310
COMMAND\line@num	108–110, 172, 455
COMMAND\line@set	146
COMMAND\lineannot	26, 63, 146
COMMAND\lineannot@set	146
COMMAND\lineation	22, 102, 473–475
COMMAND\linebreak	44
COMMAND\lineneation	469
COMMAND\linenum	26, 29, 32, 63, 65, 136, 145, 146, 299, 301, 308, 394
COMMAND\linenum@out	128, 129, 293, 296
COMMAND\linenumannotation	25, 170, 473, 474
COMMAND\linenumlist	22, 93, 173, 174, 455
COMMAND\linenumstyle	24, 106, 455, 472
COMMAND\linenumincrement	22, 457
COMMAND\linenummargin	22, 103, 310
COMMAND\linenumr@p	106, 455, 457
COMMAND\linenumrep	106, 457
COMMAND\linenumsep	23, 68, 107, 311
COMMAND\linerangesep@	284
COMMAND\lineref	292, 299, 308, 400, 463

COMMAND\list@clear	101
COMMAND\list@clearing@reg	457
COMMAND\list@create	100, 101
COMMAND\lock@disp	105
COMMAND\lock@off	123
COMMAND\lock@on	122
COMMAND\lockdisp	23, 105
COMMAND\loop	181, 182, 335
COMMAND\ltab	369, 370, 374
COMMAND\ltabtext	374
COMMAND\m@mmf@prepare	223
COMMAND\mainmatter	473, 474
COMMAND\makeatletter	164
COMMAND\makehboxofhboxes	196, 198
COMMAND\makeindex	69, 327
COMMAND\makelabel	308
COMMAND\managestanza@modulo	336
COMMAND\marginpar	67, 78, 309, 310, 456
COMMAND\marginparwidth	68, 311
COMMAND\markboth	28, 164
COMMAND\mathchardef	336
COMMAND\maxXnotes	400
COMMAND\maxhnotesX	55, 79, 399, 460, 461, 463, 464
COMMAND\maxlinesinpar@list	113
COMMAND\measurembody	371
COMMAND\measurctbody	371
COMMAND\memorybreak	21
COMMAND\metaXXXvfootnote	221
COMMAND\microtype	160
COMMAND\morenoexpands	79, 80, 137, 138
COMMAND\morethantwolines	400
COMMAND\mpfnpos	42, 244, 460, 471
COMMAND\mpnormalfootgroup	455
COMMAND\mpnormalvfootnote	456
COMMAND\msdata	39, 342–344, 472, 474
COMMAND\msdataposition	40
COMMAND\multfootsep	41, 223
COMMAND\multiplefootnotemarker	223
COMMAND\musixtex	460
COMMAND\n@num	457, 464
COMMAND\n@num@ref	464
COMMAND\new@line	130, 456
COMMAND\new@series	139
COMMAND\newcommand	33, 81, 98, 222, 295
COMMAND\newcommandx	33
COMMAND\newhookarg@specific	283
COMMAND\newhookcommand@series	277, 278, 464
COMMAND\newhookcommand@series@reload	278
COMMAND\newhookcommand@toggle@reload	277, 462
COMMAND\newhooktoggle@series	277, 464

COMMAND\newhooktoggle@specific	282
COMMAND\newif	464
COMMAND\newline	44
COMMAND\newlinechar	270
COMMAND\newseries	41, 395, 398, 399
COMMAND\newseries@	261, 275
COMMAND\newverse	60, 61, 398, 461, 472
COMMAND\next	335
COMMAND\next@action	114
COMMAND\next@actionline	114
COMMAND\next@insert	178
COMMAND\next@line@list@stuff	129, 473
COMMAND\nl@regR	116
COMMAND\no@expands	79, 139, 145, 269, 334, 455
COMMAND\noXlemmaseparator	400
COMMAND\nobreak	213
COMMAND\nocritical	262
COMMAND\noeledsec	398
COMMAND\noendnotes	398
COMMAND\noexpand	396
COMMAND\nofamiliar	280
COMMAND\noindent	19, 20, 60, 159, 467
COMMAND\noindentX	467
COMMAND\nomk@	284
COMMAND\nonbreakableafternumber	400
COMMAND\nonnumberinfootnote	400
COMMAND\norelax	57
COMMAND\normal@footnotemarkX	226
COMMAND\normal@page@break	388
COMMAND\normal@pars	242
COMMAND\normalbfnoteX	457
COMMAND\normalbodyfootmarkX	227
COMMAND\normalfont	471
COMMAND\normalfootfmt	57, 190, 197, 208, 248, 470
COMMAND\normalfootfmtX	228
COMMAND\normalfootfootmarkX	228
COMMAND\normalfootgroup	192
COMMAND\normalfootgroupX	229
COMMAND\normalfootnoterule	187
COMMAND\normalfootstart	191, 194
COMMAND\normalfootstartX	228
COMMAND\normalvfootnote	188, 190
COMMAND\normalvfootnote@inserted	189, 190
COMMAND\normalvfootnoteX	227
COMMAND\notbool	377
COMMAND\notfontsetup	399
COMMAND\notfontsizeX	51, 399
COMMAND\notenumfont	399
COMMAND\notenumfontX	51, 399
COMMAND\notesXwidthliketwocolumns	400

COMMAND\noteswidthliketwocolumnsX	56, 400, 462, 464
COMMAND\num@lines	154, 180
COMMAND\numberlinefalse	21, 474
COMMAND\numberlinetrue	21, 474
COMMAND\numberonlyfirstinline	275, 400
COMMAND\numberonlyfirstintwolines	400
COMMAND\numberpstartfalse	20
COMMAND\numberpstarttrue	20, 47, 397, 457, 466, 472, 474
COMMAND\numberstanza	47
COMMAND\numberstanzafalse	61
COMMAND\numberstanzatrue	61
COMMAND\numlabfont	23, 57, 107
COMMAND\one@line	154
COMMAND\onehalfspacing	467
COMMAND\onlyXpstart	400
COMMAND\onlysideX	268
COMMAND\page@action	110, 121
COMMAND\page@start	110, 457
COMMAND\pagecontents	110
COMMAND\pagenumbering	291
COMMAND\pageparbreak	398
COMMAND\pageref	64, 299
COMMAND\par	32, 44, 159, 242
COMMAND\par@line	154, 180
COMMAND\par@patch@pagenumbering	291
COMMAND\par@patch@thepage	130, 291
COMMAND\para@footgroup	194
COMMAND\para@footgroupX	240
COMMAND\para@footsetup	194, 455
COMMAND\para@footsetupX	237, 455, 462
COMMAND\para@vfootnoteX	238
COMMAND\parafootfmt	196, 197, 470
COMMAND\parafootfmtX	239
COMMAND\parafootftm	199
COMMAND\parafootftmX	241
COMMAND\parafootftmsep	399
COMMAND\parafootsep	400, 460, 465
COMMAND\parafootsepX	53, 54, 112, 399, 400, 404, 470, 475
COMMAND\parafootstart	194
COMMAND\parafootstartX	238
COMMAND\paravfootnote	195, 198
COMMAND\parfillskip	197
COMMAND\parindent	467
COMMAND\parindentX	52, 402, 467, 469, 475
COMMAND\parse@annot	172
COMMAND\parshape	78
COMMAND\parskip	19, 20, 60, 159
COMMAND\pause@numbering	99
COMMAND\pausenumbering	20, 21, 98, 99, 113, 115, 160, 460, 462, 469
COMMAND\pausenumbering@page@num	99

COMMAND\penalty	197
COMMAND\pend	2, 7, 18–22, 24, 75, 76, 135, 137, 140, 147, 154, 156–160, 177, 178, 396, 460, 461, 470–473
COMMAND\preXnotes	464, 470
COMMAND\prenotesX	55, 246, 464
COMMAND\prepare@Xgroupbyline	221, 222
COMMAND\prepare@Xprenotes	245
COMMAND\prev@nopb	389
COMMAND\prev@pb	389
COMMAND\prevlineX	112
COMMAND\prevpageX@num	112
COMMAND\print@Xfootnoterule	464
COMMAND\print@Xnotes	286, 287
COMMAND\print@Xnotes@forpages	463
COMMAND\print@eledsection	163
COMMAND\print@footnoteXrule	464
COMMAND\print@leftmargin@eledsection	377
COMMAND\print@lemma	209
COMMAND\print@line	161
COMMAND\print@notesX@forpages	463
COMMAND\print@rightmargin@eledsection	377
COMMAND\printendlines	253, 260, 306, 402, 455, 457
COMMAND\printlinefootnote	210, 211, 463
COMMAND\printlinefootnotearea	212, 213, 463
COMMAND\printlinefootnotenumbers	210
COMMAND\printlines	190, 208, 213, 214, 253, 306, 402, 455, 457, 463, 468
COMMAND\printnpnum	397, 402
COMMAND\printpstart	209
COMMAND\protect	138, 396
COMMAND\providecommand	222, 455
COMMAND\pstarL	154
COMMAND\pstart	2, 7, 18–22, 24, 75, 76, 120, 135, 140, 143, 147, 154, 157–159, 163, 178, 382, 396, 397, 457–459, 461, 462, 464–466, 469–475
COMMAND\pstartinfootnote	400
COMMAND\pstartinfootnoteeverytime	400
COMMAND\pstartnum	177
COMMAND\pstartref	62, 292, 300, 460, 472
COMMAND\pstarts	457, 458
COMMAND\pstarts@readL	154
COMMAND\pstarts@typeset@L	154
COMMAND\raggedX	54
COMMAND\raggedleft	53
COMMAND\raggedright	53
COMMAND\raw@text	154
COMMAND\rbracket	50
COMMAND\read@linelist	113–115
COMMAND\ref	64, 67, 71
COMMAND\refformated@	306
COMMAND\refformatedwithpage	306
COMMAND\relax	19, 120, 143, 167, 178, 339, 358, 396

COMMAND\renewcommand	79, 399, 402
COMMAND\reset@current@annot	172
COMMAND\reset@msd@options@iffullpage	351
COMMAND\resetprevline@	112
COMMAND\resetprevpage@	112
COMMAND\resumenumbering	20, 94, 95, 99, 100, 113, 115, 160, 457, 461, 462, 469
COMMAND\right	74
COMMAND\rightctab	369
COMMAND\rightlinenum	23, 107, 455, 457
COMMAND\rightltab	370
COMMAND\rightnoteupfalse	68
COMMAND\rightrtab	370
COMMAND\rightrightnote	313
COMMAND\rightrightskip	191, 194, 196, 197
COMMAND\rightrightstartnum	177
COMMAND\rigidbalance	200, 201, 203, 402, 468
COMMAND\rigidbalanceX	200, 402, 468
COMMAND\robustify	44, 45
COMMAND\roman	363, 468
COMMAND\rtab	369, 370, 374
COMMAND\rtabtext	371, 374
COMMAND\sameparallelpagenum	130
COMMAND\sameword	16, 33–37, 128, 147–150, 152, 404, 463, 465, 467, 470, 473, 475
COMMAND\sameword@inedtext	148
COMMAND\saweword	148
COMMAND\scriptsize	107
COMMAND\section	75, 457, 471
COMMAND\section@num	95
COMMAND\sectionmark	376
COMMAND\select@lemmafont	57, 184
COMMAND\series	261
COMMAND\series@	261
COMMAND\seriesatbegin	42, 274, 464
COMMAND\seriesatend	42, 274, 464
COMMAND\set@Xtxtbeforenotes	182
COMMAND\set@continuousnumberingforl	100
COMMAND\set@line	144
COMMAND\set@line@action	111, 121
COMMAND\set@txtbeforenotesX	182
COMMAND\setSErefonlypageprefixmore	65, 305, 469, 472
COMMAND\setSErefonlypageprefixsingle	65, 305, 469, 472
COMMAND\setSErefprefixmore	65
COMMAND\setSErefprefixsingle	65
COMMAND\setapprefprefixmore	65, 399
COMMAND\setapprefprefixsingle	65, 67, 399, 468
COMMAND\setcommand@series	276
COMMAND\sethangindentX	207
COMMAND\sethangingsymbol	59, 334, 399, 467
COMMAND\sethanginsymbol	58
COMMAND\setistwofollowinglines	218

COMMAND\setl@dlprbox	315
COMMAND\setline	24, 111, 116, 120, 135, 138, 466
COMMAND\setlinenum	24, 116, 120, 135, 158, 455, 473
COMMAND\setlinenumannotationsep	27, 403, 474
COMMAND\setmsdatalabel	40
COMMAND\setmsdataposition	472
COMMAND\setmsdataseries	40
COMMAND\setprintendlines	253, 257, 457
COMMAND\setprintlines	214, 218, 253, 457
COMMAND\setsidenotesep	68
COMMAND\setsidenotsep	399
COMMAND\setstanzaindent	337
COMMAND\setstanzaindents	58, 336, 396
COMMAND\setstanzapenalties	336
COMMAND\setstanzavalues	336
COMMAND\settoggle@series	275, 458, 462
COMMAND\showlemma	138, 455, 456
COMMAND\showwordrank	37, 149
COMMAND\sidenote@margin	456
COMMAND\sidenotemargin	67, 456, 461
COMMAND\sidenotesep	399
COMMAND\sidepstartnumtrue	20
COMMAND\skip	191
COMMAND\skipnumbering	24, 124, 136, 457, 464, 465
COMMAND\skipnumbering@reg	464
COMMAND\small	51
COMMAND\somemacro	38
COMMAND\special	14
COMMAND\splitmaxdepth	186, 202
COMMAND\splitoff	200
COMMAND\splittopskip	186, 202, 203
COMMAND\stanza	23, 24, 60, 61, 339, 399, 401, 467, 472
COMMAND\stanza@hang	339
COMMAND\stanza@line	339
COMMAND\stanzaindent	58, 59, 337, 463
COMMAND\stanzaindent*	59
COMMAND\stanzaindentbase	335, 336
COMMAND\stanzanumwrapper	61
COMMAND\startlock	21, 23, 111, 135, 339
COMMAND\startstanzahook	399
COMMAND\startsub	23, 111, 134
COMMAND\stopmsd	345
COMMAND\stopmsdata	39, 343
COMMAND\store@annot@to@absline	171
COMMAND\strip@pt	194
COMMAND\strutbox	202
COMMAND\sub@action	111, 122
COMMAND\sub@lock	109
COMMAND\sub@off	119, 296
COMMAND\sub@on	119, 296

COMMAND\subline@num	108–110
COMMAND\sublinenum@rep	455
COMMAND\sublinenumberstyle	24, 106, 455
COMMAND\sublinenumincrement	22
COMMAND\sublinenumr@p	106, 455, 457
COMMAND\sublinenumrep	106, 457
COMMAND\sublineref	62, 292, 299
COMMAND\subsectionmark	376
COMMAND\sw@inthisedtext	140
COMMAND\sw@list@inedtext	145, 152
COMMAND\sw@txt	149
COMMAND\swnoexpands	37, 473
COMMAND\symlinenum	400
COMMAND\symplinenum	399
COMMAND\sza@penalty	339
COMMAND>tag	463
COMMAND\text	394
COMMAND\text<language>	52
COMMAND\textbeforenotesX	182
COMMAND\textcolor	80
COMMAND\textheight	79
COMMAND\textsuperscript	27, 93, 171
COMMAND\the	130, 455
COMMAND\thefootnoteA	40
COMMAND\thefootnoteX	459
COMMAND\thelabidx	329, 330
COMMAND\thepage	116, 130, 291
COMMAND\thepstart	20, 403
COMMAND\thepstartL	458
COMMAND\thepstartR	458
COMMAND\thestanza	61
COMMAND\this@crossref@end	222
COMMAND\this@line@list@version	129
COMMAND\this@section@next@page@num	99
COMMAND\this@section@page@num	112
COMMAND\thisfootnote	230
COMMAND\threecol@begin@insert	203
COMMAND\threecolfootfmt	202, 203, 470
COMMAND\threecolfootfmtX	236
COMMAND\threecolfootgroup	201
COMMAND\threecolfootgroupX	236
COMMAND\threecolfootsetup	201
COMMAND\threecolfootsetupX	235
COMMAND\threecolvfootnote	202
COMMAND\threecolvfootnote@inserted	202
COMMAND\threecolvfootnoteX	235
COMMAND\toendnotes	31, 251, 470
COMMAND\twocolfootfmt	470
COMMAND\twocolfootfmtX	233
COMMAND\twocolfootgroupX	234

COMMAND\twocolfootsetupX	233
COMMAND\twocolvfootnoteX	233
COMMAND\twolines	275, 400
COMMAND\twolines@A	275
COMMAND\twolines@B	275
COMMAND\twolines@C	275
COMMAND\twolinesbutnotmore	400
COMMAND\twolinesonlyinsamepage	400
COMMAND\txtbeforeXnotes	400
COMMAND\txtbeforenotesX	54, 473
COMMAND\txtbeforenotesonlyonceX	54, 473
COMMAND\uline	41
COMMAND\unhbox	160, 195
COMMAND\unpenalty	196–198
COMMAND\unskip	197
COMMAND\unvxh	197, 401
COMMAND\unvxhX	401
COMMAND\upbracefill	369
COMMAND\usingcritext	395, 398
COMMAND\usingdtext	395, 398
COMMAND\vAfootnote	186
COMMAND\vadjust	132
COMMAND\variant	33
COMMAND\vbox	157, 159, 195, 200, 244
COMMAND\vfootnote	186, 191, 195, 202
COMMAND\vl@dbfnote	224, 456
COMMAND\vl@disnote	314
COMMAND\vl@dlsnote	314
COMMAND\vl@dosnote	314
COMMAND\vl@drsnote	314
COMMAND\vnnumfootnoteX	457
COMMAND\vsizer	55, 79
COMMAND\vsplit	180
COMMAND\waklam	369
COMMAND\waklamec	369
COMMAND\wapunktcl	369
COMMAND\wastricht	369
COMMAND\widthX	56, 402, 469
COMMAND\wrap@edcrossref	298, 462
COMMAND\wrapcontentX	52, 470
COMMAND\wrapped@bodyfootmarkX	241
COMMAND\wrapped@footfootmarkX	241
COMMAND\x...	63
COMMAND\xabslineref	299
COMMAND\xannotationref	63
COMMAND\xdef	101, 339
COMMAND\xflagref	63, 300, 402, 468
COMMAND\xleft@appenditem	101, 137
COMMAND\xlineref	63, 402, 468
COMMAND\xpageref	63

COMMAND\xpars	38
COMMAND\xpstartref	63, 460, 473
COMMAND\xr	67
COMMAND\xright@appenditem	101
COMMAND\xsublineref	63
COMMAND\xxref	63, 301, 308, 460, 463, 470
COMMAND\xxxmatter	291
ENVIRONMENTastanza	468
ENVIRONMENTedarrayc	374
ENVIRONMENTedarrayl	374
ENVIRONMENTedarrayr	374
ENVIRONMENTedtabular	475
ENVIRONMENTedtabularc	374
ENVIRONMENTedtabularl	374
ENVIRONMENTedtabularr	374
ENVIRONMENTledgroup	85, 321, 402, 468
ENVIRONMENTledgroupsize	321
PACKAGE(r)(e)ledmac	42
PACKAGEEledmac	110, 326, 397, 398, 463, 464
PACKAGEEledpar	464
PACKAGEEtoolbox	84
PACKAGEParallel	406
PACKAGEReledmac	401, 402
PACKAGEamsgen	352
PACKAGEamsmath	352
PACKAGEbabel	52, 80, 363, 468
PACKAGEbiblatex	78
PACKAGEbidi	51, 52, 86, 467, 475
PACKAGEccaption	94
PACKAGEcolor	79
PACKAGEcsquotes	472
PACKAGEedmac	1, 6, 11, 13, 14, 81, 213, 222, 293, 336, 394, 406, 455
PACKAGEedstanza	1, 14, 334
PACKAGEeledmac	1, 11, 15, 16, 70, 222, 322, 326, 355, 378, 391, 395, 397–399, 459, 461, 463
PACKAGEeledpar	186, 406, 457, 461–463
PACKAGEetex	467
PACKAGEetoolbox	100, 147, 261, 275, 285, 313, 377, 388
PACKAGEfancyhdr	288, 471
PACKAGEfloatrow	78, 402
PACKAGEfootmisc	41, 80, 85, 222, 406, 471
PACKAGEgeometry	15
PACKAGEglossaries	71, 331, 468
PACKAGEhandout	462
PACKAGEhyperlink	269
PACKAGEhyperref	63, 140, 241, 293, 328, 329, 380, 390, 460–462, 469, 472, 475
PACKAGEifluatex	84
PACKAGEifxetex	84
PACKAGEimakeidx	69, 78, 85, 322, 326, 398, 459–461, 463
PACKAGEindextols	330
PACKAGEindextool	398

PACKAGEindextools	69, 78, 85, 95, 322, 326, 330, 398, 463, 468, 471
PACKAGEledarab	80
PACKAGEledmac	1, 11, 14, 15, 80, 100, 326, 394, 395, 398, 401
PACKAGEledpar	80
PACKAGEMemoir	85, 326, 398, 406, 461
PACKAGEMorewrites	78
PACKAGEMusixtex	461
PACKAGEperpage	468
PACKAGEpolyglossia	50, 80, 185, 208, 468, 475
PACKAGERagged2e	53, 84
PACKAGEREledmac	1, 2, 6, 11–13, 15–18, 20–22, 25, 28, 30, 32–35, 38, 41, 44–46, 49, 52, 53, 55, 57, 59, 61, 63–65, 67, 69–72, 76, 78–82, 102, 104, 110, 111, 114, 115, 119, 128–130, 138, 141, 143, 146, 147, 178, 187, 191, 196, 208, 222, 248, 262, 266, 275, 285, 290, 298, 299, 302, 309, 326, 348, 352, 355, 376, 377, 390, 398, 399, 401–404, 466, 469, 471
PACKAGEREledpar	1, 4, 6, 9, 17, 19, 21, 41, 56, 63, 66, 76–78, 80, 82, 94, 102, 113, 119, 129, 130, 141, 143, 154, 188, 191, 243, 244, 261, 268, 284, 286, 287, 290, 322, 334, 376, 467, 468, 470, 471, 473, 474
PACKAGESuffix	84
PACKAGETabmac	1, 14, 406
PACKAGEulem	41
PACKAGEuninormalize	34
PACKAGExargs	33, 84
PACKAGExkeyval	82, 284
PACKAGExparse	84, 474
PACKAGExr	5, 67, 309, 469
PACKAGExref	309
PACKAGExstring	84, 328

A

\absline@num	1
Abu Kamil Shuja' b. Aslam	14
\actionlines@list	1
\actions@list	1
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\add@hooktoggle@specific@to@cs	1
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\add@msdata	1
\add@msdata@firstlineofpage	1
\add@penalties	1
\add@Xgroupbyline	1
\addtol@denvbody	1
Adelard II	14
\advancelabel@refs	1
\advanceline	1, 23
\Aendnote	30
\affixline@num	1
\affixpstart@num	1
\affixside@note	1

<code>\Afootnote</code>	30
<code>\afternoteX</code>	53
<code>\afterruleX</code>	55
<code>\ampersand</code>	1, 61
<code>\annot@list</code>	1
<code>\annotationref</code>	1, 62
<code>\append@notesX</code>	1
<code>\append@Xnotes</code>	1
<code>\applabel</code>	1, 65
<code>\appref</code>	1, 65
<code>\apprefwithpage</code>	1, 65
<code>\arrangementX</code>	1, 43
<code>\arrangementX@normal</code>	1
<code>\arrangementX@paragraph</code>	1
<code>\arrangementX@threecol</code>	1
<code>\arrangementX@twocol</code>	1
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<code>\AtEndEveryPend</code>	1, 20
<code>\AtEveryPend</code>	1, 19
<code>\AtEveryPstart</code>	1, 19
<code>\AtEveryStanza</code>	1, 60
<code>\AtEveryStopStanza</code>	1, 60
<code>\AtStartEveryPstart</code>	1, 20
<code>\AtStartEveryStanza</code>	1, 60
<code>\autopar</code>	1, 19

B

<code>\ballast</code>	78
<code>\ballast@count</code>	1
Beeton, Barbara Ann Neuhaus Friend	19
<code>\beforeeledchapter</code>	1
<code>\BeforeEveryStopStanza</code>	1, 60
<code>\beforeinsertingX</code>	52
<code>\beforeinsertion@X</code>	1
<code>\beforenotesX</code>	55
<code>\beginnumbering</code>	1, 17
<code>\Bendnote</code>	30
<code>\Bfootnote</code>	30
<code>\bhookgroupX</code>	54
<code>\bhooknoteX</code>	52
<code>\bodyfootmarkA</code>	40
<code>\boxfootnotenumbers</code>	1
Bredon, Simon	14
Breger, Herbert	14, 355
Brey, Gerhard	14
Busard, Hubert L. L.	14
<code>\bypage@false</code>	1
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C

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<code>\chapter</code>	1
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Chester, Robert of	14
Claassens, Geert H. M.	14
<code>\colalignX</code>	53
<code>\continuousnumberingwithcolumns@sync@linenumber@singletext</code>	1
Copernicus, Nicolaus	14
<code>\critext</code>	394
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D

Dekker, Dirk-Jan	79
<code>\Dendnote</code>	30
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<code>\do@lockon</code>	1
<code>\do@lockonL</code>	1
<code>\do@Xfeet</code>	1
<code>\doedindexlabel</code>	1
<code>\doendnotes</code>	1, 31
<code>\doendnotesbysection</code>	1, 31

<code>\doinsidelinehook</code>	1, 28
<code>\doinsidethislinehook</code>	1, 28
<code>\dolinehook</code>	1, 28
<code>\dosplits</code>	1
Downes, Michael	79, 195, 197
<code>\dummy@edindex</code>	1
<code>\dummy@edtext</code>	1
<code>\dummy@edtext@showlemma</code>	1
<code>\dummy@ref</code>	1

E

<code>\edaftertab</code>	1, 74, 369
<code>edarrayc</code> (environment)	72
<code>edarrayl</code> (environment)	72
<code>edarrayr</code> (environment)	72
<code>\edatleft</code>	1, 74
<code>\edatright</code>	1, 74
<code>\edbeforetab</code>	1, 74, 369
<code>\edfilldimen</code>	1
<code>\edfont@info</code>	1
<code>\edindex</code>	1, 69
<code>\edindexlab</code>	1, 71
<code>\EDLABEL</code>	1
<code>\edlabel</code>	1, 62
<code>\edlabelE</code>	1, 64
<code>\edlabelS</code>	1, 64
<code>\edlabelSE</code>	1, 64
<code>\edlineref</code>	1, 62
<code>\edmakelabel</code>	1, 64
<code>\edpageref</code>	1, 62
<code>\edrowfill</code>	1, 73
<code>\EDTAB</code>	1
<code>\edtabcolsep</code>	1, 72
<code>\EDTABINDENT</code>	1
<code>\edtabindent</code>	1
<code>\EDTABtext</code>	1
<code>edtabularc</code> (environment)	72
<code>edtabularl</code> (environment)	72
<code>edtabularr</code> (environment)	72
<code>\EDTEXT</code>	1
<code>\edtext</code>	1, 29
<code>\edvertdots</code>	1, 74
<code>\edvertline</code>	1, 74
<code>\Eendnote</code>	30
<code>\Efootnote</code>	30
<code>\eled@chapter</code>	1
<code>\eled@section</code>	1
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<code>\endline@num</code>	1
<code>\endlock</code>	1, 23
<code>\endminipage</code>	1
<code>\endnumbering</code>	1, 17
<code>\endpage@num</code>	1
<code>\endprint</code>	1
<code>\endquotation</code>	1
<code>\endquote</code>	1
<code>\endsub</code>	1, 23
<code>\endsubline@num</code>	1
environments:	
<code>edarrayc</code>	72
<code>edarrayl</code>	72
<code>edarrayr</code>	72
<code>edtabularc</code>	72
<code>edtabularl</code>	72
<code>edtabularr</code>	72
<code>ledgroup</code>	61
<code>ledgroupsize</code>	62
<code>minipage</code>	61
<code>Euclid</code>	14
<code>\extensionchars</code>	1, 77

F

<code>\f@x@l@cks</code>	1
Fairbairns, Robin	41
<code>\first@linenum@out@false</code>	1
<code>\first@linenum@out@true</code>	1
<code>\firstlinenum</code>	1, 22
<code>\firstseriesX@</code>	1
<code>\firstsublinenum</code>	1, 22
<code>\firstXseries@</code>	1
<code>\flag@end</code>	1
<code>\flag@end@later</code>	1
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<code>\flag@start</code>	1
<code>\flag@start@later</code>	1
<code>\flag@start@RTL</code>	1
<code>\flagstanza</code>	1, 61

<code>\flush@notes</code>	1
<code>\fnpos</code>	1, 42
Folkerts, Menso	14
<code>\footfootmarkA</code>	40
<code>\footfudgefiddle</code>	1, 79
<code>\footnote</code>	1
<code>\footnoteA</code>	40
<code>\footnoteB</code>	40
<code>\footnoteC</code>	40
<code>\footnoteD</code>	40
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<code>\footnoteXmark</code>	41
<code>\footnoteXtext</code>	41
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G

Gädeke, Nora	14
<code>\get@edindex@hyperref</code>	1
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<code>\gl@p</code>	1

H

<code>\h@num</code>	1
<code>\hangindentX</code>	52
<code>\hidenumbering</code>	1, 24
<code>\hidenumberingonleftpage</code>	1, 24
<code>\hidenumberingonrightpage</code>	1
<code>\Hilfsbox</code>	1
<code>\hilfsbox</code>	1
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<code>\hsizetwocolX</code>	53
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I

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\ifl@dstartendok	1
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\ifl@imakeidx	1

<code>\ifl@indextools</code>	1
<code>\ifledfinal</code>	1, 77
<code>\ifledgroupnotesL@</code>	1
<code>\ifledgroupnotesR@</code>	1
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<code>\ifledRcol@</code>	1
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<code>\ifxindyhyperref@</code>	1
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<code>\initnumbering@reg</code>	1
<code>\insert@count</code>	0, 1
<code>\insert@msdata</code>	1
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<code>\insertparafootsepX</code>	1
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J

Jayaditya	14
-----------------	----

K

Kabelschacht, Alois	182
<code>\keep@this@crossref@forinserting</code>	1

L

<code>\l@advance@parledgroup@beforenormalnotes</code>	1
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<code>\ldparsedstartsub</code>	1
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<code>\lsecondmandarg</code>	1
<code>\lwrap@ifnotemptybox</code>	1
<code>\lwrapcs@ifnotemptybox</code>	1
<code>\label</code>	64
<code>\labelpstartfalse</code>	1
<code>\labelpstarttrue</code>	1, 20
<code>\labelref@list</code>	1
<code>\labelrefsparseline</code>	1
<code>\labelrefsparsesubline</code>	1
<code>\last@page@num</code>	1
Lavagnino, John	13
<code>\led@check@nopb</code>	1
<code>\led@check@pb</code>	1
<code>\led@err@AutoparNotNumbered</code>	1
<code>\led@err@BadAction</code>	1
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<code>\led@err@EdtextWithoutFootnote</code>	1
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<code>\led@warning@msdatawithoutstop</code>	1
<code>\led@warning@preXnotes@deprecated</code>	1
<code>\led@warning@Xhsize@deprecated</code>	1
<code>ledgroup</code> (environment)	61
<code>ledgroupsize</code> (environment)	62
<code>\ledinnernote</code>	1, 67
<code>\ledinnote</code>	1
<code>\ledinnotehyperpage</code>	1
<code>\ledinnotemark</code>	1
<code>\ledleftnote</code>	1, 67
<code>\ledlinenum</code>	1
<code>\ledllfill</code>	1
<code>\ledlsnotefontsetup</code>	1, 68
<code>\ledlsnotesep</code>	1, 68
<code>\ledlsnotewidth</code>	1, 68
<code>\lednopb</code>	1, 76
<code>\lednopbinversetrue</code>	77
<code>\lednopbnum</code>	1
<code>\ledouternote</code>	1, 67
<code>\ledpb</code>	1, 76
<code>\ledpbnum</code>	1
<code>\ledpbsetting</code>	1, 77
<code>\ledrightnote</code>	1, 67
<code>\ledrlfill</code>	1
<code>\ledrsnotefontsetup</code>	1, 68
<code>\ledrsnotesep</code>	1, 68
<code>\ledrsnotewidth</code>	1, 68
<code>\ledsectnomark</code>	1
<code>\ledsectnotoc</code>	1
<code>\ledsetnormalparstuff@common</code>	1
<code>\ledsetnormalparstuffX</code>	1
<code>\ledsidenote</code>	1, 67
<code>\leftctab</code>	1
<code>\leftlinenum</code>	1, 23
<code>\leftltab</code>	1
<code>\leftnoteupfalse</code>	68
<code>\leftpstartnum</code>	1
<code>\leftrtab</code>	1
<code>Leibniz</code>	14
<code>\lemma</code>	1, 32
<code>\letsforverteilen</code>	1
<code>\line@list</code>	1
<code>\line@list@stuff</code>	1
<code>\line@list@version</code>	1
<code>\line@margin</code>	1
<code>\line@num</code>	1
<code>\line@set</code>	1

<code>\lineannot</code>	1, 26
<code>\lineannot@set</code>	1
<code>\lineation</code>	1, 22
<code>\linenum</code>	1, 32
<code>\linenum@out</code>	1
<code>\linenumannotation</code>	1, 25
<code>\linenumberlist</code>	1, 22
<code>\linenumberstyle</code>	1, 24
<code>\linenumincrement</code>	1, 22
<code>\linenummargin</code>	1, 22
<code>\linenumr@p</code>	1
<code>\linenumrep</code>	1
<code>\linenumsep</code>	1, 23
<code>\linerrangesep@</code>	1
<code>\list@clear</code>	1
<code>\list@clearing@reg</code>	1
<code>\list@create</code>	1
<code>\lock@disp</code>	1
<code>\lock@off</code>	1
<code>\lock@on</code>	1
<code>\lockdisp</code>	1, 23
Lorch, Richard	14
<code>\ltab</code>	1
<code>\ltabtext</code>	1
Luecking, Dan	84

M

<code>\m@mmf@check</code>	1
<code>\m@mmf@prepare</code>	1
<code>\M@sect</code>	1
<code>\makehboxofhboxes</code>	1
<code>\managestanza@modulo</code>	1
<code>\maxhnotesX</code>	55
Mayer, Gyula	14
<code>\measurebody</code>	1
<code>\measuremcell</code>	1
<code>\measuremrow</code>	1
<code>\measuretbody</code>	1
<code>\measuretbody</code>	1
<code>\measuretbody</code>	1
<code>\measuretbody</code>	1
Middleton, Thomas	14, 109
<code>minipage</code> (environment)	61
Mittelbach, Frank	13
<code>\morenoexpands</code>	1, 79
<code>\mp@append@notesX</code>	1
<code>\mp@append@Xnotes</code>	1
<code>\mpfnpos</code>	1, 42
<code>\mpnormalfootgroup</code>	1
<code>\mpnormalfootgroupX</code>	1
<code>\mpnormalvfootnote</code>	1

<code>\mpnormalvfootnote@inserted</code>	1
<code>\mpnormalvfootnoteX</code>	1
<code>\mppara@footgroupX</code>	1
<code>\mppara@vfootnoteX</code>	1
<code>\mpparafootgroup</code>	1
<code>\mpparavfootnote</code>	1
<code>\mpthreecolfootgroup</code>	1
<code>\mpthreecolfootgroupX</code>	1
<code>\mpthreecolfootsetup</code>	1
<code>\mpthreecolfootsetupX</code>	1
<code>\mptwocolfootgroup</code>	1
<code>\mptwocolfootgroupX</code>	1
<code>\mptwocolfootsetup</code>	1
<code>\mptwocolfootsetupX</code>	1
<code>\msdata</code>	1, 39
<code>\msdata@c</code>	1
<code>\msdata@cR</code>	1
<code>\multfootsep</code>	1, 41
<code>\multiplefootnotemarker</code>	1

N

<code>\n@num</code>	1
<code>\n@num@stanza</code>	1
<code>\new@line</code>	1
<code>\newhookarg@specific</code>	1
<code>\newhookcommand@series</code>	1
<code>\newhookcommand@series@reload</code>	1
<code>\newhooktoggle@series</code>	1
<code>\newhooktoggle@series@reload</code>	1
<code>\newhooktoggle@specific</code>	1
<code>\newseries@</code>	1
<code>\newverse</code>	1
<code>\NEXT</code>	1
<code>\next@line@list@stuff</code>	1
<code>\no@expands</code>	1
<code>\nomk@</code>	1
<code>\normal@footnotemarkX</code>	1
<code>\normal@page@break</code>	1
<code>\normal@pars</code>	1
<code>\normalbfnoteX</code>	1
<code>\normalbodyfootmarkX</code>	1
<code>\normalfootfmt</code>	1
<code>\normalfootfmtX</code>	1
<code>\normalfootfootmarkX</code>	1
<code>\normalfootgroup</code>	1
<code>\normalfootgroupX</code>	1
<code>\normalfootnoterule</code>	1
<code>\normalfootnoteruleX</code>	1
<code>\normalfootstart</code>	1
<code>\normalfootstartX</code>	1

<code>\normalvfootnote</code>	1
<code>\normalvfootnote@inserted</code>	1
<code>\normalvfootnoteX</code>	1
<code>\notefontsizeX</code>	51
<code>\notenumfontX</code>	51
<code>\noteschanged@false</code>	1
<code>\noteschanged@true</code>	1
<code>\noteswidthliketwocolumnsX</code>	56
<code>\nulledindex</code>	1
<code>\nullsetzen</code>	1
<code>\num@lines</code>	1
<code>\numberedpar@false</code>	1
<code>\numberedpar@true</code>	1
<code>\numberingfalse</code>	1
<code>\numberingtrue</code>	1
<code>\numberlinefalse</code>	21
<code>\numberlinetrue</code>	21
<code>\numberpstartfalse</code>	1, 20
<code>\numberpstarttrue</code>	1, 20
<code>\numberstanzafalse</code>	61
<code>\numberstanzatrue</code>	61
<code>\numlabfont</code>	1, 57

O

<code>\old@hsize</code>	1
<code>\one@line</code>	1
<code>optionafter</code>	26
<code>optionauxdir</code>	16, 470
<code>optionbefore</code>	26
<code>optioncontinuousnumberingwithcolumns</code>	94, 162, 169, 469, 474
<code>optioninnnote</code>	468
<code>optioninnote</code>	468
<code>optionlinrangesep</code>	284
<code>optionnocritical</code>	468
<code>optionnoeledsec</code>	76, 382, 470
<code>optionnoend</code>	468
<code>optionnopenalties</code>	79
<code>optionnoprefix</code>	67, 475
<code>optionnoresetlinenumannotation</code>	25, 44, 474
<code>optionnotenumber</code>	468
<code>optionprefixmore</code>	67, 475
<code>optionsameparallelpagenum</code>	474
<code>optionswcaseinsensitive</code>	34, 473

P

<code>\page@action</code>	1
<code>\page@num</code>	1
<code>\pagelinesep</code>	1, 70
<code>\pageref</code>	64
<code>\par@line</code>	1

<code>\par@patch@pagenumbering</code>	1
<code>\par@patch@thepage</code>	1
<code>\para@footgroupX</code>	1
<code>\para@footsetup</code>	1
<code>\para@footsetupX</code>	1
<code>\para@vfootnoteX</code>	1
<code>\parafootfmt</code>	1
<code>\parafootfmtX</code>	1
<code>\parafootgroup</code>	1
<code>\parafootsepX</code>	53
<code>\parafootstart</code>	1
<code>\parafootstartX</code>	1
<code>\paravfootnote</code>	1
<code>\parindentX</code>	52
<code>\parse@annot</code>	1
<code>\pausenumbering</code>	1, 20
<code>\pausenumbering@page@num</code>	1
<code>\pend</code>	1, 18
Plato of Tivoli	14
<code>\postbodyfootmark</code>	1
<code>\prebodyfootmark</code>	1
<code>\prenotesX</code>	55
<code>\prepare@edindex@fornote</code>	1
<code>\prepare@prenotesX</code>	1
<code>\prepare@Xgroupbyline</code>	1
<code>\prepare@Xprenotes</code>	1
<code>\prev@nopb</code>	1
<code>\prev@pb</code>	1
<code>\prevpage@num</code>	1
<code>\print@eledsection</code>	1
<code>\print@footnoteXrule</code>	1
<code>\print@leftmargin@eledsection</code>	1
<code>\print@lemma</code>	1
<code>\print@line</code>	1
<code>\print@notesX</code>	1
<code>\print@rightmargin@eledsection</code>	1
<code>\print@Xfootnoterule</code>	1
<code>\print@Xnotes</code>	1
<code>\printendlines</code>	1
<code>\printlineendnote</code>	1
<code>\printlineendnotearea</code>	1
<code>\printlinefootnote</code>	1
<code>\printlinefootnotearea</code>	1
<code>\printlinefootnotenumbers</code>	1
<code>\printlines</code>	1
<code>\printnpnum</code>	1
<code>\printpstart</code>	1
<code>\printsymlineendnotearea</code>	1
<code>\printsymlinefootnotearea</code>	1
<code>\printXafternumber</code>	1

<code>\printXbeforenumber</code>	1
<code>\pstart</code>	1, 18
<code>\pstarteref</code>	1
<code>\pstartnum</code>	1
<code>\pstartref</code>	62
<code>\pstarts@read@L</code>	1
<code>\pstarts@typeset@L</code>	1

Q

<code>\quotation</code>	1
<code>\quote</code>	1

R

<code>\raggedX</code>	54
<code>\raw@text</code>	1
<code>\rbracket</code>	1
<code>\read@linelist</code>	1
<code>\ref</code>	64
<code>\ref@reg@later</code>	1
<code>\Relax</code>	1
<code>\reledmac@error</code>	1
<code>\reledmac@warning</code>	1
<code>\removehboxes</code>	1
<code>\reset@current@annot</code>	1
<code>\reset@msd@options@iffullpage</code>	1
<code>\resetprevline@</code>	1, 112
<code>\resetprevpage@</code>	1
<code>\resetprevpage@num</code>	112
<code>\restore@endnotes</code>	1
<code>\restore@familiarnotes</code>	1
<code>\restore@notes</code>	1
<code>\restore@sidenotes</code>	1
<code>\resumenumbering</code>	1, 20
<code>\rightctab</code>	1
<code>\rightlinenum</code>	1, 23
<code>\rightltab</code>	1
<code>\rightnoteupfalse</code>	68
<code>\rightrtab</code>	1
<code>\rightstartnum</code>	1
<code>\rigidbalance</code>	1
<code>\rigidbalanceX</code>	1
<code>\rtab</code>	1
<code>\rtabtext</code>	1

S

<code>Sacrobosco</code>	14
<code>\sameword</code>	1, 33
<code>\sameword@inedtext</code>	1
Schöpf, Rainer	13
<code>\section@num</code>	1

<code>\select@lemmafонт</code>	1
<code>\select@lemmafонт</code>	1, 57
<code>\Seref</code>	1, 64
<code>\Serefonlypage</code>	65
<code>\Serefwithpage</code>	1, 64
<code>\series</code>	1
<code>\seriesatbegin</code>	1, 42
<code>\seriesatend</code>	1, 42
<code>\set@continuousnumberingforL</code>	1
<code>\set@line</code>	1
<code>\set@line@action</code>	1
<code>\set@this@c@page</code>	1
<code>\set@txtbeforenotesX</code>	1
<code>\set@Xtxtbeforenotes</code>	1
<code>\setapprefprefixmore</code>	65
<code>\setapprefprefixsingle</code>	65
<code>\setcommand@series</code>	1
<code>\sethangindentX</code>	1
<code>\sethangingsymbol</code>	1, 59
<code>\setistwofollowinglines</code>	1
<code>\setl@dlp@rbox</code>	1
<code>\setl@drpr@box</code>	1
<code>\setline</code>	1, 23
<code>\setlinenum</code>	1, 24
<code>\setlinenumannotationsep</code>	1, 27
<code>\setmcellcenter</code>	1
<code>\setmcellleft</code>	1
<code>\setmcellright</code>	1
<code>\setmrowcenter</code>	1
<code>\setmrowleft</code>	1
<code>\setmrowright</code>	1
<code>\setmsdatalabel</code>	1, 40
<code>\setmsdataposition</code>	1, 40
<code>\setmsdataseries</code>	1, 40
<code>\setnoteswidthliketwocolumnsX@</code>	1
<code>\setnotesXpositionliketwocolumns@</code>	1
<code>\setparindentX</code>	1
<code>\setprintendlines</code>	1
<code>\setprintlines</code>	1
<code>\setSerefonlypageprefixmore</code>	65
<code>\setSerefonlypageprefixsingle</code>	65
<code>\setSerefprefixmore</code>	65
<code>\setSerefprefixsingle</code>	65
<code>\setsidenotessep</code>	68
<code>\setstanzaindents</code>	1, 57
<code>\setstanzapenalties</code>	1, 59
<code>\setstanzavalues</code>	1
<code>\settccllcenter</code>	1
<code>\settccllleft</code>	1
<code>\settccllright</code>	1

<code>\settoggle@series</code>	1
<code>\setthrowcenter</code>	1
<code>\setthrowleft</code>	1
<code>\setthrowright</code>	1
<code>\setXnotespositionliketwocolumns@</code>	1
<code>\setXnoteswidthliketwocolumns@</code>	1
<code>\showlemma</code>	1, 77
<code>\showwordrank</code>	1, 37
<code>\sidenote@margin</code>	1
<code>\sidenotemargin</code>	1, 67
<code>\sidepstartnumtrue</code>	20
<code>\skip@lockoff</code>	1
<code>\skipnumbering</code>	1, 24
<code>\splitoff</code>	1
<code>\spreadmath</code>	1, 72
<code>\spreadtext</code>	1, 72
<code>\stanza</code>	1, 57
<code>\stanza@count</code>	1
<code>\stanza@hang</code>	1
<code>\stanza@line</code>	1
<code>\stanzaindent</code>	1, 58
<code>\stanzaindent*</code>	1, 58
<code>\stanzaindentbase</code>	1, 57
<code>\stanzanumwrapper</code>	1, 61
<code>\startlock</code>	1, 23
<code>\startsub</code>	1, 23
<code>\stepl@dcolcount</code>	1
<code>\stopmsdata</code>	1, 39
<code>\store@annot@to@absline</code>	1
<code>\strip@szacnt</code>	1
<code>\sub@action</code>	1
<code>\sub@lock</code>	1
<code>\sub@off</code>	1
<code>\sub@on</code>	1
<code>\subline@num</code>	1
<code>\sublinenumberstyle</code>	1, 24
<code>\sublinenumincrement</code>	1, 22
<code>\sublinenumr@p</code>	1
<code>\sublinenumrep</code>	1
<code>\sublineref</code>	1, 62
<code>\sublines@false</code>	1
<code>\sublines@true</code>	1
<code>\sublock@disp</code>	1
<code>\sublockdisp</code>	1
Sullivan, Wayne	13, 14, 78, 93, 98, 195, 196, 293, 334
<code>\sw@noexpand</code>	1
<code>\swnoexpands</code>	37
<code>\sza@penalty</code>	1

T

<code>\tabHilfbox</code>	1
<code>\tabhilfbox</code>	1
<code>\theadcolcount</code>	1
<code>\theadtext</code>	1
<code>\theendpageline</code>	1
<code>\thefootnoteA</code>	40
Theodosius	14
<code>\thepageline</code>	1
<code>\thepar@page</code>	1
<code>\thepstart</code>	1, 20
<code>\thestanza</code>	1, 61
<code>\thestartpageline</code>	1
<code>\this@line@list@version</code>	1
<code>\this@section@last@page@num</code>	1
<code>\this@section@page@num</code>	1
<code>\threecol@begin@insert</code>	1
<code>\threecolfootfmt</code>	1
<code>\threecolfootfmtX</code>	1
<code>\threecolfootgroup</code>	1
<code>\threecolfootgroupX</code>	1
<code>\threecolfootsetup</code>	1
<code>\threecolfootsetupX</code>	1
<code>\threecolvfootnote</code>	1
<code>\threecolvfootnote@inserted</code>	1
<code>\threecolvfootnoteX</code>	1
<code>\toendnotes</code>	1, 31
<code>\toendnotes*</code>	1
<code>\twocolfootfmt</code>	1
<code>\twocolfootfmtX</code>	1
<code>\twocolfootgroup</code>	1
<code>\twocolfootgroupX</code>	1
<code>\twocolfootsetup</code>	1
<code>\twocolfootsetupX</code>	1
<code>\twocolvfootnote</code>	1
<code>\twocolvfootnote@inserted</code>	1
<code>\twocolvfootnoteX</code>	1
<code>\txtbeforenotesonlyonceX</code>	54
<code>\txtbeforenotesX</code>	54

U

<code>\unvxhX</code>	1
----------------------------	---

V

Vamana	14
<code>\variab</code>	1
<code>\vbfnoteX</code>	1
<code>\vl@dbfnote</code>	1
<code>\vl@dcnote</code>	1
<code>\vl@disnote</code>	1

\vl@dlsnote	1
\vl@dosnote	1
\vl@drsnote	1
\vnumfootnoteX	1

W

Whitney, Ron	13
\widthX	56
\wrap@edcrossref	1
\wrapcontentX	52
\wrapped@bodyfootmarkX	1
\wrapped@footfootmarkX	1
Wujastyk, Dominik	13

X

\X@atbegininsertion	1
\X@beforeinsertion	1
\X@doreinfeet	1
\xabslineref	1
\Xafterlemmaseparator	50
\Xafternote	53
\Xafternumber	48
\Xafterrule	55
\Xaftersymmlinenumber	48
\xannotationref	1, 63
\Xarrangement	1, 43
\Xarrangement@normal	1
\Xarrangement@paragraph	1
\Xarrangement@threecol	1
\Xarrangement@twocol	1
\Xbeforeinserting	52
\Xbeforelemmaseparator	50
\Xbeforenotes	55
\Xbeforenumber	48
\Xbeforesymmlinenumber	48
\Xbhookgroup	54
\Xbhooknote	52
\Xboxlinenumber	48
\Xboxlinenumalign	49
\Xboxsymmlinenumber	49
\Xcolalign	53
\xedindex	1
\xedlabel	1
\xedtext	1
\Xendafterlemmaseparator	50
\Xendafternote	56
\Xendafterpagenumber	46
\Xendaftersymmlinenumber	48
\Xendaftrenumber	48
\Xendahookinplaceofnumber	49

\Xendahooklinenumber	49
\Xendbeforelemmaseparator	50
\Xendbeforenumber	48
\Xendbeforepagenumber	46
\Xendbeforesymlinenum	48
\Xendbhookinplaceofnumber	49
\Xendbhooklinenumber	49
\Xendbhooknote	52
\Xendboxendlinenumalign	49
\Xendboxlinenum	49
\Xendboxlinenumalign	49
\Xendboxstartlinenumalign	49
\Xendboxsymlinenum	49
\Xendhangindent	52
\Xendinplaceoflemmaseparator	50
\Xendinplaceofnumber	48
\Xendinplaceofpagenumber	45
\Xendlemmadisablefontselection	51
\Xendlemmafont	51
\Xendlemmaseparator	50
\Xendlinenumannotationonlyfirst	45
\Xendlinenumannotationonlyfirstintwo	45
\Xendlinenumannotationposition	26
\Xendlineprefixmore	46
\Xendlineprefixsingle	46
\Xendlinerrangeseparator	46
\Xendmorethantwolines	47
\Xendnoidenticallinenumannotation	27
\Xendnonumber	47
\Xendnotefontsize	51
\Xendnotenumfont	50
\Xendnumberonlyfirstinline	44
\Xendnumberonlyfirstintwolines	44
\Xendpagenumberonlyfirst	45
\Xendparagraph	56
\Xendsep	56
\Xendstorelineinfo	1
\Xendsublinesep	47
\Xendsymlinenum	44
\Xendsymlinenumannotation	45
\Xendsympagenum	45
\Xendtwolines	47
\Xendtwolinesbutnotmore	47
\Xendtxtbeforenotes	54
\Xendwrapcontent	52
\xflagref	1
\Xgroupbyline	54
\Xgroupbylineseparetwolines	54
\Xhangindent	52
\Xhsizethreecol	53

\Xhsizetwocol	53
\Xinplaceoflemmaseparator	50
\Xinplaceofnumber	48
\Xinsertparafootsep	<u>1</u>
\Xledsetnormalparstuff	<u>1</u>
\xleft@appenditem	<u>1</u>
\Xlemmadisablefontselection	51
\Xlemmafont	51
\Xlemmaseparator	50
\Xlinenumannotationonlyfirst	44
\Xlinenumannotationonlyfirstintwo	44
\Xlinenumannotationposition	26
\Xlinenumannotationposition@side	<u>1</u>
\Xlinrangeseparator	46
\xlineref	<u>1</u> , 63
\Xmaxhnotes	55
\Xmorethantwolines	46
\Xnoidenticallinenumannotation	27
\Xnolemmaseparator	<u>1</u> , 50
\Xnonbreakableafternumber	48
\Xnonumber	47
\Xnotefontsize	51
\Xnotenumfont	50
\Xnoteswidthliketwocolumns	56
\Xnumberonlyfirstinline	44
\Xnumberonlyfirstintwolines	44
\Xonlypstart	47
\Xpagelinesep	48
\xpageref	<u>1</u> , 63
\Xparafootsep	53
\Xparindent	52
\Xprenotes	<u>1</u> , 55
\Xprenotes@	<u>1</u>
\Xpstart	47
\Xpstarteverytime	47
\xpstartref	<u>1</u> , 63
\XR@test	<u>1</u>
\XR@test@mac	<u>1</u>
\XR@test@mac@test	<u>1</u>
\Xragged	54
\xright@appenditem	<u>1</u>
\Xrigidbalance	<u>1</u>
\Xsethangindent	<u>1</u>
\Xsetparindent	<u>1</u>
\Xstanza	47
\Xstanzaseparator	47
\Xstorelineinfo	<u>1</u>
\xsublineref	<u>1</u> , 63
\Xsublinesep	23, 47
\Xsublinesepside	23

<code>\Xsymlinenum</code>	44
<code>\Xsymlinenumannotation</code>	45
<code>\Xtoendnotes</code>	31
<code>\Xtwolines</code>	46
<code>\Xtwolinesonlyinsamepage</code>	46
<code>\Xtxtbeforenotes</code>	54
<code>\Xtxtbeforenotesonlyonce</code>	54
<code>\Xtxtbeforenumber</code>	46
<code>\Xunvxh</code>	<u>1</u>
<code>\Xwidth</code>	56
<code>\Xwrapcontent</code>	52
<code>\Xwrapendlemma</code>	51
<code>\Xwraplemma</code>	51
<code>\Xwraplinenumannotation@ref</code>	<u>1</u>
<code>\Xwraplinenumannotation@side</code>	<u>1</u>
<code>\xxref</code>	<u>1</u> , 63

Z

<code>\zz@@@</code>	<u>1</u>
<code>\zz@@@</code>	<u>1</u>

Change History

v0.1.0.	
General: First public release	1
v0.2.0.	
\ifl@dmemoir: Added \ifl@dmemoir for memoir class having been used	85
\morenoexpands: Added \l@dtabnoexpands to \no@expands	139
\reledmac@error: Added \eledmac@error and replaced error messages	86
General: Added tabmac code, and extended indexing	1
v0.2.1.	
\@lab: Removed page setting from \@lab	296
\edlabel: Tweaked \edlabel to get correct page numbers	293
\l@ddodoreintrafeet: Renamed \dodoreintrafeet to \l@ddodoreintrafeet	286
\l@ddoxtrafeet: Renamed \doxtrafeet to \l@ddoxtrafeet	285
\morenoexpands: Removed some \lets from \no@expands. These were in edmac but Peter Wilson feels that they should not have been as they disabled page/line refs in a footnotes	139
General: Added text about normal labeling	64
Bug fixes and match with mempatch v1.8	1
Major changes to insert code when memoir is loaded	288
v0.2.2.	
\footfudgefiddle: Added \footfudgefiddle	193
\next@line@list@stuff: Added initial write of page number in \line@list@stuff	129
\para@footsetup: Added \footfudgefiddle to \para@footsetup	194
\para@footsetupX: Added \footfudgefiddle to \para@footsetupX	237
General: Improved paragraph footnotes	1
New Dekker example	1
Used \providecommand for \@gobblethree to avoid clash with the amsfonts package	93
v0.3.0.	
\@lab: Replaced \the\line@num by \linenumr@p\line@num in \@lab, and similar for sub-lines	296
\@nl@reg: Added a bunch of code to \@nl for handling \setlinenum	116
\ledlinenum: Added \linenumr@p and \sublinenumr@p to \leftlinenum and \rightlinenum	107
\linenumberlist: Added \linenumberlist mechanism	93
\printendlines: Added \linenumr@p and \sublinenumr@p to \printendlines	257
\printlines: Added \linenumr@p and \sublinenumr@p to \printlines	220
\sublinenumr@p: Added \linenumberstyle and \sublinenumberstyle	106
General: Includes edstanza and more	1
v0.3.1.	
General: Not released. Added remarks about the parallel package	1
v0.4.0.	
\@iiiminipage: Modified kernel \@iiiminipage and \endminipage to cater for critical footnotes	319
\Xarrangement@normal: Added minpage footnote setup to \footnormal	188
\edtext: Added \showlemma to \edtext	140
\l@dfeetendmini: Added \l@dfeetbeginmini, \l@dfeetendmini and all their supporting code	317
\mpnormalfootgroup: Added \mpnormalfootgroup	192

\mpnormalvfootnote: Added \mpnormalvfootnote	190
\showlemma: Added \showlemma	93
General: Added final/draft options	82
Added ledgroup environment	321
Added ledgroupsize environment	321
Added minipage, etc., support	1
v0.4.1.	
\do@Xfeet: Changed \do@Xfeet code for easier extensions	285
\edindex: Let eledmac take advantage of memoir's indexing	326
\print@Xnotes: Added \opXfeet	286
General: Added code for changing \doclearpage	289
Not released. Minor editorial improvements and code tweaks	1
Only change \@footnotetext and \@footnotemark if memoir not used	223
v0.5.0.	
\@footnotetext: Enabled regular \footnote in numbered text	224
\@xympar: Eliminated \marginpar disturbance	309
General: Added left and right sidenotes	310
Added sidenotes, familiar footnotes in numbered text	1
v0.5.1.	
\affixline@num: Changed \affixline@num to cater for sidenotes	172
\l@dotsidenote@margin: Added \sidenotemark and \sidenote@margin	310
General: Added moveable sidenote	310
Fixed right line numbers killed in v0.5	1
Only change \hsize in ledgroupsize environment otherwise page number can be in wrong place	321
v0.6.0.	
\@lopR: Added \@pend, \@pendR, \@lopL and \@lopR in anticipation of parallel processing	119
\@nl@reg: Extended \@nl to include the page number	116
\get@thisfootnote: Changed \l@dbfnote and \v1@dbfnote as originals could give incorrect markers in the footnotes	224
\set@thiscc@page: Extended \new@line to output page numbers	130
General: Fixed long paragraphs looping	1
Fixed minor typos	1
Prepared for eledpar package	1
v0.7.0.	
\@nl@reg: Added \@nl@reg	116
\@ref@reg: Added \@ref@reg	126
\affixline@num: Added skipnumering to \affixline@num	172
\do@actions@fixedcode: Added \do@actions@fixedcode	168
\do@actions@next: Added number skipping to \do@actions	167
\do@insidelinehook: Added \do@linehook for use in \do@line	164
\endnumbering: Changed \endnumbering for eledpar	98
\fx@l@cks: Added \ch@cksub@l@ck, \ch@ck@l@ck and \fx@l@cks	175
\footsplitskips: Added \footsplitskips for use in many footnote styles	186
\get@linelistfile: Added \get@linelistfile	114
\initnumbering@reg: Added \initnumbering@reg	96
\l@advance@parledgroup@beforenormalnotes: Added \l@dunboxmpfoot containing some common code	320
\l@dcstotext@r: Added \l@emptyd@ta	165

\l@dgetline@margin: Added \l@dgetline@margin	103
\l@dgetlock@disp: Added \l@dgetlock@disp	105
\l@dgetsidenote@margin: Added \l@dgetsidenote@margin	310
\l@dnumpstartsL: Added \l@dnumpstartsL, \ifl@dpairing and \ifpst@rted for/from eledpar	94
\l@drsn@te: Added \l@dlsn@te and \l@drsn@te for use in \do@line	165
\l@dzeropenalties: Added \l@dzeropenalties	159
\ledlinenum: Added \ledlinenum for use by \leftlinenum and \rightlinenum	107
\list@clearing@reg: Added \list@clearing@reg	114
\n@num: Added \n@num	124
\next@line@list@stuff: Deleted \page@start from \line@list@stuff	129
\normalbfnoteX: Removed extraneous space from \normalbfnoteX	230
\pausenumbering@page@num: Changed \resumenumbering for eledpar	99
\setprintendlines: Added \setprintendlines for use by \printendlines	253
\setprintlines: Added \setprintlines for use by \printlines	214
\skipnumbering: Added \skipnumbering and supports	136
\sublinenumincrement: Added \firstlinenum, \linenumincrement, \firstsublinenum and \linenumincrement	104
\sublinenumr@p: Using \linenumrep instead of \linenumr@p	106
Using \sublinenumrep instead of \sublinenumr@p	106
\vnumfootnoteX: Removed extraneous space from \vnumfootnoteX	231
General: eledmac having been available for 2 years, deleted the commented out original edmac texts	1
Maïeul Rouquette new maintainer	1
Made macros of all messages	86
Replaced all \interAfootnotelinepenalty, etc., by just \interfootnotelinepenalty	1
Tidying up for eledpar and ledarab packages	1
v0.8.0.	
General: Bug on endnotes fixed: in a // text, all endnotes will print and be placed at the ends of columns ()	1
v0.8.1.	
General: Bug on \edtext ; \critex ; \lemma fixed: we can now us non-switching commands	1
v0.9.0.	
General: No more ledpatch. All patches are now in the main file.	1
v0.9.1.	
General: Fix some bugs linked to integrating ledpatch on the main file.	1
v0.10.0.	
General: Corrections to \section and other titles in numbered sections	1
v0.11.0.	
General: Makes it possible to add a symbol on each verse's hanging, as in French typography. Redefines the command \hangingsymbol to define the character.	1
v0.12.0.	
\l@dnumpstartsL: Added \ifledRcol and \ifnumberingR for/from eledpar	94
General: For compatibility with eledpar, possibility to use \autopar on the right side.	1
Possibility to number \pstart.	20
Possibility to number the pstart with the commands \numberpstarttrue.	1
v0.12.1.	
General: Don't number \pstarts of stanza.	1

The numbering of <code>\pstart</code> restarts on each <code>\beginnumbering</code> .	1
v0.13.0.	
<code>\managestanza@modulo</code> : New <code>stanzaindentsrepetition</code> counter to repeat stanza indents every n verses.	336
General: New <code>stanzaindentsrepetition</code> counter to repeat stanza indents every n verses.	58
New <code>stanzaindentsrepetition</code> counter: to repeat stanza indents every n verses.	1
v0.13.1.	
General: <code>\thepstartL</code> and <code>\thepstartR</code> use now <code>\bfseries</code> and not <code>\bf</code> , which is deprecated and makes conflicts with <code>memoir</code> class.	1
v0.14.0.	
<code>\edlabel</code> : Tweaked <code>\edlabel</code> to get correct line number if the command is first element of a paragraph.	293
General: Tweaked <code>\edlabel</code> to get correct line number if the command is first element of a paragraph.	1
v0.15.0.	
<code>\affixline@num</code> : Line numbering can be disabled.	173
<code>\ifinserthangingsymbol</code> : New management of <code>hangingsymbol</code> insertion, preventing undesirable insertions.	335
<code>\printlines</code> : Line numbering can be reset at each <code>pstart</code> .	219
General: Line numbering can be reset at each <code>pstart</code> .	101
Possibility to print <code>\pstart</code> number at the sides of the text.	20
v0.17.0.	
<code>\ifinserthangingsymbol</code> : New new management of <code>hangingsymbol</code> insertion, preventing undesirable insertions.	335
v1.0.0.	
<code>\morenoexpands</code> : Change to be compatible with new features	139
General: <code>\lemma</code> can contain commands.	32
Debug in lineation command	22
New generic commands to customize footnote display.	43, 274
Options <code>nonum</code> and <code>nosep</code> in <code>\Xfootnote</code> .	30
Options of <code>\Xfootnotes</code> .	184
Possibility to have commands in sidenotes.	67
Some compatibility break with <code>eledmac</code> . Change of name: <code>eledmac</code> .	1
v1.0.1.	
General: Correction on <code>\Xnumberonlyfirstinline</code> with lineation by <code>pstart</code> or by page.	44
v1.1.0.	
<code>\Xprenotes</code> : New skip <code>\Xprenotes@</code>	245
<code>\settoggle@series</code> : <code>\settoggle@series</code> switch the global value of the toggle, not only the local value.	275
General: Add <code>\labelpstarttrue</code> .	20
Add <code>\Xnumberonlyfirstintwolines</code>	44
Add <code>\Xpstart</code> and <code>\Xonlypstart</code>	47
New hook to add arbitrary code at the beginning of the notes	52
New options for block of notes.	54
New package option: <code>parapparatus</code> .	1
New tools to change order of series	274
Sectioning commands.	75
v1.2.0.	
<code>\Xprenotes</code> : Debug in familiar footnotes (bug introduced by v1.1).	245
<code>\endquote</code> : Compatibility of <code>\ledchapter</code> with the <i>memoir</i> class.	375

v1.3.0.	
\endquote:	<i>Quotation</i> and quote environment inside numbered sections. 375
v1.4.0.	
\edtext:	Compatibility of \edtext with the right-to-left direction (with Polyglossia). 140
\ledsetnormalparstuffX:	Direction of footnotes with polyglossia. 242
\newseries@:	Remembers the language of the lemma, in order to create a correct direction for the footnote separator. 264
\rbracket:	Switch the right bracket to a left bracket when the lemma is RTL (needs polyglossia or LuaTeX). 208
General:	Compatibility with LuaTeX of RTL notes. 1
v1.4.1.	
\affixside@note:	Remove spurious spaces. 316
\endquote:	New option <i>noquotation</i> 375
\get@thisfootnote:	Compatibility of standard footnotes with eledmac when these footnotes contain any commands. 224
\labelrefsparsesubline:	Fix a bug with \edlabel. 295
v1.4.2.	
General:	Debug with some special classes. 1
v1.4.3.	
General:	Add \Xnonbreakableafternumber. 48
	Spurious space after familiar footnotes. 1
v1.4.4.	
General:	Label inside familiar footnotes. 1
v1.4.5.	
General:	Bug with komasscript + eledpar + chapter. 1
v1.4.6.	
General:	Bug with memoir class introduced by 1.4.5. 1
v1.4.7.	
\endquote:	Compatibility of sectioning commands with \autopar. 375
v1.4.8.	
General:	Corrects a bug with parallel texts introduced by 1.1. 1
v1.4.9.	
\normalbfnoteX:	Allow to redefine \thefootnoteX with alph when some packages are loaded. 230
v1.5.0.	
\do@insidelinehook:	Added \do@insidelinehook for use in \do@line 164
\edindex:	Compatibility with imakeidx package, and possibility to use multiple index with \edindex. 326
General:	Correct indexing when the call is made in critical notes. 322
v1.5.1.	
\managestanza@modulo:	Correct stanzaindentsrepetition counter 336
\normalvfootnoteX:	Fix a bug with normal familiar footnotes when mixing RTL and LTR text. 227
v1.6.0.	
\newverse:	Add \falseverse macro. 339
v1.6.1.	
\AtStartEveryPstart:	Spurious space in \pstart. 154
\ifinserthangingsymbol:	Hang verse is now not automatically flush right. 335
\l@dunhbox@line:	Move the call to \inserthangingsymbol to allow use \hfill inside. 160

\pend: Spurious space in \pend.	156
General: Corrects a false hanging verse when a verse is exactly the length of a line.	1
v1.7.0.	
General: New features for managing page breaks.	76
v1.8.0.	
\endquote: Correction of sectioning commands in parallel texts.	375
\get@index@command: Debug \get@index@command and compatibility with hyperref package.	325
\newhookcommand@series@reload: Debug \beforenotesX and \maxhnotesX which did not work.	278
\prevpage@num: Correct \parafootsep when using with ledgroup.	199
General: Compatibility with parledgroup option ofeledpar package.	1
If imakeidx and hyperref are loaded, adds hyperref in the index.	322
v1.8.1.	
General: Debug endnotes when more than one series is used (change the position where tools for endnotes are defined).	247
v1.8.2.	
General: Debug compatibility problem with hebrew option of babel package.	1
v1.8.3.	
General: Fixes spurious spaces added by v1.7.0.	1
v1.8.5.	
General: Debug indexing in right column, witheledpar.	322
v1.9.0.	
\l@ddoxtrafeet: Add \fnpos to choice the order of footnotes.	285
\l@dfteetendmini: Add \mpfnpos to choice the order of footnotes in minipage / ledgroup.	317
v1.10.0.	
\endquote: Correction of sectioning commands in parallel texts.	375
General: Add \pstartref and \xpstartref to refer to a pstart number (extension of \edlabel).	1
v1.10.1.	
General: Compatibility with cleveref.	1
v1.10.2.	
General: Compatibility of stanza with v1.8a of babel-greek.	1
v1.10.3.	
General: Debug of cross-referencing.	1
v1.10.4.	
General: Debug of critical notes in edtabular environment.	1
v1.10.5.	
General: Debug of \pausenumbering.	1
Debug of \xxref.	1
v1.10.6.	
General: Debug of interaction between \autopar and \pausenumbering.	1
v1.11.0.	
General: Add hooks to disable the font selection for lemma in footnote.	51
v1.11.1.	
General: Correct a bug when a critical note starts with plus or minus.	1
v1.12.0.	
\@nl@reg: To ensure compatibility with \musixtex, \@l becomes \@l. Consequently, \@l@reg becomes \@nl@reg.	116

\AtStartEveryPstart: New optional argument for \pstart, to execute code before it.	154
\edindex: Use correctly default index when imakeidx is loaded.	326
\endquote: \ledxxx sectioning commands are deprecated and replaced by \eledxxx commands.	375
\initnumbering@reg: \beginnumbering is defined only on eledmac, not on eledpar.	96
\l@dgetsidenote@margin: \sidenotemargin is now directly defined in eledmac to be able to manage eledpar.	310
\l@disnote: \l@dlsnote, \l@drsnote and \l@dcnote defined only one time, in eledmac, including needs for eledpar case.	311
\l@dnumpstartsL: Add \ifledRcol@ for eledpar	94
\l@dunhbox@line: \do@line is split in more little commands.	161
\newhookcommand@series@reload: Debug \beforenotesX and \maxhnotesX which did not work when called after \footparagraphX.	278
Debug \Xbeforenotes and \Xmaxhnotes which did not work when called after \footparagraph.	278
\pend: New optional argument for \pend, to execute code after it.	156
\stanza: &can have an optional argument: content to be printed after.	339
\Stanza can have an optional argument: content to be printed before.	339
Add \newverse macro, \falseverse deprecated.	339
General: Add \ledinnernote and \ledouternote commands.	67
Add \Xendparagraph and related settings.	56
Add hyperlink to crossref (needs hyperref package).	62
Compatibility with musixtex.	1
Debug eledmac sectioning command after using \resumenumbering.	1
Ensure that imakeidx is loaded <i>before</i> eledmac	322
New hooks: \Xafterrule and \afterruleX	55
New options for ragged-paragraph notes	54
New sectioning commands.	75
Optional arguments for \pstart and \pend.	19
v1.12.1.	
\wrap@edcrossref: Fix spurious spaces.	298
v1.12.2.	
\l@dunhbox@line: Fix a bug with critical notes at the tops of pages (added by v12.0.0)	160
v1.12.3.	
\flag@end: \flag@start and \flag@end are now defined only one time for eledmac and eledpar	131
\flag@start send a error message when a \edtext is done without insert (note)	131
\reledmac@error: Replaced error messages	86
General: Add macros for new messages since v0.7	86
Correct bug with side and familiar notes in tabular environments.	1
Debug \eledxxx with some paper size	1
Debug \ledinnernote and \ledouternote commands in the top of pages.	67
Debug left and right notes (bugs added by 1.12.0)	1
Underline lemma in \eledxxx when using draft mode.	1
v1.12.4.	
General: Debug spurious page breaks before \chapter (bug added in 1.12.0)	1
v1.12.5.	
\@edindex@hyperref: Debug \edindex when hyperref is not loaded	328
\@ssect: Debug \eledchapter in parallel with memoir	378
\doinsidelinehook: Added \dolinehook and \doinsidelinehook	164

\endnumbering: Allow to mix parallel columns and normal text when using	
\pausenumbering	98
\l@dobbleoptarg: \l@dobblearg becomes \l@dobbeloptyarg	358
\l@restoreforedtext: Debug optional arguments of \Xfootnote in tabular context	358
\pausenumbering@page@num: Debug \resumenumbering	99
v1.12.7.	
\wrap@edcrossref: \wrap@edcrossref is now robust	298
v1.12.8.	
\flag@end: \flag@start do not send a error message when a \edtext is done	
without insert (note) but have a endnote	131
v1.13.0.	
\newhooktoggle@series@reload: Add \newhookcommand@toggle@reload	277
\para@footsetupX: In \para@footsetupX, use \columnwidth instead of \hsize	237
\settoggle@series: \settoggle@series can take an optional arguments to reload	
series setup.	275
General: Add \Xnoteswidthliketwocolumns and \noteswidthliketwocolumnsX	56
Added widthliketwocolumns option	82
v1.13.1.	
\ifat@every@pstart@star@: Add \l@dzeroopenalties in \pstart	154
General: Coming back of page and line breaking penalties's management, deleted by	
error in v0.17.	1
Debug quotation environment inside of a \pstart preceded by a sectioning command.	1
v1.13.2.	
\l@dnumpstartsL: Add \ifl@dpaging for eledpar	94
General: Fix a bug with normal footnotes, added by v1.13.0.	1
v1.13.3.	
General: Fix extra spaces with paragraphed footnotes, added by v1.13.0.	1
v1.13.4.	
General: Fix a bug with index when memoir class is used without hyperref	1
v1.14.0.	
\edindex: Let eledmac take advantage of imakeidx even when memoir class is used	326
General: Debug spurious characters before endnotes.	247
Delete previous override of \l@d@wrindexhyp at the beginning of a document	
when hyperref is not loaded.	330
Move gobbling command	93
Provide \@gobblefour	93
v1.14.1.	
\@ssect: Debug sectioning commands when using both handout and hyperref	
package.	380
v1.14.2.	
\@ssect: Debug \edtext after starred sectioning commands when using memoir class.	378
v1.15.0.	
\@edtext@level: New boolean \if@edtext@.	139
\arrangementX@paragraph: Correct bug with paragraphed familiar footnotes setting.	237
\endsub: Restore subline feature (disabled by mistake in v1.8.0).	134
\if@lemmacommand@: New boolean \iflemmacommand@.	145
General: Fix a bug with footnotes layout when using some options of the geometry	
package (bug add by v1.13.0).	1
New commands \AtEveryPstart and \AtEveryPend.	19
New tools to prevent ambiguous references in lemma	33

v1.15.1.	
\next@line@list@stuff:	Revert modification of 1.5.2 which makes bug with numbering. Leave vertical mode to solve spurious space before minipage.
	129
v1.16.0.	
General:	\edtext is now defined only in eledmac, not in eledpar. Debug wrong numbering when using \sameword + eledpar + \tag command.
	140
Compatibility of standard footnotes with some biblatex styles.	. . . . .
	1
New \stanzaindent command.	. . . . .
	1
v1.16.1.	
\xlineref:	\lineref is not defined if defined by some other package, like lineno. Eledmac provides \edlineref instead.
	299
v1.17.0.	
\edtext:	Error message when calling \edtext outside of a numbered paragraph. . . .
	140
v1.18.0.	
\@edindex@hyperref:	Fix spurious space with \edindex when using imakeidx/indextools + hyperref.
	328
\edlabel:	\edlabel is now defined only one time for both eledmac and eledpar . . .
	293
\l@d@section:	Option parapparatus works for endnotes.
	248
\l@dnumpstartsL:	Add \ifl@dprintingpages and \@dprintingcolumns for eledpar
	94
\print@line:	Compatibility with Lua \TeX RTL languages.
	161
\printlinefootnote:	Code refactoring in \printlinefootnote: the printing of the numbers are factorized in \printlinefootnotearea
	210
\printpstart:	Debug \Xpstart with parallel pages and columns (eledpar)
	209
General:	Add \Xpstarteverytime
	47
Compatibility with Lua \TeX RTL languages.	. . . . .
	1
Debug \Xonlypstart when using \Xnumberonlyfirstinline and the current line number differs from the previous.	. . . . .
	47
v1.19.0.	
\footplitskips:	\footplitskips doesn't set \floatingpenalty to \@MM when processing parallel pages.
	186
\xxref:	\xxref works also with right side numbers, when \@Rlineflag is not empty. . .
	301
General:	\Xmaxhnotes and \maxhnotesX work now for both two-columns and three-columns setting.
	1
Compatibility with eledpar v1.13.0.	. . . . .
	1
v1.19.1.	
General:	Call \correct@footinsX@box and \correct@Xfootins@box directly in \print@notesX@forpages and \print@Xnotes@forpages, that is in eledpar. . .
	1
v1.20.0.	
\printlines:	Added \ifl@d@Xmorethantwolines and \ifl@d@Xmorethantwolines to \printlines
	220
\stanza:	& and \& can be preceded by spaces.
	339
\xxref:	Debug \xxref when not loading eledpar (Fix a bug added in 1.19.0).
	301
General:	Add \Xendboxlinenum
	49
Add \Xtwolines and \Xmorethantwolines hooks	. . . . .
	46
Add series option.	. . . . .
	1
Correct \Xinplaceofnumber hook.	. . . . .
	1
Explicit error message when calling \Xfootnote outside of \edtext.	. . . . .
	1
Fix a bug with line number typesetting direction when using \eledsection and similar commands for RTL texts with Lua\TeX.	. . . . .
	1

Fix issues with RTL text in notes when using Lua \TeX .	1
Options fulllines in <code>\Xfootnote</code> .	30
The <code>\newifs</code> are not followed by boolean values set to false, because it is the \TeX default setting.	1
v1.21.0.	
<code>\@edindex@hyperref</code> : Look at the hyperindex option of hyperref before inserting hyperref	328
<code>\l@d@section</code> : <code>\endnotes</code> take five arguments.	248
<code>\ledinnotemark</code> : Add <code>\ledinnotemark</code> .	325
<code>\ledsetnormalparstuffX</code> : <code>\ledsetnormalparstuff</code> is deprecated and becomes <code>\ledsetnormalparstuffX</code> and <code>\Xledsetnormalparstuff</code> .	242
<code>\n@num</code> : <code>\n@num@ref</code> deleted	124
<code>\n@num</code> defined only one time for both <code>Eledmac</code> and <code>Eledpar</code>	124
<code>\newhookcommand@series</code> : <code>\newhookcommand@series</code> can take an optional argument.	277
<code>\newhooktoggle@series</code> : <code>\newhooktoggle@series</code> can take an optional argument.	277
<code>\print@footnotexrule</code> : Code refactoring: the spaces after the footnote rules are directly managed in <code>\print@Xfootnoterule</code> and <code>\print@footnotexrule</code>	244
<code>\seriesatend</code> : Fix spurious space in <code>\seriesatend</code>	274
<code>\skipnumbering</code> : <code>\skipnumbering</code> defined only one time for both <code>Eledmac</code> and <code>Eledpar</code> .	136
Correct <code>\skipnumbering</code> for stanza.	136
Delete <code>\skipnumbering@reg</code> .	136
General: <code>\AtEveryPstart</code> and <code>\AtEveryPend</code> are now compatible with <code>\autopar</code>	1
<code>\Xafterrule</code> and <code>\afterruleX</code> features no longer create problems of overflowing at the bottom of the page.	1
<code>\chapter</code> inside optional argument of <code>\pstart</code> works when typesetting parallel pages	1
<code>\preXnotes</code> and <code>\prenotesX</code> features no longer create problems of overflowing at the bottom of the page.	1
<code>\seriesatbegin</code> and <code>\seriesatbegin</code> more efficient	274
Add <code>\applabel</code> and related	65
Add <code>\beforenotesX</code> and <code>\Xbeforenotes</code> features for notes set in two and three column.	1
Add <code>\hidenumbering</code>	24
Add <code>\Xcolalign</code> and <code>\colalignX</code> hooks	53
Add <code>\Xendtwolines</code> , <code>\Xendmorethantwolines</code> , <code>\Xendtwolinesbutnotmore</code> and <code>\Xendtwolinesonlyinsamepage</code> .	47
Add <code>\Xparindent</code> and <code>\hangindentX</code>	52
Add <code>\Xtwolinesbutnotmore</code> and <code>\Xtwolinesonlyinsamepage</code> .	1
Add <code>nocritical</code> , <code>noend</code> , <code>nofamiliar</code> and <code>noledgroup</code> options.	1
Add <code>noeledsec</code> package option	1
Debug <code>\beforenotesX</code> <code>\maxhnotesX</code> <code>\noteswidthliketwocolumnsX</code> and <code>\afterruleX</code> with footnotes set in two and three columns.	1
Fix a bug when a <code>\Xfootnote</code> follows a <code>\Xendnote</code> in the second argument of <code>\edtext</code> (bug added in <code>eledmac 1.0.0</code>).	1
Fix a bug with <code>\maxhnotesX</code> when using <code>\foottwocolX</code> or <code>\footthreecolX</code> .	1
Fix a bug with space between columns with notes in two columns (bug added in v1.13.0).	1

Fix spurious space after first page number in <code>\doendnotes</code> . <code>oldprintnpnumspace</code> option allows to come back to previous setting	1
<code>parapparatus</code> option works now with familiar footnotes.	1
Provide <code>\@gobblefive</code>	93
v1.22.0.	
<code>\ledinnote</code> : <code>\ledinnote</code> takes a first optional argument, which is the label for hyperlinks.	325
General: Add <code>\doendnotesbysection</code> command.	31
Add option for lemma separator inside endnotes	50
Adds hyperlink for references to notes in indices.	1
Fix conflict between <code>noend</code> package option and <code>edtabularx</code> environments	1
Provides support for <code>xindy</code> .	1
Standardize endnotes handbook.	31
When using <code>hyperref</code> package, internal links in index or with <code>\edlineref</code> are now targeted to the top and not longer to the bottom of the lines they refer to.	1
v1.22.1.	
<code>\prevpage@num</code> : Correct double symbol when using both <code>\parafootsep</code> and <code>\Xsymlinenum</code> .	199
General: Fix a bug (added on v1.22.0) with <code>\Xinplaceofnumber</code> hook.	1
v1.23.0.	
<code>\@edtext@level</code> : The boolean <code>\if@edtext@</code> becomes the counter <code>\edtext@level</code> .	139
<code>\Serefwithpage</code> : Debug <code>\Xendtwolines</code> , <code>\Xendmorethantwolines</code> , <code>\Xendtwolinesbutnotmore</code> and <code>\Xendtwolinesonlyinsamepage</code> when using <code>\apprefwithpage</code> .	306
<code>\lemma</code> : Fix spurious space after <code>\lemma</code> command	145
<code>\newseries@</code> : Prevent spurious spaces when <code>\Afootnote</code> and similar commands are followed by spaces (bug added on 1.0.0).	264
<code>\sameword</code> : In order to allow use of <code>\sameword</code> with <code>inputenc</code> , we detokenize its mandatory argument before using it in control sequence names.	150
General: Add <code>\Xboxlinenumalign</code> and <code>\Xendboxlinenumalign</code> .	49
Add <code>\Xboxstartlinenum</code> , <code>\Xendboxstartlinenum</code> , <code>\Xboxendlinenum</code> , <code>\Xendboxendlinenum</code> .	49
Allow use of <code>\sameword</code> with <code>inputenc</code> managing of UTF-8.	1
Compatibility between <code>nofamiliar/nocriticals</code> option and <code>minipage/ledgroup</code> .	1
Error message when using <code>\beginnumbering... \endnumbering</code> without <code>\pstart</code> .	1
Fix a bug with <code>\sameword</code> when the lemma overlaps multiple line.	33
Fix a bug with <code>\sameword</code> when the same lemma is used for multiple notes or for nested <code>\edtexts</code> .	33
Fix a bug with <code>\skipnumbering</code> called immediately after a <code>\pstart</code> .	1
Fix error of <code>\iftrue</code> not closed.	1
Fix spurious space with <code>\skipnumbering</code> (bug added on v1.21.0).	1
New tools to ensure the line-list file uses the right version of commands when upgrading the <code>eledmac</code> version.	1
Optional argument of <code>\sameword</code> can be a comma-separated list of <code>\edtext</code> depth.	33
v1.23.1.	
General: Fix a bug with <code>\lemma</code> command in the right side.	1
v1.23.2.	
General: Compatibility with \LaTeX 's release 2015.	1

v1.24.0.	
General: We can reinitialize <code>\AtEveryPstart</code> and <code>\AtEveryPend</code> providing to it an empty argument.	1
v1.24.1.	
General: <code>\lemma</code> is disabled when using ‘ <code>nocritical</code> ’ option.	1
v1.24.2.	
General: Fix incompatibility between ‘ <code>nofamiliar</code> ’ option and ‘ <code>memoir</code> ’ package.	1
v1.24.3.	
General: Restore marginal numbers and notes with sectioning command (bug introduced in v1.21.0)	1
v1.24.4.	
General: Fix spurious space with <code>\edindex</code> when using <code>xindy+hyperref</code> option.	1
v1.24.5.	
General: Fix a bug of indent, when a added in 1.1.0, when a <code>\beginnumbering</code> immediately follow a sectioning command.	1
v2.0.0.	
<code>\@iiiminipage</code> : Patch <code>\@iiiminipage</code> instead of redefining it.	319
<code>\@xympar</code> : Patching <code>\@xympar</code> instead of redefining it	309
<code>\endminipage</code> : Patch <code>\endminipage</code> instead of redefining it.	320
<code>\initnumbering@quote</code> : <code>\initnumbering@sectcmd</code> becomes <code>\initnumbering@quote</code>	374
<code>\l@advance@parledgroup@beforenormalnotes</code> : Some conde of <code>\l@dumboxmpfoot</code> moved to <code>\l@advance@parledegroupp@beforenormalnotes</code>	320
<code>\newseries@</code> : One endnotes file by series.	270
General: <code>\@makecol</code> , <code>\@reinserts</code> and <code>\@doclearpage</code> are patched instead of begin redefined	288
<code>\doxtrafeeti</code> becomes <code>\Xdo@feet</code> ; <code>\doxtrafeetii</code> becomes <code>\do@Xfeet</code> ; <code>\@opxtrafeeti</code> becomes <code>\@opfeetX</code> ; <code>\doreinxtrafeetii</code> becomes <code>\X@doreinfeet</code> ; <code>\doreinxtrafeeti</code> becomes <code>\@doreinfeetX</code>	288
Add <code>\Xendinplaceofnumber</code> hook.	1
Add <code>\Xendnonumber</code> hook.	1
Add <code>nonum</code> option for endnotes.	1
Fix a bug when printing only one series of endnotes, but wanted to keep endnotes for other series.	1
In order to have a more consistent name’s convention, many names has been changed.	1
Many \TeX ’s output macros are now patched and not override.	1
Package’s name becomes <code>reledmac</code>	1
Patch <code>\@footnotemark</code> instead of redefine it	223
Suppress indexing command specific to <code>memoir</code>	326
v2.0.1.	
General: Fix a bug in <code>eledmac-compat</code> option	1
Fix incompatibility between optional argument of <code>\pstart</code> and <code>\numberpstarttrue</code>	1
v2.1.0.	
General: Fix a bug with <code>\advanceline</code> at the beginning of a <code>\pstart</code>	1
Fix a bug with <code>\chapter</code> in optional argument of <code>\pstart</code> in parallel typesetting with <code>scrbook</code>	1
Fix a bug with <code>\eledchapter</code> in parallel typesetting with <code>scrbook</code>	1
Fix a bug with <code>\setline</code> at the beginning of a <code>\pstart</code>	1
Fix spacing bug with <code>\Xhooknote</code> and <code>\hooknoteX</code> when using them to insert text and not to execute code.	1

New tools to number stanzas	1
v2.1.1.	
General: Fix a bug with <code>\ledpbsetting{before}</code>	1
v2.1.2.	
General: Fix a bug with lineation by <code>pstart</code> and <code>tabular</code> environments (added in 2.1.0).	1
v2.1.3.	
<code>\ledsetnormalparstuffX</code> : Replaced <code>\noindent</code> with <code>\parindent</code> set to 0pt.	242
General: <code>\Xhangindent</code> and <code>\hangindentX</code> work now with all the paragraphs in the note.	1
<code>\Xnoindent</code> and <code>\noindentX</code> work now again (broken in 2.0.0).	1
Change some internal code in order to provide compatibility with \TeX release of october 2015	1
Fix a bug which inserted double space before paragraphed familiar notes.	1
Fix a bug with <code>\edindex</code> when using not-Latin characters without UTF-8 engines	1
v2.2.0.	
General: Fix a bug with combination of <code>\onehalfspacing</code> and two columns and three columns notes typeset.	1
Fix a bug with some setting command and optimization option.	1
Fix spurious space with paragraphed critical notes when using $\text{Lua}\TeX$	1
Increase line list version number to ensure compatibility with new options of <code>reledpar</code> package.	1
New setting tools for endnotes: <code>\Xendnumberonlyfirstinline</code> , <code>\Xendnumberonlyfirstintwolines</code> , <code>\Xendsymmlinenumber</code> , <code>\Xendbeforenumber</code> , <code>\Xendafternumber</code> , <code>\Xendbeforemsymmlinenumber</code> , <code>\Xendaftersymmlinenumber</code> , <code>\Xendboxsymmlinenumber</code> , <code>\Xendhangindent</code> , <code>\Xendbhooklinenumber</code> , <code>\Xendahooklinenumber</code> , <code>\Xendbhookinplaceofnumber</code> , <code>\Xendahookinplaceofnumber</code>	1
v2.2.1.	
General: Compatibility with TeXformat 2015/10/01.	1
v2.2.2.	
General: Fix a bug in <code>\sethangingsymbol</code>	1
Fix a bug with old version of <code>etex</code>	1
v2.3.0.	
General: Disable empty lines as paragraph in stanza.	1
Fix incompatibility of paragraphed footnotes with <code>bidi</code> v17.9 and following.	1
Warning message when using some setting commands inside <code>rightside</code> environment (deprecated behavior)	1
v2.3.1.	
General: Fix spurious space when using optional argument of <code>\stanza</code> (introduced in v2.3.0).	1
v2.4.0.	
<code>\footnoteoptions@</code> : First argument of <code>\footnoteoption@</code> is now mandatory, not optional.	184
General: <code>\Xbhooknote</code> and <code>\bhooknoteX</code> work with notes in columns.	1
Fix a bug of <code>\parindentX</code> and <code>\Xparindent</code> with two columns and three columns notes.	1
Fix a bug with <code>\sameword</code> in right side.	1
Fix spurious space in two columns and three columns notes.	1
Fix spurious space when using optional argument of <code>stanza</code> (introduced in v2.3.0).	1
New hooks: <code>\Xlinerangeseparator</code> and <code>\Xendlinerangeseparator</code>	46

Option <code>linrangesep</code> for critical footnotes and endnotes.	46
v2.4.1.	
General: Fix a bug with <code>\appref</code> and <code>\apprefwithpage</code> (introduced in v2.4.0).	1
Fix a bug with tabular environments when using <code>babel</code> or <code>polyglossia</code> languages that override \TeX <code>\roman</code> command, like Greek language.	1
Fix a bug with tabular environments when using <code>babel</code> or <code>polyglossia</code> languages that override \TeX <code>\roman</code> command, like Greek.	1
v2.5.0.	
<code>\SErefwithpage</code> : Debug <code>\setapprefprefixsingle</code>	305
<code>\edlabel</code> : Fix a bug when calling <code>\edlabel</code> in a footnotes of the right side	293
<code>\l@d@section</code> : <code>\endnotes</code> take six arguments.	248
<code>\printlines</code> : <code>\printlines</code> takes an eighth argument: the line flag	219
<code>\xlineref</code> : <code>\xlineref</code> does not include anymore the side flag. Use <code>\xflagref</code> to get it. Not that <code>\edlineref</code> still contains the flag.	299
General: <code>\apprefwithpage</code> and <code>\appref</code> print double quotation mark when the label was not defined.	1
<code>\apprefwithpage</code> and <code>\appref</code> work with right side crossref.	1
<code>\apprefwithpage</code> works also when <code>noend</code> option is enabled.	1
<code>\appref</code> and <code>\apprefwithpage</code> can take <code>linrangesep</code> optional argument.	1
<code>\edlabel</code> works now in <code>\Xfootnote</code>	1
<code>\lemma</code> can be used even when the <code>nocritical</code> is enabled.	1
Compatibility with new hook and tools of <code>reledpar</code> 2.6.0.	1
Fix spurious vertical space in <code>astanza</code> environment (<code>reledpar</code>)	1
Log now states ‘There were undefined references’ when using wrong references in <code>\edlineref</code> or <code>edpageref</code>	1
New hooks to customize page and line number appearance in endnotes.	1
New hooks: <code>\Xhookgroup</code> and <code>\bhookgroupX</code>	1
New tools to easily make cross-reference to a passage defined by a start and an end line	64
v2.6.0.	
General: Adds compatibility with <code>innnote</code> and <code>notenumber</code> options of <code>indextools</code> package.	1
Fix a bug with footnote counter in <code>ledgroup</code> (added in v2.5.0).	1
Fix bug, introduced in v2.5.0, with footnote numbering in parallel typesetting when using <code>perpage</code> package.	1
v2.7.0.	
<code>\@k</code> : <code>\rigidbalance</code> is split in <code>\Xrigidbalance</code> and <code>\rigidbalanceX</code>	200
<code>\l@d@section</code> : <code>\endnotes</code> take seven arguments.	248
General: Add dash as default page range separator for <code>\SEonlypage</code>	1
Debug <code>\SErefonlypage</code> when referring to only one page.	1
Delete parenthesis after <code>\SErefonlypage</code>	1
Fix (again) bugs with footnote numbering in parallel typesetting while using <code>ledgroup</code> environments (bug added in v2.5.0).	1
Fix a bug with <code>\SErefwithpage</code>	1
Fix bugs in compatibility with <code>innnote</code> and <code>notenumber</code> options of <code>indextools</code> package, when indexing outside of a <code>ledgroup</code>	1
New commands to make glossaries connected to page and linenumber with the <code>glossaries</code> package	1
New hooks: <code>\Xhsize</code> and <code>\hsizeX</code>	56
New hooks: <code>\Xlemmafont</code> and <code>\Xendlemmafont</code>	51

New setting commands: <code>\setSErefonlypageprefixsingle</code> and <code>\setSErefonlypageprefixmore</code>	1
Warning for duplicate and undefined labels are parsable by latexmk	1
Warning for duplicate labels does not send any more a false line and page number . . .	1
When using <code>hyperref</code> package, add link in familiar footnotes between the footnote marks in the text and the footnote marks in the footnote	1
When using <code>hyperref</code> package, add links for <code>\SEref</code> and <code>related</code> , <code>\appref</code> and <code>related</code>	1
When using <code>hyperref</code> package, add links from critical footnotes and critical endnotes to the line of text they refers	1
v2.7.1.	
General: Debug <code>\Xhookgroup</code> hooks executed on columnar footnotes (moved to a larger group, to take effect).	1
v2.7.2.	
General: <code>\Xhsize</code> and <code>\hsizeX</code> become <code>\Xwidth</code> and <code>\widthX</code>	56
Fix problem of hyphenation when using <code>hyperref</code> package (added in v2.7.0).	1
v2.8.0.	
<code>\l@d@section</code> : <code>\Xendhangindent</code> and <code>\Xendafternote</code> can take values which are relative to the font size of the endnote.	248
General: <code>reledmac</code> cross-referencing can take advantage of <code>xr</code> package.	1
More <code>\edgls</code> ... commands.	1
No indentation for paragraphed notes in <code>ledgroup</code> . Can be changed with <code>\Xparindent</code> and <code>\parindentX</code>	1
v2.8.1.	
General: Warnings for undefined labels are really parsable by latexmk	1
v2.8.2.	
General: Fix a bug concerning indent in a paragraph immediately following a sectioning command (bug NOT fixed on <code>reledpar</code>)	1
Fix a bug with <code>\AtEveryPstart</code> added in version 2.0.0.	1
Fix a bug with vertical space after the between-sectioning command as optional argument of a <code>\pstart</code> and <code>\pstart</code> content	1
v2.9.0.	
General: Allow continuing line numbering between normal text and parallel text, using <code>\pausenumbering</code> and <code>\resumenumbering</code> and the <code>continuousnumberingwithcolumns</code> option.	1
Fix a bug when using <code>\lineneation{page}</code> and <code>\pausenumbering</code> ... <code>\resumenumbering</code>	1
Fix a bug with three- and two-column footnote setting (added in v2.4.0).	1
Fix spurious space inside three-column familiar footnote.	1
Write correct metadata in numbered files when using <code>\pausenumbering</code> ... <code>\resumenumbering</code>	1
v2.9.1.	
General: Fix a bug when notes start with “plus” or “minus”.	1
v2.9.2.	
General: Fix a bug with <code>hyperref</code> package when a lemma starts with “plus” or “minus” (bug introduced in v. 2.7.0).	1
v2.9.3.	
General: Fix a bug with line number position and reset added by v. 2.9.0	1

v2.10.0.	
\print@lemma: Code refactoring between \parafootfmt, \twocolfootfmt, \threecolfootfmt and \normalfootfmt.	209
General: Add \AtEveryStanza and \AtEveryStopStanza.	1
Fix a bug in \ledlsnotefontsetup and \ledrsnotefontsetup which could not handle \color command properly.	1
More specific error messages.	1
New hooks: \Xwrapcontent, \Xendwrapcontent and \wrapcontentX.	52
New hooks: \Xwraplemma and \Xendwraplemma	51
v2.10.1.	
General: Add ‘nopenalties’ option.	1
Fix a bug introduced in v. 1.4: not paragraphed critical footnotes could prevent marginal line number from being displayed	1
v2.11.0.	
\do@actions@fixedcode: Add action 1010	168
General: Add new tools to produce an apparatus of manuscripts	1
Fix a bug in \Xparafootsep in parallel typesetting	1
Make \parafootsepX work	1
Prevent \Xtxtbeforenotes hook from causing notes to go beyond the bottom margin	1
v2.12.0.	
General: \preXnotes becomes \Xprenotes (naming convention)	1
Add \hidenumberingonleftpage and \hidenumberingonrightpage	1
Add \toendnotes and related.	1
Add auxdir option.	1
Fix a bug in critical and familiar footnotes when using uppercase letters with accent mark	1
Fix a bug when using \chapter in optional argument of \pstart in parallel typesetting in combination with the noeledsec option.	1
Fix a bug with \ledinnernote and \ledouternote in parallel typesetting	1
Fix a bug with familiar footnote number in optional argument of \pstart or \pend in parallel typesetting	1
Fix spurious vertical space in \chapter when used as optional argument of \pstart in parallel typesetting.	1
Make endnote compatible with \sameword mechanism	1
More accurate message to control the position of \Xfootnote and \applabel in the \LaTeX code	1
v2.13.0.	
General: Version 2.13.0 never existed.	1
v2.13.1.	
General: In critical footnotes, the right side flag is printed only if requested explicitly with \Xlineflag (bug added in v. 2.5.0).	1
v2.13.2.	
General: Fix a bug added in v. 11.2 which could make parallel typesetting not work.	1
v2.13.3.	
General: Makes \Xendafterpagenumbe affecting \Serefwithpage	1
v2.14.0.	
General: Hyperref with the line number inside critical footnotes is correct when using \xxref	1
Some internal changes for new features of reledpar.	1

v2.14.1.	
General: Fix a bug when using <code>\footnoteX</code> in the first argument of <code>\edtext</code> .	1
v2.14.1a.	
General: Fix problematic typos in the handbook.	1
v2.15.0.	
General: Add ‘byline’ arrangement.	1
Fix <code>\Xtxtbeforenotes</code> in <code>ledgroup</code> .	1
v2.15.1.	
General: Fix <code>\edindex</code> in tabular environments.	1
v2.15.2.	
General: Fix a bug with <code>fancyhdr</code> package 3.8 and later.	1
v2.15.3.	
General: Fix a bug with <code>\section</code> in optional argument of <code>\pstart</code> and empty line before <code>\pend</code> (bug added in v2.8.2).	1
Simplification of the sectioning command code.	1
v2.16.0.	
General: <code>\Xdo@feet</code> becomes <code>\do@Xfeet</code>	288
Add <code>\Xendpagenumberonlyfirst</code> , <code>\Xendpagenumberonlyfirstifsingle</code> , <code>\Xendpagenumberonlyfirstintwo</code> , <code>\Xendinplaceofpagenumber</code> and <code>\Xendsympagenum</code> hooks.	1
Add <code>\Xpagelinesep</code> hook.	48
Compatibility with new features of <code>reledpar</code>	1
Deleted dead code.	1
Display a warning message if using a version of \TeX that is too old.	1
Fix a bug with <code>\Xgroupbylines</code> for notes in two columns	1
Fix a bug with <code>\Xtxtbeforenotes</code> for notes in three or two columns	1
Fix a bug with ‘notenumber’ option of <code>indextools</code> package when indexing texts in familiar footnotes.	1
Fix potential bug when using <code>\edindex</code> in critical footnotes.	1
More explicit error message in case the stanza indentation is not defined.	288
New options for <code>\fnpos</code> and <code>\mpfnpos</code> to set a customized order for familiar and critical footnotes.	1
When <code>\edindex</code> is called outside of a <code>\beginnumbering... \endnumbering</code> structure, it is automatically switched to <code>\index</code> , with a warning message.	1
When indexing texts in familiar footnotes with <code>\edtext</code> , refer to the line number where the footnote is called.	1
When indexing texts in sidenotes with <code>\edtext</code> , refer to the line number where the sidenote is called.	1
v2.16.1.	
General: Fix a bug with redefinition of the style of the footnote number (bug added in v2.12.0)	1
v2.16.2.	
General: Error message if <code>footmisc</code> is loaded after <code>reledmac</code> .	1
Fix a bug introduced by v2.16.1 when using non-expandable control sequence, like <code>\normalfont</code> , in the footnote number style.	1
v2.16.3.	
General: Fix a bug with <code>\Seref</code> (bug added in v2.7.0).	1
v2.16.4.	
General: Fix a bug with vertical space before sectioning command in optional argument of <code>\pstart</code> (bug added in v2.15.3).	1

v2.16.5.	
General: Fix potential spurious spaces in endnotes.	1
v2.16.6.	
General: Fix a bug with the line number style in <code>\doennotes</code> when referring to right side line in parallel typesetting.	1
Take into account <code>\linenumberstyle</code> when using <code>\edlineref</code>	1
v2.16.7.	
General: Fix a bug with <code>\msdata</code> when using multiple <code>\beginnumbering...</code> <code>\endnumbering</code>	1
Fix a bug with <code>\numberpstarttrue</code> when using multiple <code>\beginnumbering...</code> <code>\endnumbering</code>	1
v2.16.8.	
General: Fix a bug with <code>\edindex</code> in footnotes in parallel typesetting.	1
v2.17.0.	
General: Add <code>\edglsadd</code> command.	1
Add <code>\setmsdataposition</code> setting.	1
v2.17.1.	
General: Fix spurious space in paragraphed footnotes when using <code>Lua\TeX</code> without using Right-To-Left text.	1
v2.17.2.	
General: Change log message when numbered files still don't exist, in order to improve compatibility with <code>latexmk</code>	1
v2.17.3.	
General: Fix a bug with <code>\doendnotesbysection</code> and <code>\doendnotes</code>	1
v2.17.4.	
General: Fix a bug with <code>\setSErefonlypageprefixsingle</code> and <code>\setSErefonlypageprefixmore</code>	1
v2.17.5.	
General: Fix a bug with <code>\pstartref</code> when referring to the left side in parallel typesetting.	1
v2.18.0.	
General: Fix a bug when using a <code>\edtext</code> in two lines or more in right-to-left typesetting with <code>X\TeX</code>	1
Fix a bug when using both <code>\Xnumberonlyfirstintwolines</code> or <code>\Xnumberonlyfirstinline</code> and <code>\Xparafootsep</code> and <code>\Xsymlinenum</code>	1
v2.18.1.	
General: Fix a bug when using <code>\msdata</code> with <code>Lua\TeX</code> or with the <code>hyperref</code> package.	1
v2.19.0.	
General: Add <code>\footnoteXmark</code> and <code>\footnoteXtext</code> commands.	1
Add better compatibility with the <code>csquotes</code> package when using familiar footnotes.	1
Fix a bug with paragraph indent after sectioning command.	1
v2.20.0.	
General: Add <code>\AtStartEveryStanza</code> , <code>\BeforeEveryStopStanza</code> , <code>\AtEndEveryPend</code> , <code>\AtStartEveryPstart</code>	1
Add second optional argument to <code>\pstart</code> , <code>\pend</code> and <code>\stanza</code>	1
Add starred version of <code>\AtEveryPstart</code> , <code>\AtEveryPend</code> , <code>\AtEveryStanza</code> and <code>\AtEveryStopStanza</code>	1
Add third and fourth optional argument to <code>\newverse</code>	1
Fix a bug when using familiar footnotes in <code>\eledsection</code> and related.	1
Reset font specification at the beginning of familiar footnotes.	1

v2.21.0.	
General: Add the possibility of nested <code>\sameword</code> commands.	1
Fix a bug when using formatting command in the argument of <code>\edindex</code> inside <code>\edtext</code> .	1
Now, as explained in the handbook, a <code>\edindex</code> inside <code>\edtext</code> only creates an index reference to the main text, and not to the critical footnote.	1
v2.22.0.	
General: Add <code>\txtbeforenotesonlyonceX</code> and <code>\Xtxtbeforenotesonlyonce</code> hooks.	1
Add <code>\txtbeforenotesX</code> hook.	1
Fix a bug added in v2.16.0 when using <code>\Xtxtbeforenotes</code> with paragraphed or normal footnotes.	1
Fix a bug with three and two columns critical footnotes, broken in v. 2.17.6.	1
v2.22.1.	
General: Compatibility with new version of <code>reledpar</code> .	1
Fix a bug with some commands inside <code>\sameword</code> .	1
v2.22.2.	
General: Do not print footnotes at the first run.	1
v2.23.0.	
General: Add <code>swcaseinsensitive</code> option	1
Optimisation of the code added on v2.22.2 to not print footnotes at the first run.	1
v2.24.0.	
<code>\next@line@list@stuff</code> : Add <code>\next@line@list@stuff</code> internal hook.	129
General: Add <code>\swnoexpands</code> macro to avoid problems with not fully expandable macro inside <code>\sameword</code> .	1
Fix a bug with <code>\edlabel</code> at the beginning of a <code>\pstart</code> .	1
Fix spurious space with <code>\labelpstarttrue</code>	1
When a <code>\setlinenum</code> is used, it is stronger than the <code>\lineation{page}</code> setting.	1
v2.24.1.	
General: Compatibility with <code>reledpar 2.20.2</code>	1
v2.24.2.	
General: Fix bug between tabular environments and endnotes	1
v2.25.0.	
General: Add <code>\Xendtxtbeforenotes</code> hook	1
v2.26.0.	
General: Add a mechanism for annotation of stanza line numbering	1
Fix bug in <code>\xpstartref</code>	1
v2.26.1.	
General: Fix bug with <code>\linenumannotation</code>	1
v2.26.10.	
General: Add error message when insertion a <code>\pstart</code> or <code>\pend</code> inside <code>\edtext</code> arguments	1
Really fix bug with page number in footnote after <code>\mainmatter</code> (bug introduced in v2.26.7)	1
v2.26.11.	
General: Allow to use <code>\edtext</code> inside <code>\sameword</code>	1
v2.26.12.	
General: Precise minimal version of <code>xparse</code> package required.	1
v2.26.2.	
General: Fix bug with <code>\linenumannotation</code> in parallel typesetting	1
Fix bug with <code>\Xgroupbyline</code> and <code>\Xparafootsep</code> .	1

Fix bug with <code>\Xgroupbyline</code> and optional argument of critical footnotes.	1
Fix bug with <code>\Xgroupbyline</code> for the series after the first one.	1
v2.26.3.	
General: Fix bug added by v2.26.0 with notes in parallel typesetting	1
v2.26.4.	
General: Fix bug when using <code>\numberpstarttrue</code> and alternating between manual <code>\pstart</code> and automatic <code>\pstart</code> produced by <code>\autopar</code>	1
v2.26.5.	
General: Check that users have a enough recent version of <code>xparse</code>	1
Fix bug when using <code>\eledsection</code> with the <code>continuousnumberingwithcolumns</code> of <code>reledpar</code>	1
Fix bug with <code>continuousnumberingwithcolumns</code>	1
Fix bug with using <code>\eledsection</code> and related when alternate normal typesetting and parallel typesetting	1
v2.26.6.	
General: Fix bug with <code>\lineation</code> by page and nexted <code>\edtext</code> between two pages (added in v. 2.24.0)	1
v2.26.7.	
General: Fix page number in footnote and endnotes when using <code>sameparallelpagenumber</code> option of <code>reledpar</code> and typesetting critical text in single mode after critical text in double page mode	1
v2.26.8.	
General: Fix bug in some specific cases, introduced by v.2.27.7	1
v2.26.9.	
General: Fix bug with critical footnotes line number when alternating between <code>\numberlinefalse</code> and <code>\numberlinetrue</code>	1
Fix bug with page number in footnote after <code>\mainmatter</code> (bug introduced in v2.26.7)	1
Workaround with a bug of L ^A T _E X 2018/04/01 patch level 3 to generate the .sty file from a .ins file	1
v2.27.0.	
General: Add <code>\doinsidethislinehook</code>	1
v2.27.1.	
General: Fix spurious space in <code>\hidenumbering</code>	1
v2.28.0.	
General: Familiar footnotes can take an optional argument to manually define the footnote mark.	1
v2.28.1.	
General: Fix bug with the alignment of the columns of two and three columns critical footnotes.	1
v2.29.0.	
General: Add <code>noresetlinenumannotation</code>	1
Fix bug with <code>\linenumannotation</code> and ‘ <code>nofamiliar</code> ’ option.	1
Fix little bug with <code>\msdata</code>	1
Really reset line number annotation at each line	1
v2.30.0.	
General: Add <code>\Xnoidenticallylinenumannotation</code> and <code>\Xendnoidenticallylinenumannotation</code> hooks	1
Add separator between line number annotations in margin. Add <code>\setlinenumannotationsep</code>	1

v2.31.0.	
General: Add <code>noprefix</code> and <code>prefixmore</code> to <code>\appref</code> and <code>\SEref</code> .	1
v2.31.1.	
General: Fix bug in vertical spacing with <code>\Xgroupbyline</code> .	1
Fix bug with <code>\Xgroupbyline</code> , which could produce spurious blank lines.	1
Fix bug with <code>\Xhangindent</code> and <code>\hangindentX</code> for right-to-left texts.	1
Fix bug with indentation with <code>\Xgroupbyline</code> .	1
Fix bug with multiple footnote layer and <code>\Xgroupbyline</code> .	1
Fix incompatibility between <code>\Xgroupbyline</code> and <code>hyperref</code> package.	1
Fix incompatibility between <code>\Xgroupbyline</code> and optional argument of critical footnotes.	1
v2.31.2.	
General: Fix bug with familiar footnote containing non-default font (introduced with v. 2.20.0).	1
v2.31.3.	
General: Fix bug with paragraphed footnote in RTL context.	1
v2.32.0.	
General: Add <code>\Xlinenumannotationonlyfirst</code> , <code>\Xlinenumannotationonlyfirstintwo</code> , <code>\Xsymlinenumannotation</code> , <code>\Xendlinenumannotationonlyfirst</code> , <code>\Xendlinenumannotationonlyfirstintwo</code> and <code>\Xendsymlinenumannotation</code> .	1
v2.32.1.	
General: Do not print <code>\Xendsep</code> if we print <code>\Xendsymlinenum</code> .	1
When using <code>\parindentX</code> or <code>\Xparindent</code> and stanza, use the normal indentation in the footnote, not the verse indentation.	1
v2.32.2.	
General: Fix spurious vertical space in familiar footnotes with Lua \TeX .	1
v2.32.3.	
General: Fix bug with critical footnotes when typesetting Arabic text with <code>polyglossia</code> .	1
v2.32.4.	
General: <code>\footnoteXmark</code> and <code>\footnoteXtext</code> can now have an optional argument, setting the footnote number.	1
Fix bug <code>\footnoteXmark</code> and <code>\footnoteXtext</code> .	1
Fix bug when using <code>\Xgroupbyline</code> and twocol arrangement.	1
Fix bug with three and two columns footnotes when using <code>bid</code> .	1
v2.32.5.	
General: Fix bug with <code>\edindex</code> inside <code>\eledsection</code> and related.	1
Fix bug with macro inside <code>\sameword</code> with no- $\mathcal{X}\TeX$ engines.	1
Fix bug with page number in index with <code>\edindex</code> when indexing a critical notes.	1
v2.32.6.	
General: Add <code>hyperref</code> link when inserting glossary entries.	1
Fix bug with glossary entries inside the first argument of <code>\edtext</code> .	1
v2.32.7.	
General: Fix bug with <code>\lineation{pstart}</code> and <code>\edtext</code> in the very first line of a <code>\pstart</code> .	1
Fix bug with <code>\parafootsepX</code> .	1
Fix spurious spaces at the very first line of <code>edtabular</code> environments.	1
v2.32.8.	
General: Add subline number in manuscript apparatus.	1