

termsim:终端窗口模拟宏包

termsim:terminal simulation package

耿楠

nangeng@nwafu.edu.cn

2021/12/14 v1.0.0^{*}

简介

termsim 是一个基于 tcolorbox 宏包, 用 L^AT_EX3 开发的 L^AT_EX 宏包, 它提供了用于模拟 Win10、Ubuntu 和 Mac 的终端窗口的 terminal 环境和\termfile命令, terminal 环境将环境中的内容在模拟的终端窗口中输出, 而\termfile命令用于将指定的文件读入后在模拟的终端窗口中输出。同时提供了 terminal* 环境和\termfile*命令, 用于模拟带底线注释的终端窗口。操作系统类型和终端窗口颜色主题等样式, 可以通过\termset命令或 terminal(terminal*) 环境和 \termfile(\termfile*) 命令的可选项进行设置。

目录

第 1 节 简要说明	1	3.6 底线注释格式	4
第 2 节 用户接口	2	3.7 代码行距	4
2.1 terminal 和 terminal* 环境	2	第 4 节 排版样例	5
2.2 \termfile 和\termfile* 命令	2	4.1 Win10 终端窗口	5
2.3 \termset 命令	3	4.2 Mac 终端窗口	7
第 3 节 选项说明	3	4.3 Ubuntu 终端窗口	8
3.1 代码引擎	3	第 5 节 代码实现	10
3.2 操作系统	3	版本历史	21
3.3 颜色主题	3	代码索引	21
3.4 代码样式	4		
3.5 代码字号	4		

第 1 节 简要说明

termsim 是一个用于模拟 Win10、Ubuntu 和 Mac 终端窗口的 L^AT_EX 宏包, 用于实现对 Win10、Mac 或 Ubuntu 终端窗口的模拟排版。

^{*}<https://github.com/register/termsim>

[†]https://gitee.com/nwafu_nan/termsim

第2节 用户接口

2.1 terminal 和 terminal* 环境

```
terminal      \begin{terminal} [外观选项] {窗口标题}
terminal*     .....
              \end{terminal}
              \begin{terminal*} [外观选项] [底线注释] {窗口标题}
              .....
              \end{terminal*}
```

New: 2021-12-17
Updated: 2021-12-17

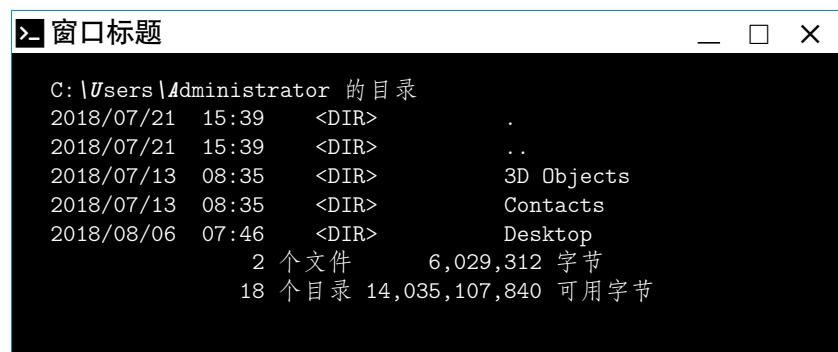
排版终端窗口,内容来自于由环境内容,可以通过 {窗口标题} 为窗口设置标题。

[外观选项] 中通过 key-value 方式设置终端窗口的外观。

星号环境 terminal* 用于为终端窗口添加底线注释,注意此时需要在 [外观选项] 后提供 [底线注释] 内容。

终端窗口的外观也可以通过\termset命令的逗号分隔 key-value 列表进行设置。

```
1 \centering
2 \termset{os=win10,theme=dark,shstretch=1.0}
3 \begin{terminal}{窗口标题}
4   C:\Users\Administrator 的目录
5   2018/07/21  15:39    <DIR>          .
6   2018/07/21  15:39    <DIR>          ..
7   2018/07/13   08:35    <DIR>          3D Objects
8   2018/07/13   08:35    <DIR>          Contacts
9   2018/08/06   07:46    <DIR>          Desktop
10                                2 个文件      6,029,312 字节
11                                18 个目录  14,035,107,840 可用字节
12 \end{terminal}
```



2.2 \termfile和\termfile*命令

```
\termfile     \termfile [外观选项] {窗口标题} {内容文件}
\termfile*    \termfile* [外观选项] [底线注释] {窗口标题} {内容文件}
```

New: 2021-12-18
Updated: 2021-12-18

排版终端窗口,内容来自于由 {内容文件},可以通过 {窗口标题} 为窗口设置标题。

[外观选项] 中通过 key-value 方式设置终端窗口的外观。

星号命令\termfile*用于为终端窗口添加底线注释,注意此时需要在 [外观选项] 后提供 [底线注释] 内容。

排版样式也可以通过\termset命令的逗号分隔的 key-value 列表进行设置。

```
1 \centering
2 \termfile{窗口标题}{test.bat}
```



2.3 \termset命令

`\termset`

New: 2021-12-18
Updated: 2021-12-18

`\termset` {(键值列表)}

`\termset` 的参数是一组由 (英文) 逗号分隔的选项列表, 列表中的选项采用 `<key>=<value>` 形式。部分选项的 `<value>` 可以省略。对于同一选项, 后续设置会覆盖以前的设置。

多数选项都设有默认值。

`\termset` 采用 `LaTeX3` 风格的键值设置, 支持不同类型以及多种层次的选项设定。键值列表中, “=” 左右的空格不影响设置; 但需注意, 参数列表中 **不可以出现空行**。

布尔型的参数 `<选项>=true` 中的 “= true” 可以省略。

第 3 节 选项说明

`termsim` 宏包提供了一系列选项, 以设置终端窗口外观样式。载入 `termsim` 宏包后, 以下选项均可通过用户接口命令 `\termset` 进行设置。同时, 这些选项也可以通过 `terminal(terminal*)` 环境或 `\termfile(\termfile*)` 命令的 [`<外观选项>`] 进行设置。

3.1 代码引擎

`minted`

New: 2021-12-18
Updated: 2021-12-18

`minted = <true|false>`

初始值 = **true**

`minted` 用于设置代码排版引擎, 如为 **true** 则使用 `minted` 宏包排版终端窗口中的内容, 如为 **false** 则使用 `listings` 宏包排版终端窗口中的内容。默认值为 **true**。

3.2 操作系统

`os`

New: 2021-12-18
Updated: 2021-12-18

`os = <win10|mac|ubuntu>`

初始值 = **win10**

`os` 用于设置终端窗口的操作系统类型, 默认值为 **win10**。

3.3 颜色主题

`theme`

New: 2021-12-18
Updated: 2021-12-18

`theme = <dark|light|white>`

初始值 = **dark**

`theme` 用于设置终端窗口的颜色主题, 默认值为 **dark**。

3.4 代码样式

shstyle

New: 2021-12-18
Updated: 2021-12-18

shstyle = {<代码样式>}

初始值 = **bw**

shstyle 用于设置终端窗口内容 (代码) 的样式, 仅对 **minted** 引擎有效, 默认值为 **bw**。

3.5 代码字号

shsize

New: 2021-12-18
Updated: 2021-12-18

shsize = {<字号命令>}

初始值 = **\small**

shsize 用于设置终端窗口内容 (代码) 的字号, 仅对 **minted** 引擎有效, 默认值为 **\small**。

3.6 底线注释格式

commentf

New: 2021-12-18
Updated: 2021-12-18

commentf = {<格式命令组>}

初始值 = **\small\sffamily**

commentf 用于设置终端窗口底线注释的格式, 默认值为 **\small\sffamily**。

3.7 代码行距

shstretch

New: 2021-12-18
Updated: 2021-12-18

shstretch = {<浮点数>}

初始值 = **1.0**

shstretch 用于设置终端窗口内容 (代码) 的行距, 仅对 **minted** 引擎有效, 取浮点数。默认值为 **1.0**。

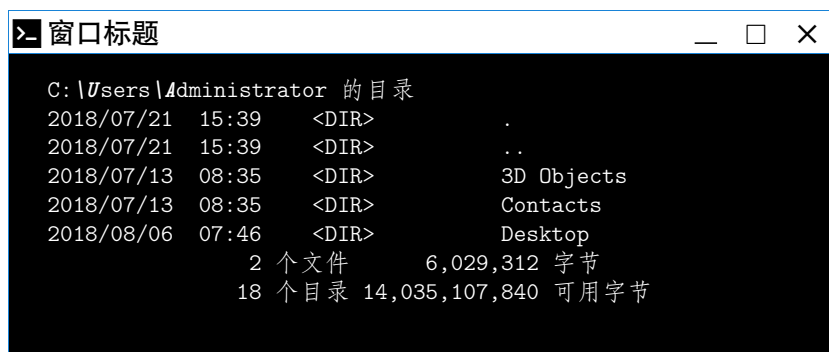
第4节 排版样例

termset 宏包可用于需要排版操作系统终端窗口的场合,以避免使用截图。终端窗口可以带/不带底线注释,也可以是暗色 (dark)、亮色 (light) 或白色 (white) 颜色主题。

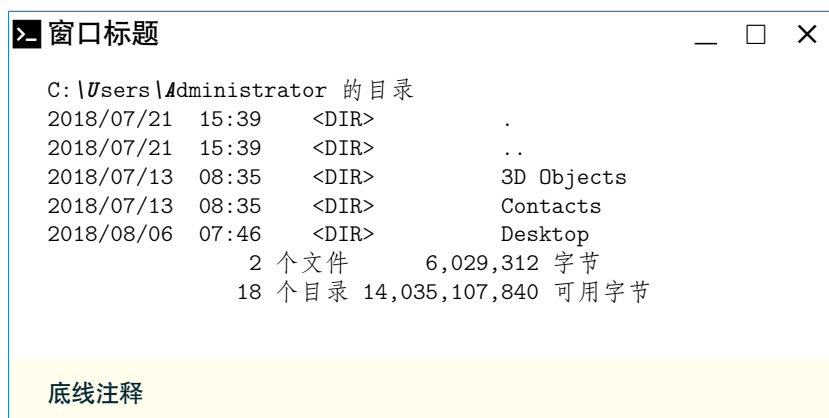
4.1 Win10 终端窗口

4.1.1 terminal/terminal* 环境

```
1 \centering
2 \termset{os=win10,theme=dark,shstretch=1.0}
3 \begin{terminal}[窗口标题]
4 C:\Users\Administrator 的目录
5 2018/07/21 15:39 <DIR> .
6 2018/07/21 15:39 <DIR> ..
7 2018/07/13 08:35 <DIR> 3D Objects
8 2018/07/13 08:35 <DIR> Contacts
9 2018/08/06 07:46 <DIR> Desktop
10 2 个文件 6,029,312 字节
11 18 个目录 14,035,107,840 可用字节
12 \end{terminal}
```

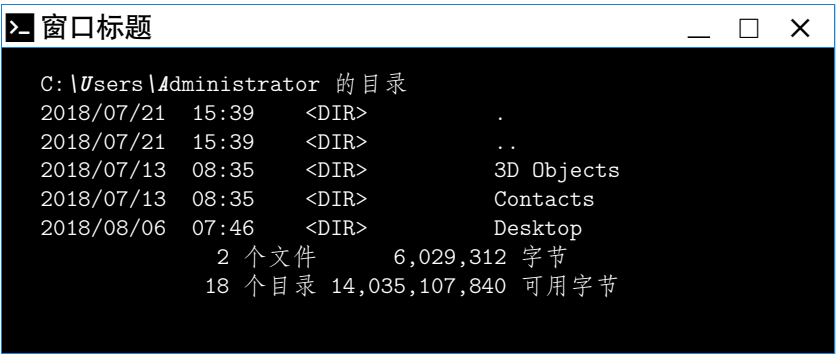


```
1 \centering
2 \begin{terminal*}[os=win10,theme=light][底线注释][窗口标题]
3 C:\Users\Administrator 的目录
4 2018/07/21 15:39 <DIR> .
5 2018/07/21 15:39 <DIR> ..
6 2018/07/13 08:35 <DIR> 3D Objects
7 2018/07/13 08:35 <DIR> Contacts
8 2018/08/06 07:46 <DIR> Desktop
9 2 个文件 6,029,312 字节
10 18 个目录 14,035,107,840 可用字节
11 \end{terminal*}
```



4.1.2 \termfile/\termfile*命令

```
1 \centering
2 \termset{os=win10,theme=dark}
3 \termfile{窗口标题}{test.bat}
```



```
1 \centering
2 \termfile*[os=win10,theme=light][底线注释]{窗口标题}{test.bat}
```



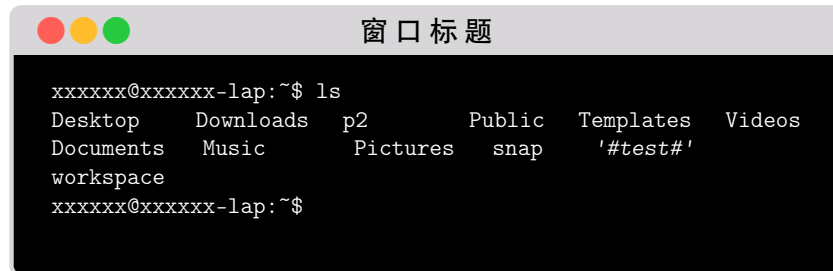
4.2 Mac 终端窗口

4.2.1 terminal/terminal* 环境

```

1 \centering
2 \termset{os=mac,theme=dark}
3 \begin{terminal}{窗口标题}
4   xxxxxx@xxxxxx-lap:~$ ls
5   Desktop    Downloads    p2          Public    Templates  Videos
6   Documents  Music       Pictures    snap      '#test#'   workspace
7   xxxxxx@xxxxxx-lap:~$
8 \end{terminal}

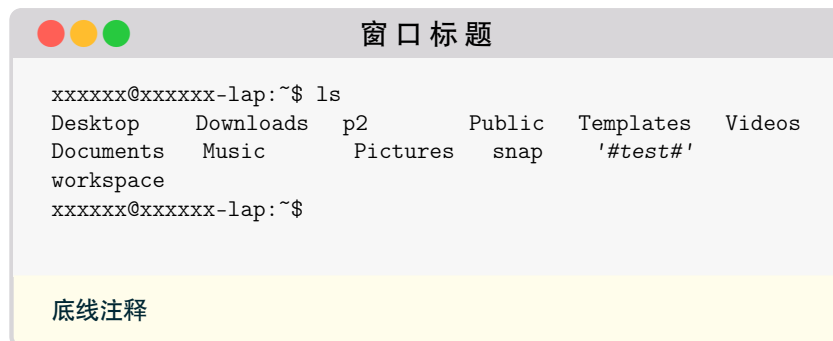
```



```

1 \centering
2 \begin{terminal*}[os=mac,theme=light][底线注释]{窗口标题}
3   xxxxxx@xxxxxx-lap:~$ ls
4   Desktop    Downloads    p2          Public    Templates  Videos
5   Documents  Music       Pictures    snap      '#test#'   workspace
6   xxxxxx@xxxxxx-lap:~$
7 \end{terminal*}

```

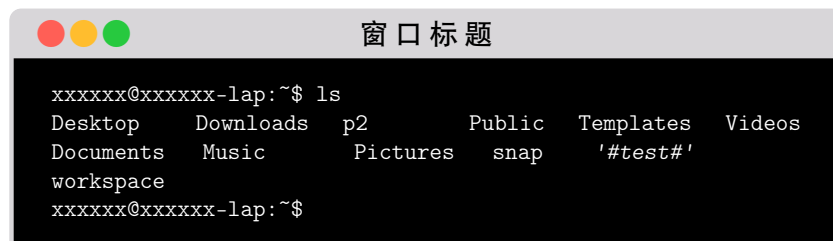


4.2.2 \termfile/\termfile*命令

```

1 \centering
2 \termset{os=mac,theme=dark}
3 \termfile{窗口标题}{testls}

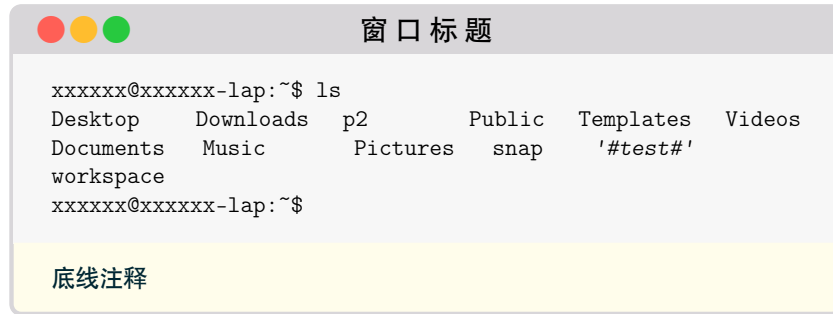
```



```

1 \centering
2 \termfile*[os=mac,theme=light][底线注释]{窗口标题}{testls}

```



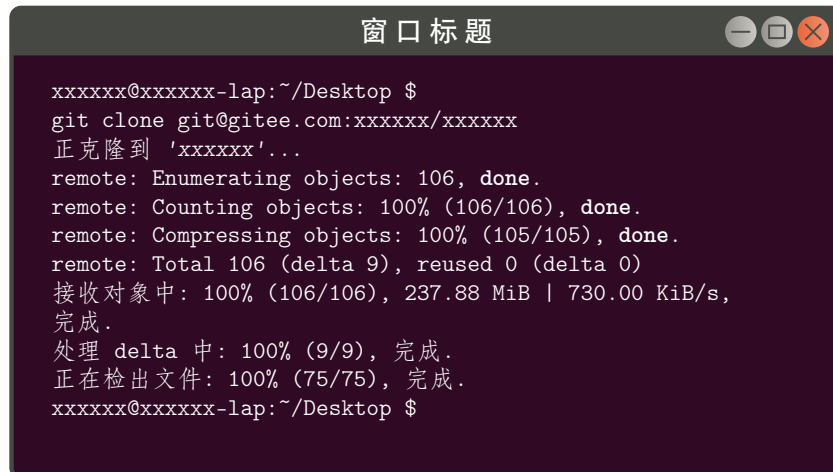
4.3 Ubuntu 终端窗口

4.3.1 terminal/terminal* 环境

```

1 \centering
2 \termset{os=ubuntu,theme=dark}
3 \begin{terminal}{窗口标题}
4   xxxxxx@xxxxxx-lap:~/Desktop $
5   git clone git@gitee.com:xxxxxx/xxxxxx
6   正克隆到 'xxxxxx'...
7   remote: Enumerating objects: 106, done.
8   remote: Counting objects: 100% (106/106), done.
9   remote: Compressing objects: 100% (105/105), done.
10  remote: Total 106 (delta 9), reused 0 (delta 0)
11  接收对象中: 100% (106/106), 237.88 MiB | 730.00 KiB/s,
12  完成.
13  处理 delta 中: 100% (9/9), 完成.
14  正在检出文件: 100% (75/75), 完成.
15  xxxxxx@xxxxxx-lap:~/Desktop $
16 \end{terminal}

```



```

1 \centering
2 \begin{terminal*}[os=ubuntu,theme=light][底线注释]{窗口标题}
3   xxxxxx@xxxxxx-lap:~/Desktop $
4   git clone git@gitee.com:xxxxxx/xxxxxx
5   正克隆到 'xxxxxx'...
6   remote: Enumerating objects: 106, done.
7   remote: Counting objects: 100% (106/106), done.
8   remote: Compressing objects: 100% (105/105), done.
9   remote: Total 106 (delta 9), reused 0 (delta 0)
10  接收对象中: 100% (106/106), 237.88 MiB | 730.00 KiB/s,
11  完成.
12  处理 delta 中: 100% (9/9), 完成.
13  正在检出文件: 100% (75/75), 完成.

```



```

14 xxxxxx@xxxxxx-lap:~/Desktop $
15 \end{terminal*}

```

A terminal window titled '窗口标题' (Window Title) with a light gray background. It shows the output of a git clone command. The text is as follows:

```

xxxxxx@xxxxxx-lap:~/Desktop $
git clone git@gitee.com:xxxxxx/xxxxxx
正克隆到 'xxxxxx'...
remote: Enumerating objects: 106, done.
remote: Counting objects: 100% (106/106), done.
remote: Compressing objects: 100% (105/105), done.
remote: Total 106 (delta 9), reused 0 (delta 0)
接收对象中: 100% (106/106), 237.88 MiB | 730.00 KiB/s,
完成.
处理 delta 中: 100% (9/9), 完成.
正在检出文件: 100% (75/75), 完成.
xxxxxx@xxxxxx-lap:~/Desktop $

```

At the bottom of the window, there is a yellow bar with the text '底线注释' (Baseline Comment).

4.3.2 \termfile/\termfile*命令

```

1 \centering
2 \termset{os=ubuntu,theme=dark}
3 \termfile{窗口标题}{testsh}

```

A terminal window titled '窗口标题' (Window Title) with a dark purple background. It shows the same git clone output as the previous screenshot:

```

xxxxxx@xxxxxx-lap:~/Desktop $
git clone git@gitee.com:xxxxxx/xxxxxx
正克隆到 'xxxxxx'...
remote: Enumerating objects: 106, done.
remote: Counting objects: 100% (106/106), done.
remote: Compressing objects: 100% (105/105), done.
remote: Total 106 (delta 9), reused 0 (delta 0)
接收对象中: 100% (106/106), 237.88 MiB | 730.00 KiB/s,
完成.
处理 delta 中: 100% (9/9), 完成.
正在检出文件: 100% (75/75), 完成.
xxxxxx@xxxxxx-lap:~/Desktop $

```

```

1 \centering
2 \termfile*[os=ubuntu,theme=light][底线注释]{窗口标题}{testsh}

```

A terminal window titled '窗口标题' (Window Title) with a light gray background. It shows the same git clone output as the previous screenshots:

```

xxxxxx@xxxxxx-lap:~/Desktop $
git clone git@gitee.com:xxxxxx/xxxxxx
正克隆到 'xxxxxx'...
remote: Enumerating objects: 106, done.
remote: Counting objects: 100% (106/106), done.
remote: Compressing objects: 100% (105/105), done.
remote: Total 106 (delta 9), reused 0 (delta 0)
接收对象中: 100% (106/106), 237.88 MiB | 730.00 KiB/s,
完成.
处理 delta 中: 100% (9/9), 完成.
正在检出文件: 100% (75/75), 完成.
xxxxxx@xxxxxx-lap:~/Desktop $

```

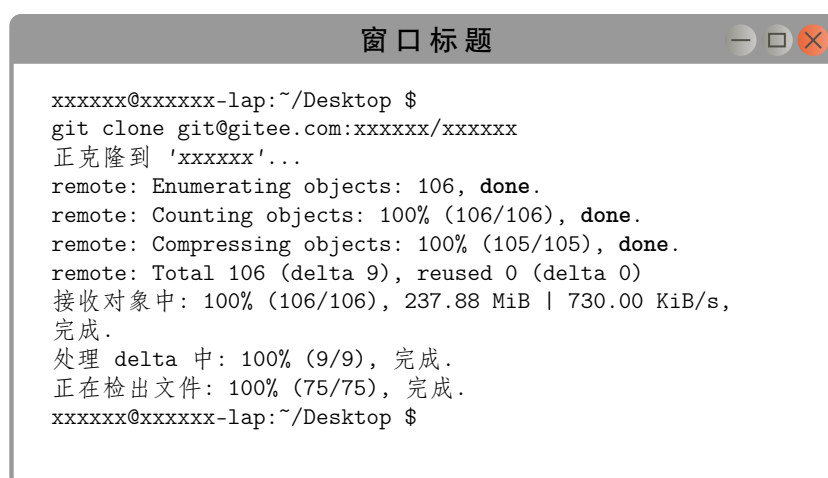
At the bottom of the window, there is a yellow bar with the text '底线注释' (Baseline Comment).

也可以使用 `white` 颜色主题,使用白底黑字排版,以便打印输出。

```

1 \centering
2 \termset{os=ubuntu,theme=white}
3 \begin{terminal}{窗口标题}
4   xxxxxx@xxxxxx-lap:~/Desktop $
5   git clone git@gitee.com:xxxxxx/xxxxxx
6   正克隆到 'xxxxxx'...
7   remote: Enumerating objects: 106, done.
8   remote: Counting objects: 100% (106/106), done.
9   remote: Compressing objects: 100% (105/105), done.
10  remote: Total 106 (delta 9), reused 0 (delta 0)
11  接收对象中: 100% (106/106), 237.88 MiB | 730.00 KiB/s,
12  完成.
13  处理 delta 中: 100% (9/9), 完成.
14  正在检出文件: 100% (75/75), 完成.
15  xxxxxx@xxxxxx-lap:~/Desktop $
16 \end{terminal}

```



第5节 代码实现

该宏包使用 \LaTeX 3 语法编写,依赖 `expl3` 环境,并需调用 `l3packages`、`tclobox`、`minted`、`listings`、`fontawesome5` 等宏包。

按照 \LaTeX 3 语法,代码中的空格、换行、回车与制表符会完全被忽略,而下划线“`_`”和冒号“`:`”则可作为一般字母使用。正常的空格可以使用“`~`”代替;至于 `~` 原来所表示的“带子”,则要用 \LaTeX 2_ε 的原始命令 `\nobreakspace` 代替。

以下代码中有一些形如 `<*package>` 的标记,这是 `DocStrip` 中的“guard”,用来选择性地提取文件。“`*`”和“`/`”分别表示该部分的开始和结束。不含“`*`”和“`/`”的 `guard` 出现在行号右侧,它们用来确定单独一行代码的归属。这些 `guard` 的颜色深浅不一,用以明确嵌套关系。

另有若干形如 `<@@=termsim>` 的 `guard`,它们由 `l3docstrip` 定义,用来标识名字空间(模块)。

5.1 环境检测与准备

```

1 <*package>
2 <@@=termsim>

```

5.2 载入宏包

载入必要的宏包

```
3 \RequirePackage { xtemplate, l3keys2e, xparse }
```

载入 `fontawesome5`、`tclobox`、`varwidth`、`amssymb`、`xcolor`、`etoolbox` 宏包。

```
4 \RequirePackage {fontawesome5, tclobox, varwidth, amssymb, xcolor, etoolbox}
```

解决 Expl3 中 tcolorbox 和 tikz 附加库无法加载的补丁 (需要 etoolbox 宏包支持)

<https://tex.stackexchange.com/questions/57424/using-of-usetikzlibrary-in-an-exp>

```

5 \ExplSyntaxOff
6 \patchcmd
7 {\tcb@input@library@in}
8 {%
9   \input\tcbpkgprefix#1\relax%
10 }
11 {%
12   \@pushfilename
13   \input\tcbpkgprefix#1\relax%
14   \@popfilename
15 }
16 {}{}
17
18 \patchcmd
19 {\pgfutil@InputIfFileExists}
20 {\input #1}
21 {%
22   \@pushfilename
23   \xdef\@currname{#1}%
24   \input #1 %
25   \@popfilename
26 }
27 {}{}
28 \ExplSyntaxOn

```

解决 minted 的 autogobble 选项与 Python3 的兼容性问题 and fancyvrb 宏包命令变更的问题

<https://github.com/gpoore/minted/issues/316>

```

29 \ExplSyntaxOff
30 \RequirePackage {regexpatch} % for starred \xpatchcmd which can replace all
31 \makeatletter
32 % trick, in order to get the integer value from either a macro or register
33 % in an expandable way
34 \def\minted@use@FancyVerbStartNum{\the\numexpr\FancyVerbStartNum}
35 \def\minted@use@FancyVerbStopNum{\the\numexpr\FancyVerbStopNum}
36
37 % patch for fivesum computation
38 \xpatchcmd*\minted@pygmentize
39   {\ifx\FancyVerbStartNum\z@ 0\else\FancyVerbStartNum\fi}
40   {\minted@use@FancyVerbStartNum}
41   {}{\PatchFailed}
42 \xpatchcmd*\minted@pygmentize
43   {\ifx\FancyVerbStopNum\z@ 0\else\FancyVerbStopNum\fi}
44   {\minted@use@FancyVerbStopNum}
45   {}{\PatchFailed}
46
47 % patch for option "autogobble"
48 \xpatchcmd\minted@autogobble
49   {\ifx\FancyVerbStartNum\z@ 0\else\FancyVerbStartNum\fi}
50   {\minted@use@FancyVerbStartNum}
51   {}{\PatchFailed}
52 \xpatchcmd\minted@autogobble
53   {\ifx\FancyVerbStopNum\z@ 0\else\FancyVerbStopNum\fi}
54   {\minted@use@FancyVerbStopNum}
55   {}{\PatchFailed}
56 \makeatother
57 \ExplSyntaxOn

```

载入 tcolorbox 和 tikz 附加库

```

58 \tcbuselibrary{skins, xparse, breakable}
59 \usetikzlibrary{shapes.geometric}

```

5.3 定义颜色

```

60 \definecolor{mpurple}{RGB}{48,10,36}
61 \definecolor{mgray}{RGB}{70,72,67}
62 \definecolor{ogray}{RGB}{148,147,141}
63 \definecolor{oorange}{RGB}{233,101,56}
64 \definecolor{termimal}{RGB}{80,78,70}
65 \definecolor{linux}{RGB}{0,39,51}
66 \definecolor{windows}{HTML}{00B294}
67 \definecolor{cvgrayc}{RGB}{247,247,247}
68 \definecolor{cvgray}{RGB}{220,220,220}
69 \definecolor{cvgrayb}{RGB}{153,153,153}
70 \definecolor{cvblue}{RGB}{223,238,255}
71 \definecolor{zhanqing}{RGB}{0,51,113}
72 \definecolor{chengse}{RGB}{250,140,53}
73
74 \definecolor{AppleRed}{RGB}{255,95,86}
75 \definecolor{AppleYellow}{RGB}{255,189,46}
76 \definecolor{AppleGreen}{RGB}{39,201,63}
77 \definecolor{AppleGray}{HTML}{D8D6D9}
78
79 \definecolor{WinGray}{HTML}{FFFFFF}
80 \definecolor{WinBlue}{HTML}{1883D7}

```

5.4 终端盒子图标设计

用 TikZ 绘制 Ubuntu 终端盒子的最小化、关闭和最大化图标

```

81 \newcommand{\UbuntuMin}{%
82   \begin{tikzpicture}[x=2.4ex,y=2.4ex,line~width=0.15ex,scale=1]
83     \shade[shading=ball,left~color=ogray,right~color=ogray!50!white] (0,0) circle (0.5);
84     \draw[termimal] (-0.3,0)--(0.3,0);
85   \end{tikzpicture}
86 }
87 \newcommand{\UbuntuClose}{%
88   \begin{tikzpicture}[x=2.4ex,y=2.4ex,line~width=0.15ex,scale=1]
89     \shade[shading=ball,left~color=oorange,right~color=oorange!70!white] (0,0) circle (0.5);
90     \draw[termimal] (-0.25,-0.25)--(0.25,0.25);
91     \draw[termimal] (-0.25,0.25)--(0.25,-0.25);
92   \end{tikzpicture}
93 }
94 \newcommand{\UbuntuMax}{%
95   \begin{tikzpicture}[x=2.4ex,y=2.4ex,line~width=0.15ex,scale=1]
96     \shade [shading=ball,left~color=ogray,right~color=ogray!50!white] (0,0) circle (0.5);
97     \draw[termimal] (-0.25,-0.2)rectangle(0.25,0.2);
98   \end{tikzpicture}
99 }

```

绘制 Windows Logo

```

100 \newcommand{\WindowsLogo}{%
101   \begin{tikzpicture}[square/.style={regular~polygon,regular~polygon~sides=4},
102     scale=0.65, every~node/.style={scale=0.65}]
103     \node[square,draw,fill=black,text=white] at (0, 0) (a) {\small\faTerminal};
104   \end{tikzpicture}
105 }

```

5.5 终端盒子样式设计

定义 Mac 终端盒子的 tcolorbox 样式

```

106 \tcbset{%
107   skin=enhanced,%
108   apple/.style={%
109     halign~title=center,%
110     skin=bicolor,%
111     boxrule=0.5mm,%
112     breakable,%
113     frame~style={%

```

```

114     draw=AppleGray,%
115     left~color=AppleGray,%
116     right~color=AppleGray%
117 },%
118 overlay~unbroken = {%
119     \node[inner~sep=0pt,anchor=north~west,yshift=-4pt,xshift=10pt,text=white]
120         at (frame.north~west) {\textcolor{AppleRed}{\faCircle}$\,$
121                                 \textcolor{AppleYellow}{\faCircle}$\,$
122                                 \textcolor{AppleGreen}{\faCircle}};
123 },%
124 overlay~first = {%
125     \node[inner~sep=0pt,anchor=north~west,yshift=-4pt,xshift=10pt,text=white]
126         at (frame.north~west) {\textcolor{AppleRed}{\faCircle}$\,$
127                                 \textcolor{AppleYellow}{\faCircle}$\,$
128                                 \textcolor{AppleGreen}{\faCircle}};
129 },%
130 fonttitle=\sffamily,%\bfseries,%
131 fontupper=\small\sffamily,%
132 fontlower=\small\sffamily%
133 },
134 appledark/.style={%
135     apple,%
136     colback=black,%
137     colupper=white,%
138     colbacktitle=AppleGray,%
139     colframe=AppleGray,%
140     coltitle=black%
141     %coltext=MyLightGray
142 },
143 applelight/.style={%
144     apple,%
145     colback=cvgrayc,%
146     colupper=black,%
147     colbacktitle=AppleGray,%
148     colframe=AppleGray,%
149     coltitle=black%
150 },%
151 applewhite/.style={%
152     apple,%
153     colback=white,%
154     colupper=black,%
155     colbacktitle=AppleGray,%
156     colframe=AppleGray,%
157     coltitle=black%
158 },%
159 }%

```

定义 Win10 终端盒子的 tcolorbox 样式

```

160 \tcbset{%
161     skin=enhanced,%
162     win10/.style={%
163         skin=bicolor,%
164         boxrule=0.1mm,%
165         %toptitle=1ex,
166         sharp~corners,
167         breakable,%
168         colbacktitle=WinGray,%
169         colframe=WinGray,%
170         coltitle=black,%
171         fonttitle=\sffamily,%\bfseries,
172         fontupper=\small\sffamily,
173         fontlower=\small\sffamily,
174         frame~style={%
175             draw=WinBlue,%
176             left~color=WinBlue,%
177             right~color=WinBlue%
178         },%

```

```

179 overlay~unbroken = {%
180   \node[inner~sep=0pt,anchor=north~west,yshift=-3pt,xshift=1.2pt,text=black]
181     at (frame.north~west){\WindowsLogo};
182   \node[inner~sep=0pt,anchor=north~east,yshift=-5pt,xshift=-8pt,text=black]
183     at (frame.north~east){\rule{0.8em}{0.6pt}\quad$\square$\quad{\Large$\times$}};
184 },%
185 overlay~first = {%
186   \node[inner~sep=0pt,anchor=north~west,yshift=-3pt,xshift=1.0pt,text=black]
187     at (frame.north~west){\WindowsLogo};
188   \node[inner~sep=0pt,anchor=north~east,yshift=-5pt,xshift=-8pt,text=black]
189     at (frame.north~east){\rule{0.8em}{0.6pt}\quad$\square$\quad{\Large$\times$}};
190   }%
191 },
192 win10dark/.style={
193   win10,%
194   colback=black,%
195   colupper=white,%
196   %coltext=white%
197 },
198 win10light/.style={
199   win10,%
200   colback=white,%
201   colupper=black,%
202   %coltext=black%
203 },
204 win10white/.style={
205   win10,%
206   colback=white,%
207   colupper=black,%
208   %coltext=white%
209 },
210 }%

```

定义 Ubuntu 终端盒子的 tcolorbox 样式

```

211 \tcbset{%
212   skin=enhanced,%
213   ubuntu/.style={%
214     align~title=center,%
215     skin=bicolor,%
216     boxrule=0.5mm,%
217     breakable,%
218     overlay~unbroken = {%
219       \node[inner~sep=0pt,anchor=north~east,yshift=-3.5pt,xshift=-5pt,text=white]
220         at (frame.north~east){\UbuntuMin$, $\UbuntuMax$, $\UbuntuClose};%
221     },%
222     overlay~first = {%
223       \node[inner~sep=0pt,anchor=north~east,yshift=-3.5pt,xshift=-5pt,text=white]
224         at (frame.north~east){\UbuntuMin$, $\UbuntuMax$, $\UbuntuClose};%
225     },%
226     fonttitle=\sffamily,%
227     fontupper=\small\sffamily,%
228     fontlower=\small\sffamily%
229   },
230   udark/.style={%
231     ubuntu,%
232     frame~style={%
233       draw=mgray,%
234       left~color=mgray,%
235       right~color=mgray%
236     },%
237     colback=mpurple,%
238     colupper=white,%
239     colbacktitle=mgray,%
240     colframe=mgray,%
241     coltitle=white%
242     %coltext=MyLightGray
243   },

```

```

244 ulight/.style={%
245     ubuntu,%
246     frame~style={%
247         draw=cvgrayb,%
248         left~color=cvgrayb,%
249         right~color=cvgrayb%
250     },%
251     colback=cvgrayc,%
252     colupper=black,%
253     colbacktitle=cvgrayb,%
254     colframe=cvgrayb,%
255     coltitle=black%
256 },%
257 uwhite/.style={%
258     ubuntu,%
259     frame~style={%
260         draw=cvgrayb,%
261         left~color=cvgrayb,%
262         right~color=cvgrayb%
263     },%
264     colback=white,%
265     colupper=black,%
266     colbacktitle=cvgrayb,%
267     colframe=cvgrayb,%
268     coltitle=black%
269 },%
270 }%

```

5.6 内部变量声明

定义变量。

```

\l__termsim_minted_bool
\l__termsim_comment_bool
\l__termsim_os_type_int
\l__termsim_color_theme_int
\l__termsim_code_style_tl
\l__termsim_code_fontsize_tl
\l__termsim_comment_format_tl
\l__termsim_baseline_stretch_tl
\l__termsim_linenumber_sep_tl
271 \bool_new:N \l__termsim_minted_bool
272 \bool_new:N \l__termsim_comment_bool
273 \int_new:N \l__termsim_os_type_int
274 \int_new:N \l__termsim_color_theme_int
275 %
276 \tl_new:N \l__termsim_shell_style_tl
277 \tl_new:N \l__termsim_shell_fontsize_tl
278 \tl_new:N \l__termsim_comment_format_tl
279 \tl_new:N \l__termsim_shell_baseline_stretch_tl
280 \tl_new:N \l__termsim_linenumber_sep_tl

```

5.7 选项处理

定义 termsim 键值类。

```

281 \keys_define:nn { termsim }
282 {

```

minted 是否使用 minted 宏包排版代码,默认为 true。

```

283     minted .bool_set:N = \l__termsim_minted_bool,
284     minted .default:n = true,
285     minted .initial:n = true,

```

os 选择操作系统,默认为 Win10。

```

286     os .choice:,
287     os .value_required:n = true,
288     os .choices:nn =
289         { win10, mac, ubuntu }
290         { \int_set_eq:NN \l__termsim_os_type_int \l_keys_choice_int },
291     os .initial:n = win10,

```

theme 选择终端窗口颜色主题,默认为 dark。

```
292 theme .choice:,
293 theme .value_required:n = true,
294 theme .choices:nn =
295   { dark, light, white }
296   { \int_set_eq:NN \l__termsim_color_theme_int \l_keys_choice_int },
297 theme .initial:n = dark,
```

shstyle 代码样式

```
298 shstyle .tl_set:N = \l__termsim_shell_style_tl,
299 shstyle .initial:n = bw,
```

shsize 代码字号

```
300 shsize .tl_set:N = \l__termsim_shell_fontsize_tl,
301 shsize .initial:n = \small,
```

commentf 注释格式

```
302 commentf .tl_set:N = \l__termsim_comment_format_tl,
303 commentf .initial:n = \small\sffamily,
```

shstretch 基线伸展系数

```
304 shstretch .tl_set:N = \l__termsim_shell_baseline_strech_tl,
305 shstretch .initial:n = 1.0,
```

处理未知选项。

```
306 unknown .code:n = { \__termsim_error:n { unknown-option } }
307 }
308 \msg_new:nnn { termsim } { unknown-option }
309 { package~ option~ "\l_keys_key_tl"~ is~ unknown. }
```

参数默认值

```
310 \keys_set:nn { termsim }
311 {
312   minted = true,
313   os      = win10,
314   theme   = dark,
315 }
```

5.8 选项用户接口

\termset 选项设置用户接口。

```
316 \NewDocumentCommand \termset { m }
317 { \keys_set:nn { termsim } {#1} }
```

5.9 内部函数

__termsim_minted_tcbset: 设置终端盒子 minted 宏包参数。

```
318 \cs_new:Npn \__termsim_minted_tcbset:n #1
319 {
320   \tcbset{
321     listing~engine=minted,%
322     minted~style=\tl_use:N \l__termsim_shell_style_tl,%
323     minted~options={%
324       breaklines,%
325       fontsize=\tl_use:N \l__termsim_shell_fontsize_tl,%
326       baselinestretch=#1,%
327       breaksymbolleft={},%
328       linenos=false,%
329     },%
330     minted~language=bash%
331   }
332 }
333 \cs_generate_variant:Nn \__termsim_minted_tcbset:n {V}
```



```

\__termsim_listings_tcbset: 设置终端盒子 listings 宏包参数。
334 \cs_new:Npn \__termsim_listings_tcbset:
335 {
336   \lstset{% general command to set parameter(s)
337     basicstyle=\ttfamily\tl_use:N \l__termsim_shell_fontsize_tl, % print whole listing small
338     keywordstyle=\color{chengse}\bfseries,%
339     identifierstyle=, % nothing happens
340     breaklines=true,
341     commentstyle=\itshape\color{gray},
342     stringstyle=\ttfamily, % typewriter type for strings
343     numbers=left,%
344     numberstyle=\tl_use:N \l__termsim_shell_fontsize_tl\sffamily\color[rgb]{0.5,0.5,1.0},%
345   }%
346 }
347 \cs_generate_variant:Nn \__termsim_minted_tcbset:n {V}

\__termsim_comment_tcbset: 设置终端盒子底线注释。
348 \cs_new:Npn \__termsim_comment_tcbset:n #1
349 {
350   \bool_if:NTF { \l__termsim_comment_bool }
351   {
352     \tcbset{%
353       listing~and~comment,%
354       colbacklower=tcbcolback!5!yellow!10!white,%
355       collower=linux,%
356       comment={\tl_use:N \l__termsim_comment_format_tl~#1},%
357     }
358   }{
359     \tcbset{ listing~only,}
360   }
361 }

\__termsim_terminal_theme_select: 选择终端盒子颜色主题。
362 \cs_new:Npn \__termsim_terminal_theme_select:
363 {
364   \int_case:nn {\l__termsim_os_type_int}
365   {
366     {1}{
367       \int_case:nn {\l__termsim_color_theme_int}
368       {
369         {1}{
370           \tcbset{ win10dark, }
371         }
372         {2}{
373           \tcbset{ win10light, }
374         }
375         {3}{
376           \tcbset{ win10white, }
377         }
378       }
379     }
380     {2}{
381       \int_case:nn {\l__termsim_color_theme_int}
382       {
383         {1}{
384           \tcbset{ appledark, }
385         }
386         {2}{
387           \tcbset{ applelight, }
388         }
389         {3}{
390           \tcbset{ applewhite, }
391         }
392       }
393     }
394     {3}{

```

```

395         \int_case:nn {\l__termsim_color_theme_int}
396         {
397             {1}{
398                 \tcbset{ udark, }
399             }
400             {2}{
401                 \tcbset{ ulight, }
402             }
403             {3}{
404                 \tcbset{ uwhite, }
405             }
406         }
407     }
408 }
409 }

```

5.10 定义排版环境和命令

```

410 \bool_if:NTF \l__termsim_minted_bool
411 {
412     使用 minted 宏包排版代码
413     \tcbuselibrary{minted}
414     定义不带底线注释的窗口模拟环境 terminal
415     \NewDocumentEnvironment{ terminal }{0}{} 0{} m }
416     {
417         \bool_set_false:N \l__termsim_comment_bool
418         \group_begin:
419         \IfNoValueF{#1}{ \keys_set:nn { termsim } { #1 } }
420         \__termsim_comment_tcbset:n { #2 }
421         \__termsim_terminal_theme_select:
422         \__termsim_minted_tcbset:V \l__termsim_shell_baseline_stretch_tl
423         \tcbset{ title={#3} }%
424         \tcblisting{}
425     }{
426         \endtcblisting
427         \group_end:
428     }
429     定义带底线注释的窗口模拟环境 terminal*
430     \NewDocumentEnvironment{ terminal* }{0}{} 0{} m }
431     {
432         \bool_set_true:N \l__termsim_comment_bool
433         \group_begin:
434         \IfNoValueF{#1}{ \keys_set:nn { termsim } { #1 } }
435         \__termsim_comment_tcbset:n { #2 }
436         \__termsim_terminal_theme_select:
437         \__termsim_minted_tcbset:V \l__termsim_shell_baseline_stretch_tl
438         \tcbset{ title={#3} }%
439         \tcblisting{}
440     }{
441         \endtcblisting
442         \group_end:
443     }
444     定义带/不带底线注释的从文件读取内容的命令\termfile/\termfile*
445     \NewDocumentCommand \termfile { s 0{} 0{} m m }
446     {
447         \IfBooleanTF{#1}
448         {
449             \bool_set_true:N \l__termsim_comment_bool
450         }{
451             \bool_set_false:N \l__termsim_comment_bool
452         }
453         \group_begin:
454         \IfNoValueF{#2}{ \keys_set:nn { termsim } { #2 } }

```

```

452     \_termsim_comment_tcbset:n { #3 }
453     \_termsim_terminal_theme_select:
454     \_termsim_minted_tcbset:V \l__termsim_shell_baseline_stretch_tl
455     \_tcbset{
456         title={#4},
457         listing~file={#5},
458     }%
459     \tcbinputlisting{ }
460     \group_end:
461 }
462 }{

```

使用 `listings` 宏包排版代码,并设置代码样式。

```

463     \tcbuselibrary{listings}% 用listings排版代码
464
465     \_termsim_listings_tcbset:
466

```

定义不带底线注释的窗口模拟环境 `terminal`

```

467     \NewDocumentEnvironment{ terminal }{0{} 0{} m }
468     {
469         \bool_set_false:N \l__termsim_comment_bool
470         \group_begin:
471         \IfNoValueF{#1}{ \keys_set:nn { termsim } { #1 } }
472         \_termsim_comment_tcbset:n { #2 }
473         \_termsim_terminal_theme_select:
474         \_tcbset{
475             title={#3},
476             listing~options={
477                 language=bash,
478                 numbers=none,
479             }
480         }%
481         \tcblisting{}
482     }{
483         \endtcblisting
484         \group_end:
485     }

```

定义带底线注释的窗口模拟环境 `terminal*`

```

486     \NewDocumentEnvironment{ terminal* }{0{} 0{} m }
487     {
488         \bool_set_true:N \l__termsim_comment_bool
489         \group_begin:
490         \IfNoValueF{#1}{ \keys_set:nn { termsim } { #1 } }
491         \_termsim_comment_tcbset:n { #2 }
492         \_termsim_terminal_theme_select:
493         \_tcbset{
494             title={#3},
495             listing~options={
496                 language=bash,
497                 numbers=none,
498             }
499         }%
500         \tcblisting{}
501     }{
502         \endtcblisting
503         \group_end:
504     }

```

定义带/不带底线注释的从文件读取内容的命令 `\termfile/\termfile*`

```

505     \NewDocumentCommand \termfile { s O{} O{} m m }
506     {
507         \IfBooleanTF{#1}
508         {
509             \bool_set_true:N \l__termsim_comment_bool
510         }{
511             \bool_set_false:N \l__termsim_comment_bool

```

```
512     }
513     \group_begin:
514     \IfNoValueF{#2}{\keys_set:nn { termsim } { #2 } }
515     \__termsim_comment_tcbset:n { #3 }
516     \__termsim_terminal_theme_select:
517     \ tcbset{
518         title={#4},
519         listing~file={#5},
520         listing~options={
521             language=bash,
522             numbers=none,
523         },%
524     }%
525     \ tcbinputlisting{ }
526     \group_end:
527 }
528 }
529 \endinput
530 </package>
```

版本历史

v1.0.0

(2021/12/14)

General: 开始编写模板 1

代码索引

意大利体的数字表示描述对应索引项的页码;带下划线的数字表示定义对应索引项的代码行号;罗马字体的数字表示使用对应索引项的代码行号。

Symbols	I
\, 120, 121, 126, 127, 220, 224	\IfBooleanTF 443, 507
	\IfNoValueF 417, 431, 451, 471, 490, 514
B	\ifx 39, 43, 49, 53
\begin 82, 88, 95, 101	\input 9, 13, 20, 24
\bfseries 130, 171, 338	int commands:
bool commands:	\int_case:nn 364, 367, 381, 395
\bool_if:NTF 350, 410	\int_new:N 273, 274
\bool_new:N 271, 272	\int_set_eq:NN 290, 296
\bool_set_false:N 415, 447, 469, 511	\itshape 341
\bool_set_true:N 429, 445, 488, 509	
	K
C	keys commands:
\color 338, 341, 344	\l_keys_choice_int 290, 296
commentf 4, 302	\keys_define:nn 281
cs commands:	\l_keys_key_tl 309
\cs_generate_variant:Nn 333, 347	\keys_set:nn 310, 317, 417, 431, 451, 471, 490, 514
\cs_new:Npn 318, 334, 348, 362	
	L
D	\Large 183, 189
\def 34, 35	\lstset 336
\definecolor 60, 61, 62,	
63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 74, 75, 76, 77, 79, 80	M
\draw 84, 90, 91, 97	\makeatletter 31
	\makeatother 56
E	minted 3, 283
\else 39, 43, 49, 53	msg commands:
\end 85, 92, 98, 104	\msg_new:nnn 308
\endinput 529	
\endtcblisting 424, 438, 483, 502	N
\ExplSyntaxOff 5, 29	\newcommand 81, 87, 94, 100
\ExplSyntaxOn 28, 57	\NewDocumentCommand 316, 441, 505
	\NewDocumentEnvironment 413, 427, 467, 486
F	\node 103, 119, 125, 180, 182, 186, 188, 219, 223
\faCircle 120, 121, 122, 126, 127, 128	\numexpr 34, 35
\FancyVerbStartNum 34, 39, 49	
\FancyVerbStopNum 35, 43, 53	O
\faTerminal 103	os 3, 286
\fi 39, 43, 49, 53	
	P
G	\patchcmd 6, 18
group commands:	\PatchFailed 41, 45, 51, 55
\group_begin: 416, 430, 450, 470, 489, 513	
\group_end: 425, 439, 460, 484, 503, 526	Q
	\quad 183, 189

R

\relax 9, 13
 \RequirePackage 3, 4, 30
 \rule 183, 189

S

\sffamily . 130, 131, 132, 171, 172, 173, 226, 227, 228, 303, 344
 \shade 83, 89, 96
 shsize 4, 300
 shstretch 304
 shstretch 4
 shstyle 4, 298
 \small 103, 131, 132, 172, 173, 227, 228, 301, 303
 \square 183, 189

T

\tcbininputlisting 459, 525
 \tcblisting 422, 436, 481, 500
 \tcbpkgprefix 9, 13
 \tcbset 106, 160, 211, 320, 352, 359, 370, 373, 376,
 384, 387, 390, 398, 401, 404, 421, 435, 455, 474, 493, 517
 \tcbuselibrary 58, 412, 463
 \termfile 2, 441, 505
 \termfile* 2
 terminal 2
 terminal* 2
 \termset 3, 316

termsim internal commands:

\l__termsim_baseline_stretch_tl 271
 \l__termsim_code_fontsize_tl 271
 \l__termsim_code_style_tl 271
 \l__termsim_color_theme_int ... 271, 296, 367, 381, 395
 \l__termsim_comment_bool
 271, 350, 415, 429, 445, 447, 469, 488, 509, 511
 \l__termsim_comment_format_tl 271, 302, 356
 __termsim_comment_tcbset: 348
 __termsim_comment_tcbset:n
 348, 418, 432, 452, 472, 491, 515
 __termsim_error:n 306
 \l__termsim_linenumber_sep_tl 271
 __termsim_listings_tcbset: 334, 465
 \l__termsim_minted_bool 271, 283, 410
 __termsim_minted_tcbset: 318
 __termsim_minted_tcbset:n 318, 333, 347, 420, 434, 454
 \l__termsim_os_type_int 271, 290, 364
 \l__termsim_shell_baseline_strech_tl 304

\l__termsim_shell_baseline_stretch_tl
 279, 420, 434, 454
 \l__termsim_shell_fontsize_tl . 277, 300, 325, 337, 344
 \l__termsim_shell_style_tl 276, 298, 322
 __termsim_terminal_theme_select:
 362, 419, 433, 453, 473, 492, 516

TeX and L^AT_EX 2_ε commands:

\@currname 23
 \@popfilename 14, 25
 \@pushfilename 12, 22
 \begin 2
 \end 2
 \minted@autogobble 48, 52
 \minted@pygmentize 38, 42
 \minted@use@FancyVerbStartNum 34, 40, 50
 \minted@use@FancyVerbStopNum 35, 44, 54
 \nobreakspace 10
 \pgfutil@InputIfFileExists 19
 \sffamily 4
 \small 4
 \tcb@input@library@in 7
 \termfile 1–3, 6, 7, 9, 18, 19
 \termfile* 1–3, 6, 7, 9, 18, 19
 \termset 1–3
 \z@ 39, 43, 49, 53
 \textcolor 120, 121, 122, 126, 127, 128
 \the 34, 35
 theme 3, 292
 \times 183, 189
 tl commands:
 \tl_new:N 276, 277, 278, 279, 280
 \tl_use:N 322, 325, 337, 344, 356
 \ttfamily 337, 342

U

\UbuntuClose 87, 220, 224
 \UbuntuMax 94, 220, 224
 \UbuntuMin 81, 220, 224
 \usetikzlibrary 59

W

\WindowsLogo 100, 181, 187

X

\xdef 23
 \xpatchcmd 30, 38, 42, 48, 52