

The mindflow package

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1. INTRODUCTION

The mindflow package provides you a way to write your ideas and annotations clearly. For example, with the options `linenumber` and `rightmarker`, you will get:

| | | |
|---|-------------------------|---|
| 1 | What to write next: | * |
| 2 | • usage; | * |
| 3 | • some internal macros; | * |
| 4 | • an example maybe; | * |
| 5 | • the complete code. | * |

2. USAGE

2.1 Initialization

Simply load the package with

```
\usepackage{mindflow}
```

There are a few options available, which are listed in the next subsection.

2.2 Options

By default, the environment has no line numbers or markers. You can use the following options:

| | |
|------------------------------------|---|
| <code>linenumber</code> | Same as <code>leftlinenumber</code> |
| <code>leftlinenumber</code> | Enable left line numbers |
| <code>rightlinenumber</code> | Enable right line numbers |
| <code>leftmarker</code> | Enable left marker, by default it is a “*” |
| <code>rightmarker</code> | Enable right marker, by default it is a “*” |
| <code>incolumn or twocolumn</code> | The separation line would fit in the column (<i>automatically applied in two-column documents</i>) |
| <code>off</code> | Hide all the mindflow environments |

`{mindflow}` Then you can use the mindflow environment as

```
\begin{mindflow}  
...  
\end{mindflow}
```

2.3 About the line numbers

- 1 You can also add line numbers to the other part of your document in the usual way. For
- 2 example, line numbers have been turned on for this paragraph with `\linenumbers`.

| | | |
|---|--|---|
| 6 | Line numbers within the mindflow environments are independent from those of the main text. | * |
|---|--|---|

- 3 (*I recommend that you put an empty line before and after the mindflow environments, i.e. make*
- 4 *the mindflow environment a paragraph of its own. This way, your paragraph structure won't get*
- 5 *changed when you use the `off` option.*)

The feature of line numbering is provided by the package `lineno`. You can read its documentation to learn more about it. Notice that, by default, displayed equations are not numbered. You can add the following line before `\usepackage{mindflow}`:

```
\PassOptionsToPackage{mathlines}{lineno}
```

to enable the line numbers for displayed equations.

| | | |
|---|---------------------------------------|---|
| 7 | $(a+b)^2 = a^2 + 2ab + b^2$ | * |
| 8 | $(a+b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$ | * |

3. SOME T_EXNICAL DETAILS

| | |
|--|--|
| <code>\mindflowTextFont</code> | The font for text, line numbers and markers within the mindflow environments can be specified by redefining <code>\mindflowTextFont</code> , <code>\mindflowNumFont</code> and <code>\mindflowMarkerFont</code> . By default, they are defined as: |
| <code>\mindflowNumFont</code> | |
| <pre>\newcommand{\mindflowTextFont}{\normalfont\footnotesize} \newcommand{\mindflowNumFont}{\normalfont\scriptsize\ttfamily} \newcommand{\mindflowMarkerFont}{\normalfont\scriptsize\ttfamily}</pre> | |
| <code>\mindflowLeft</code> | The left and right markers can be changed by redefining <code>\mindflowLeft</code> and <code>\mindflowRight</code> . Both have the default value as “*”. |
| <code>\mindflowRight</code> | |
| <code>\mindflowLineHeight</code> | The height of the separation lines is a length macro named <code>\mindflowLineHeight</code> , with default value 0.4pt. You can change this with <code>\setlength</code> . |
| <code>mindflowLine</code> | And finally, the colors for the separation lines, text, line numbers and markers within the mindflow environments are called <code>mindflowLine</code> , <code>mindflowText</code> , <code>mindflowNum</code> and <code>mindflowMarker</code> , respectively. By default, they have the same color as the context, with opacity 30% for the separation lines, text and markers, and 8% for the line numbers. |
| <code>mindflowText</code> | |
| <code>mindflowNum</code> | |
| <code>mindflowMarker</code> | |

4. AN EXAMPLE

With option `leftlinenumber`, `rightlinenumber`, `leftmarker`, `rightmarker` and the following settings:

```
\colorlet{mindflowLine}{green!50!black}
\colorlet{mindflowText}{blue!50!cyan}
\colorlet{mindflowNum}{red!50!orange}
\colorlet{mindflowMarker}{orange}
\renewcommand{\mindflowTextFont}{\normalfont\footnotesize\sffamily\itshape}
\renewcommand{\mindflowNumFont}{\normalfont\small\footnotesize\ttfamily}
\renewcommand{\mindflowMarkerFont}{\normalfont\footnotesize\sffamily}
\renewcommand{\mindflowLeft}{\hspace{1em}\(\succ\)}
\renewcommand{\mindflowRight}{\(\prec\)\hspace{1em}}
\setlength{\mindflowLineHeight}{1pt}
```

One gets:

| | | | | |
|----|---|--|---|----|
| 9 | ➤ | <i> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra</i> | ➤ | 9 |
| 10 | ➤ | <i> sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a</i> | ➤ | 10 |
| 11 | ➤ | <i> dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent</i> | ➤ | 11 |
| 12 | ➤ | <i> in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut</i> | ➤ | 12 |
| 13 | ➤ | <i> metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit</i> | ➤ | 13 |
| 14 | ➤ | <i> blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum.</i> | ➤ | 14 |
| 15 | ➤ | <i> Nunc quis urna dictum turpis accumsan semper.</i> | ➤ | 15 |

5. IMPLEMENTATION

Below is the complete source code of this package.

```

1 \RequirePackage{kvoptions}
2 \SetupKeyvalOptions{%
3     family = @mindflow,
4     prefix = @mindflow@
5 }
6 \DeclareBoolOption[false]{off}           % Turn off mindflow
7 \DeclareBoolOption[false]{leftmarker}    % Left marker
8 \DeclareBoolOption[false]{rightmarker}   % Right marker
9 \DeclareBoolOption[false]{linenumber}    % Left line numbers
10 \DeclareBoolOption[false]{leftlinenumber} % Left line numbers
11 \DeclareBoolOption[false]{rightlinenumber} % Right line numbers
12 \DeclareBoolOption[false]{twocolumn}     % Two column
13 \DeclareBoolOption[false]{incolumn}      % Separation line fits in the column
14
15 \ProcessKeyvalOptions*\relax
16
17 \if@mindflow@twocolumn
18     \@mindflow@incolumntrue
19 \fi
20 \if@mindflow@linenumber
21     \@mindflow@leftlinenumbertrue
22 \fi
23
24 %%=====
25 %% Initialization
26 %%=====
27 \RequirePackage{lineno}
28 \RequirePackage{xcolor}
29
30 \colorlet{mfSavedColor}{.}
31 \colorlet{mindflowLine}{mfSavedColor!30}
32 \colorlet{mindflowText}{mfSavedColor!30}
33 \colorlet{mindflowMarker}{mfSavedColor!30}
34 \colorlet{mindflowNum}{mfSavedColor!8}
35
36 \newcommand{\mindflowTextFont}{\normalfont\footnotesize}
37 \newcommand{\mindflowNumFont}{\normalfont\scriptsize\ttfamily}
38 \newcommand{\mindflowMarkerFont}{\normalfont\scriptsize\ttfamily}
39 \newcommand{\mindflowLeft}{*}
40 \newcommand{\mindflowRight}{*}
41 \newlength{\mindflowLineHeight}
42 \setlength{\mindflowLineHeight}{0.4pt}
43
44 %%=====
45 %% The mindflow environment
46 %%=====
47 \newif\ifLNturnsON
48 \newcommand*{\mfSepLine}{%
49     \parskip=0pt
50     \LNturnsONfalse%
51     \ifLineNumbers\LNturnsONtrue\fi\nolinenumbers%
52     \par\noindent\nopagebreak%
53     \if@mindflow@incolumn%
54         \makebox[\linewidth]{\rule{\linewidth}{\mindflowLineHeight}}%
55     \else%
56         \hspace*{-\paperwidth}%
57         \makebox[\linewidth]{\rule{4\paperwidth}{\mindflowLineHeight}}%

```

```

58 \fi%
59 \nopagebreak\par%
60 \ifLNturnsON\linenumbers\fi%
61 }
62
63 \newcounter{recordLN}
64 \newcounter{mfLN}
65 \setcounter{mfLN}{1}
66
67 \if@mindflow@off
68 \RequirePackage{verbatim}
69 \let\mindflow=\comment
70 \let\endmindflow=\endcomment
71 \else
72 \newenvironment{mindflow}
73 {%
74 \setcounter{recordLN}{\value{linenumber}}%
75 \setcounter{linenumber}{\value{mfLN}}%
76 \LNturnsONfalse%
77 \ifLineNumbers\LNturnsONtrue\fi\nolinelnumbers%
78 \color{mindflowLine}\mfSepLine%
79 \mindflowTextFont\color{mindflowText}%
80 \linenumbers%
81 \renewcommand\makeLineNumber{%
82 \hss%
83 \if@mindflow@leftlinenumber%
84 \mindflowNumFont\color{mindflowNum}\LineNumber\hspace{1em}%
85 \fi%
86 \color{mindflowMarker}%
87 \if@mindflow@leftmarker%
88 \mindflowMarkerFont\mindflowLeft\hspace{1em}%
89 \fi%
90 \rlap{\hskip\textwidth%
91 \if@mindflow@rightmarker%
92 \hspace{1em}\mindflowRight%
93 \fi%
94 \if@mindflow@rightlinenumber%
95 \hspace{1em}%
96 \mindflowNumFont\color{mindflowNum}\LineNumber%
97 \fi%
98 }%
99 }%
100 }
101 {%
102 \par%
103 \vspace{-.5\baselineskip}\color{mindflowLine}\mfSepLine%
104 \ifLNturnsON\linenumbers\fi%
105 \setcounter{mfLN}{\value{linenumber}}%
106 \setcounter{linenumber}{\value{recordLN}}%
107 }
108 \fi
109
110 \ifdefined\linenomathpatch\else
111 \RequirePackage{amsmath}
112 \RequirePackage{etoolbox}
113 \newcommand*\linenomathpatch[1]{%
114 \cspreto{#1}{\linenomath}%
115 \cspreto{#1*}{\linenomath}%
116 \csappto{end#1}{\endlinenomath}%
117 \csappto{end#1*}{\endlinenomath}%
118 }

```

```

119 \newcommand*\linenomathpatchAMS[1]{%
120   \cspreto{#1}{\linenomathAMS}%
121   \cspreto{#1*}{\linenomathAMS}%
122   \csappto{end#1}{\endlinenomath}%
123   \csappto{end#1*}{\endlinenomath}%
124 }
125 \expandafter\ifx\linenomath\linenomathWithnumbers
126   \let\linenomathAMS\linenomathWithnumbers
127   \patchcmd\linenomathAMS{\advance\postdisplaypenalty\linenopenalty}{}{}{}
128 \else
129   \let\linenomathAMS\linenomathNonumbers
130 \fi
131 \linenomathpatch{equation}
132 \linenomathpatchAMS{gather}
133 \linenomathpatchAMS{multline}
134 \linenomathpatchAMS{align}
135 \linenomathpatchAMS{alignat}
136 \linenomathpatchAMS{flalign}
137 \fi

```