

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

Simply load the package with

```
\usepackage{mindflow}
```

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

<code>linenumber</code>	Enable 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</code> or <code>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}
```

- 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. This way,*
4 *your paragraph structure won't get 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 <code>mindflow</code> 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>"*"</code> .
<code>\mindflowRight</code>	
<code>\mindflowLineHeight</code>	The height of the separation lines is a length macro named <code>\mindflowLineHeight</code> , with default value <code>0.4pt</code> . 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 <code>mindflow</code> 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 `linenumber`, `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\sffamily}
\renewcommand{\mindflowMarkerFont}{\normalfont\footnotesize\sffamily}
\renewcommand{\mindflowLeft}{\hspace{1em}\(\succ\)}
\renewcommand{\mindflowRight}{\(\prec\)}
\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>	➤
10	➤	<i> sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a</i>	➤
11	➤	<i> dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent</i>	➤
12	➤	<i> in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut</i>	➤
13	➤	<i> metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit</i>	➤
14	➤	<i> blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum.</i>	➤
15	➤	<i> Nunc quis urna dictum turpis accumsan semper.</i>	➤

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}    % Line numbers
10 \DeclareBoolOption[false]{twocolumn}     % Two column

```

```

11 \DeclareBoolOption[false]{incolumn}      % Separation line fits in the column
12
13 \ProcessKeyvalOptions*\relax
14
15 \if@mindflow@twocolumn
16   \@mindflow@incolumntrue
17 \fi
18
19 %%=====
20 %% Initialization
21 %%=====
22 \RequirePackage{lineno}
23 \RequirePackage{xcolor}
24
25 \colorlet{mfSavedColor}{.}
26 \colorlet{mindflowLine}{mfSavedColor!30}
27 \colorlet{mindflowText}{mfSavedColor!30}
28 \colorlet{mindflowMarker}{mfSavedColor!30}
29 \colorlet{mindflowNum}{mfSavedColor!8}
30
31 \newcommand{\mindflowTextFont}{\normalfont\footnotesize}
32 \newcommand{\mindflowNumFont}{\normalfont\scriptsize\ttfamily}
33 \newcommand{\mindflowMarkerFont}{\normalfont\scriptsize\ttfamily}
34 \newcommand{\mindflowLeft}{*}
35 \newcommand{\mindflowRight}{*}
36 \newlength{\mindflowLineHeight}
37 \setlength{\mindflowLineHeight}{0.4pt}
38
39 %%=====
40 %% The mindflow environment
41 %%=====
42 \newif\ifLNturnsON
43
44 \newcommand*{\mfSepLine}{%
45   \parskip=0pt
46   \LNturnsONfalse%
47   \ifLineNumbers\LNturnsONtrue\fi\nolinenumbers%
48   \par\noindent\nopagebreak%
49   \if@mindflow@incolumn%
50     \makebox[\linewidth]{\rule{\linewidth}{\mindflowLineHeight}}%
51   \else%
52     \hspace*{-\paperwidth}\makebox[\linewidth]{\rule{4\paperwidth}{\mindflowLineHeight}}%
53   \fi%
54   \nopagebreak\par%
55   \ifLNturnsON\linenumbers\fi%
56 }
57
58 \newcounter{recordLN}
59 \newcounter{mfLN}
60 \setcounter{mfLN}{1}
61
62 \if@mindflow@off
63   \RequirePackage{verbatim}
64   \let\mindflow=\comment
65   \let\endmindflow=\endcomment
66 \else
67   \newenvironment{mindflow}
68   {%
69     \setcounter{recordLN}{\value{linenumbers}}%
70     \setcounter{linenumbers}{\value{mfLN}}%
71     \LNturnsONfalse%

```

```

72 \ifLineNumbers\LNturnsONtrue\fi\nolinenumbers%
73 \color{mindflowLine}\mfSepLine%
74 \mindflowTextFont\color{mindflowText}%
75 \linenumbers%
76 \renewcommand\makeLineNumber{%
77   \hss%
78   \if@mindflow@linenumber%
79     \mindflowNumFont\color{mindflowNum}\LineNumber\hspace{1em}%
80   \fi%
81   \color{mindflowMarker}%
82   \if@mindflow@leftmarker%
83     \mindflowMarkerFont\mindflowLeft\hspace{1em}%
84   \fi%
85   \if@mindflow@rightmarker%
86     \rlap{\hskip\textwidth\hspace{1em}\mindflowRight}%
87   \fi%
88 }%
89 }
90 {%
91   \par%
92   \vspace{-.5\baselineskip}\color{mindflowLine}\mfSepLine%
93   \ifLNturnsON\linenumbers\fi%
94   \setcounter{mflN}{\value{linenumber}}%
95   \setcounter{linenumber}{\value{recordLN}}%
96 }
97 \fi
98
99 \ifdefined\linenomathpatch\else
100 \RequirePackage{amsmath}
101 \RequirePackage{etoolbox}
102 \newcommand*\linenomathpatch[1]{%
103   \cspreto{#1}{\linenomath}%
104   \cspreto{#1*}{\linenomath}%
105   \csappto{end#1}{\endlinenomath}%
106   \csappto{end#1*}{\endlinenomath}%
107 }
108 \newcommand*\linenomathpatchAMS[1]{%
109   \cspreto{#1}{\linenomathAMS}%
110   \cspreto{#1*}{\linenomathAMS}%
111   \csappto{end#1}{\endlinenomath}%
112   \csappto{end#1*}{\endlinenomath}%
113 }
114 \expandafter\ifx\linenomath\linenomathWithnumbers
115   \let\linenomathAMS\linenomathWithnumbers
116   \patchcmd\linenomathAMS{\advance\postdisplaypenalty\linenopenalty}{}{}{}
117 \else
118   \let\linenomathAMS\linenomathNonumbers
119 \fi
120 \linenomathpatch{equation}
121 \linenomathpatchAMS{gather}
122 \linenomathpatchAMS{multline}
123 \linenomathpatchAMS{align}
124 \linenomathpatchAMS{alignat}
125 \linenomathpatchAMS{flalign}
126 \fi

```