

mindflow, write your ideas in a clear way

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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 something like:

1	What to write next:	*
2	• usage: the initialization, options and configuration;	*
3	• an example;	*
4	• some word on the line numbering feature;	*
5	• some internal macros;	*
6	• 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 (they can be specified directly, like `off`, or as a boolean optional, like `off=false`):

<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</code> or <code>twocolumn</code>	The separation line would fit in the column (<i>automatically applied in two-column documents</i>)
<code>off</code> , <code>on</code>	Turn the mindflow environments <i>off</i> or <i>on</i>

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

```
\begin{mindflow}  
  <text>  
\end{mindflow}
```

2.3 The configuration

`\mindflowset` You can use `\mindflowset{<configuration>}` to configure the mindflow environment. The following keys are provided:

<code>left</code>	The left marker
<code>right</code>	The right marker
<code>textcolor</code>	Color of the text
<code>numcolor</code>	Color of line numbers
<code>markercolor</code>	Color of the markers
<code>linecolor</code>	Color of the separation line

textfont	Font of the text
numfont	Font of line numbers
markerfont	Font of the marker
lineheight	Height of the separation line

Additionally, all the options mentioned in the previous section can be set with `\mindflowset`.

3. AN EXAMPLE

With the following settings:

```
\mindflowset{
  leftlinenumber, rightlinenumber,
  leftmarker, rightmarker,
  linecolor = green!50!black,
  textcolor = blue!50!cyan,
  numcolor = red!50!orange,
  markercolor = orange,
  textfont = \footnotesize\sffamily\itshape,
  numfont = \small\footnotesize\ttfamily,
  markerfont = \footnotesize\sffamily,
  left = \hspace{1em}\(\succ\),
  right = \(\prec\)\hspace{1em},
  lineheight = 1pt
}
```

One will have something like this:

7	✧	<i>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra</i>	✧	7
8	✧	<i>sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a</i>	✧	8
9	✧	<i>dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent</i>	✧	9
10	✧	<i>in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut</i>	✧	10
11	✧	<i>metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit</i>	✧	11
12	✧	<i>blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum.</i>	✧	12
13	✧	<i>Nunc quis urna dictum turpis accumsan semper.</i>	✧	13

4. 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`.

14 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 the*
- 4 *mindflow environment a paragraph of its own. This way, your paragraph structure won't get changed*
- 5 *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.

15	$(a + b)^2 = a^2 + 2ab + b^2$	*
16	$(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$	*

5. 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>	
<code>\mindflowMarkerFont</code>	
<hr/> <pre>\newcommand{\mindflowTextFont}{\footnotesize} \newcommand{\mindflowNumFont}{\scriptsize\ttfamily} \newcommand{\mindflowMarkerFont}{\scriptsize\ttfamily}</pre> <hr/>	
<code>\mindflowLeft</code> <code>\mindflowRight</code>	The left and right markers is defined by <code>\mindflowLeft</code> and <code>\mindflowRight</code> . Both have the default value <code>""</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> <code>mindflowText</code> <code>mindflowNum</code> <code>mindflowMarker</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.

6. THE SAME 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}{\footnotesize\sffamily\itshape}
\renewcommand{\mindflowNumFont}{\small\footnotesize\ttfamily}
\renewcommand{\mindflowMarkerFont}{\footnotesize\sffamily}
\renewcommand{\mindflowLeft}{\hspace{1em}\(\succ\)}
\renewcommand{\mindflowRight}{\(\prec\)\hspace{1em}}
\setlength{\mindflowLineHeight}{1pt}

```

One will get the same result as in the previous example.

7. IMPLEMENTATION

Below is the complete source code of this package.

```

1 \RequirePackage{kvoptions}
2 \SetupKeyvalOptions{%
3     family = @mindflow,
4     prefix = @mindflow@
5 }
6 \DeclareBoolOption[true]{on}           % Turn on mindflow
7 \DeclareBoolOption[false]{off}         % Turn off mindflow
8 \DeclareBoolOption[false]{leftmarker}  % Left marker
9 \DeclareBoolOption[false]{rightmarker} % Right marker
10 \DeclareBoolOption[false]{linenumber}  % Left line numbers
11 \DeclareBoolOption[false]{leftlinenumber} % Left line numbers
12 \DeclareBoolOption[false]{rightlinenumber} % Right line numbers
13 \DeclareBoolOption[false]{twocolumn}   % Two column

```

```

14 \DeclareBoolOption[false]{incolumn}          % Separation line fits in column
15
16 \ProcessKeyvalOptions*\relax
17
18 \if@mindflow@on
19   \@mindflow@offfalse
20 \fi
21 \if@mindflow@twocolumn
22   \@mindflow@incolumntrue
23 \fi
24 \if@mindflow@linenumber
25   \@mindflow@leftlinenumbertrue
26 \fi
27
28 %%=====
29 %% Initialization
30 %%=====
31 \RequirePackage{lineno}
32 \RequirePackage{xcolor}
33
34 \colorlet{mfSavedColor}{.}
35 \colorlet{mindflowLine}{mfSavedColor!30}
36 \colorlet{mindflowText}{mfSavedColor!30}
37 \colorlet{mindflowMarker}{mfSavedColor!30}
38 \colorlet{mindflowNum}{mfSavedColor!8}
39
40 \newcommand{\mindflowTextFont}{\footnotesize}
41 \newcommand{\mindflowNumFont}{\scriptsize\ttfamily}
42 \newcommand{\mindflowMarkerFont}{\scriptsize\ttfamily}
43 \newcommand{\mindflowLeft}{*}
44 \newcommand{\mindflowRight}{*}
45 \newlength{\mindflowLineHeight}
46 \setlength{\mindflowLineHeight}{0.4pt}
47
48 %%=====
49 %% The mindflow environment
50 %%=====
51 \RequirePackage{nowidow}
52 \RequirePackage{verbatim}
53 \newif\ifLNturnsON
54 \newcommand*{\mfSepLine}{%
55   \parskip=0pt
56   \nowidow[3]\par\nobreak%
57   \LNturnsONfalse%
58   \ifLineNumbers\LNturnsONtrue\fi\nolinenumbers%
59   \vspace*{-.5\baselineskip}%
60   \if@mindflow@incolumn%
61     \makebox[\linewidth]{\color{mindflowLine}\rule{\linewidth}{\mindflowLineHeight}}%
62   \else%
63     \hspace*{-.paperwidth}%
64     \makebox[\linewidth]{\color{mindflowLine}\rule{4\paperwidth}{\mindflowLineHeight}}%
65   \fi%
66   \nowidow[3]\par\nobreak%
67   \ifLNturnsON\linenumbers\fi%

```

```

68 }
69
70 \newcounter{recordLN}
71 \newcounter{mfLN}
72 \setcounter{mfLN}{1}
73
74 \let\mindflowOFF=\comment
75 \let\endmindflowOFF=\endcomment
76
77 \def\mindflowON{%
78   \postdisplaypenalty=10000
79   \medskip%
80   \setcounter{recordLN}{\value{linenumber}}%
81   \setcounter{linenumber}{\value{mfLN}}%
82   \LNturnsONfalse%
83   \ifLineNumbers\LNturnsONtrue\fi\nolinenumbers%
84   \mfSepLine%
85   \normalfont\mindflowTextFont\color{mindflowText}%
86   \linenumbers%
87   \renewcommand{\makeLineNumber}{%
88     \hss%
89     \if@mindflow@leftlinenumber%
90       \normalfont\mindflowNumFont\color{mindflowNum}\LineNumber\hspace{1em}
91       %
92       \fi%
93       \color{mindflowMarker}%
94       \if@mindflow@leftmarker%
95         \normalfont\mindflowMarkerFont\mindflowLeft\hspace{1em}%
96         \fi%
97         \rlap{\hskip\textwidth%
98           \if@mindflow@rightmarker%
99             \hspace{1em}\mindflowRight%
100             \fi%
101             \if@mindflow@rightlinenumber%
102               \hspace{1em}%
103               \normalfont\mindflowNumFont\color{mindflowNum}\LineNumber%
104               \fi%
105             }%
106           }%
107         }
108       \def\endmindflowON{%
109         \mfSepLine%
110         \ifLNturnsON\linenumbers\fi%
111         \setcounter{mfLN}{\value{linenumber}}%
112         \setcounter{linenumber}{\value{recordLN}}%
113         \medskip%
114       }
115       \if@mindflow@off
116         \let\mindflow=\mindflowOFF
117         \let\endmindflow=\endmindflowOFF
118       \else
119         \let\mindflow=\mindflowON
120         \let\endmindflow=\endmindflowON
121       \fi
122

```

```

123 %%=====
124 %% \mindflowset
125 %%=====
126 \define@key{mindflow}{on}[true]{%
127   \csname @mindflow@on#1\endcsname%
128   \if@mindflow@off%
129     \let\mindflow=\mindflowOFF%
130     \let\endmindflow=\endmindflowOFF%
131   \else%
132     \let\mindflow=\mindflowON%
133     \let\endmindflow=\endmindflowON%
134   \fi%
135 }
136 \define@key{mindflow}{off}[true]{%
137   \csname @mindflow@off#1\endcsname%
138   \if@mindflow@off%
139     \let\mindflow=\mindflowOFF%
140     \let\endmindflow=\endmindflowOFF%
141   \else%
142     \let\mindflow=\mindflowON%
143     \let\endmindflow=\endmindflowON%
144   \fi%
145 }
146 \define@key{mindflow}{leftmarker}[true]{\csname @mindflow@leftmarker#1\
147   \endcsname}
147 \define@key{mindflow}{rightmarker}[true]{\csname @mindflow@rightmarker#1\
148   \endcsname}
148 \define@key{mindflow}{linenumber}[true]{\csname @mindflow@linenumber#1\
149   \endcsname}
149 \define@key{mindflow}{leftlinenumber}[true]{\csname
150   @mindflow@leftlinenumber#1\endcsname}
150 \define@key{mindflow}{rightlinenumber}[true]{\csname
151   @mindflow@rightlinenumber#1\endcsname}
151 \define@key{mindflow}{twocolumn}[true]{\csname @mindflow@twocolumn#1\
152   \endcsname}
152 \define@key{mindflow}{incolumn}[true]{\csname @mindflow@incolumn#1\
153   \endcsname}
153 \define@key{mindflow}{linecolor}{\colorlet{mindflowLine}{#1}}
154 \define@key{mindflow}{textcolor}{\colorlet{mindflowText}{#1}}
155 \define@key{mindflow}{numcolor}{\colorlet{mindflowNum}{#1}}
156 \define@key{mindflow}{markercolor}{\colorlet{mindflowMarker}{#1}}
157 \define@key{mindflow}{textfont}{\renewcommand{\mindflowTextFont}{#1}}
158 \define@key{mindflow}{numfont}{\renewcommand{\mindflowNumFont}{#1}}
159 \define@key{mindflow}{markerfont}{\renewcommand{\mindflowMarkerFont}{#1}}
160 \define@key{mindflow}{left}{\renewcommand{\mindflowLeft}{#1}}
161 \define@key{mindflow}{right}{\renewcommand{\mindflowRight}{#1}}
162 \define@key{mindflow}{lineheight}{\setlength{\mindflowLineHeight}{#1}}
163 \newcommand{\mindflowset}[1]{%
164   \setkeys{mindflow}{#1}%
165   \if@mindflow@twocolumn%
166     \@mindflow@incolumntrue%
167   \fi%
168   \if@mindflow@linenumber%
169     \@mindflow@leftlinenumbertrue%
170   \fi%
171 }

```

```

172
173 %%=====
174 %% lineno patch
175 %%=====
176 \ifdefined\linenomathpatch\else
177   \RequirePackage{amsmath}
178   \RequirePackage{etoolbox}
179   \newcommand*\linenomathpatch[1]{%
180     \cspreto{#1}{\linenomath}%
181     \cspreto{#1*}{\linenomath}%
182     \csappto{end#1}{\endlinenomath}%
183     \csappto{end#1*}{\endlinenomath}%
184   }
185   \newcommand*\linenomathpatchAMS[1]{%
186     \cspreto{#1}{\linenomathAMS}%
187     \cspreto{#1*}{\linenomathAMS}%
188     \csappto{end#1}{\endlinenomath}%
189     \csappto{end#1*}{\endlinenomath}%
190   }
191   \expandafter\ifx\linenomath\linenomathWithnumbers
192     \let\linenomathAMS\linenomathWithnumbers
193     \patchcmd\linenomathAMS{\advance\postdisplaypenalty\linenopenalty}
194       {}{}{}{}
195   \else
196     \let\linenomathAMS\linenomathNonumbers
197   \fi
198   \linenomathpatch{equation}
199   \linenomathpatchAMS{gather}
200   \linenomathpatchAMS{multline}
201   \linenomathpatchAMS{align}
202   \linenomathpatchAMS{alignat}
203   \linenomathpatchAMS{flalign}
204 \fi

```
