

`ffcode`: L^AT_EX Package for Fixed-Font Code Blocks*

Yegor Bugayenko
yegor256@gmail.com

2022-11-28, 0.7.0

1 Introduction

This package helps you write source code in your articles and make sure it looks nice. Install it from CTAN and then use like this (pay attention to `\ff` command and `ffcode` environment):

<pre>1 The function <code>fibonacci()</code> is recursive: 2 3 int fibonacci(int n) { 4 if (n < 2) { 5 return n; 6 } 7 return fibonacci(n-1)+fibonacci(n-2); 8 }</pre>	<pre>1 \documentclass{article} 2 \usepackage{ffcode} 3 \pagestyle{empty} 4 \begin{document} 5 The function fibonacci() is recursive: 6 \begin{ffcode} 7 int fibonacci(int n) { 8 if (n < 2) { 9 return n; \label{ln:ret} 10 } 11 return fibonacci(n-1)+fibonacci(n-2); 12 } 13 \end{ffcode} 14 Line no.~\ref{ln:ret} returns \ff{n} 15 and terminates it. 16 \end{document}</pre>
--	---

2 Package Options

`nopygments` You have to run `pdflatex` with `-shell-escape` flag in order to let `minted` (the package we use) to run Pygments and format the code. If you don't want this to happen, just use `nopygments` option.

`noframes` If you want to omit the light gray frames around `\ff` texts, use the package option `noframes`.

`nobars` To omit the vertical gray bar at the left side of each snippet, use `nobars` option of the package.

*The sources are in GitHub at [yegor256/ffcode](https://github.com/yegor256/ffcode)

- nonumbers** To omit the line numbers, use `nonumbers` option of the package.
- nocn** By default, the numbering is continuous: line numbers start at the first snippet and increment until the end of the document. If you want them to start from one at each snippet, use `nocn` (stands for “no continuous numbering”) option of the package.
- bold** You can make your `\ff` pieces look bolder than usual, which may be pretty convenient for some document classes (pay attention to the usage of the [lmodern](#) package, without it the bold won’t work, as explained [here](#)):

Sometimes it's necessary to make code pieces look bolder, like the `fibonacci()` function in this text.

```
4 \usepackage{lmodern}
5 \usepackage[bold,noframes]{ffcode}
6 \begin{document}
7 Sometimes it's necessary to make
8 code pieces look bolder, like
9 the |fibonacci()| function in this text.
10 \end{document}
```

- sf** You can change the font family of `\ff` pieces to `\sffamily`:

Sometimes you may want them to look not strictly fixed-width, but more elegant, like the `fibonacci()` here.

```
4 \usepackage[sf,bold,noframes]{ffcode}
5 \begin{document}
6 Sometimes you may want them to look
7 not strictly fixed-width, but more
8 elegant, like the |fibonacci()| here.
9 \end{document}
```

3 Typesetting

By the way, the package correctly formats low-height texts, for example, just a dot: `.`

A pair of vertical lines decorate a TeX command inside the snippet. If you want to print a single vertical line, use this: “`|\char‘\vert|`”.

The command `\ff` behaves differently in math mode — it doesn’t add gray frames:

$$x = \int_{\text{home}}^N f(x).$$

```
6 \begin{equation*}
7 x = \int_{\text{home}}^N f(x).
8 \end{equation*}
```

4 Line Highlighting

You can highlight some lines in your `ffcode` environment, or can use any other additional configuration parameters from `minted` package:

<pre> 1 while (true) { 2 print("Hello!") 3 print("Enter your name:") 4 scan(x) 5 print("You name is " + x) 6 } </pre>	<pre> 6 \begin{ffcode*}{highlightlines={1,4-5}} 7 while (true) { 8 print("Hello!") 9 print("Enter your name:") 10 scan(x) 11 print("You name is " + x) 12 } 13 \end{ffcode*} </pre>
---	---

Using this second argument of `ffcode*` (with the trailing asterisk), you can provide any other options from `minted` package to the snippet.

5 Implementation

First, we parse package options with the help of `pgfopts` package:

```

1 \RequirePackage{pgfopts}
2 \pgfkeys{
3   /ff/.cd,
4   bold/.store in=\ff@bold,
5   sf/.store in=\ff@sf,
6   nopygments/.store in=\ff@nopygments,
7   noframes/.store in=\ff@noframes,
8   nonumbers/.store in=\ff@nonumbers,
9   nobars/.store in=\ff@nobars,
10  novert/.store in=\ff@novert,
11  nocn/.store in=\ff@nocn,
12 }
13 \ProcessPgfOptions{/ff}

```

Then, we disable pygments for `minted`, if necessary:

```

14 \makeatletter\ifdefined\ff@nopygments
15   \PassOptionsToPackage{draft=true}{minted}
16 \fi\makeatother

```

Then, we configure `minted` package:

```

17 \RequirePackage{minted}
18 \setminted{breaklines}
19 \setminted{escapeinside=||,mathescape}
20 \setminted{highlightcolor=gray!25}
21 \usemintedstyle{bw}

```

`ffcode` Then, we define `ffcode` environment:

```

22 \makeatletter\ifdefined\ff@nonumbers
23   \ifdefined\ff@nobars
24     \newminted[ffcode]{text}{}
25   \else
26     \newminted[ffcode]{text}{framesep=6pt,
27       framerule=1pt,rulecolor=gray,frame=leftline}
28   \fi
29 \else
30   \renewcommand{\theFancyVerbLine}{\textcolor{gray}%
31     {\tiny\oldstylenums{\ttfamily\arabic{FancyVerbLine}}}}

```

```

32 \ifdefined\ff@nocn
33 \ifdefined\ff@nobars
34 \newminted[ffcode]{text}{
35     linenos,numbersep=2pt
36 }
37 \else
38 \newminted[ffcode]{text}{
39     framesep=6pt,framerule=1pt,rulecolor=gray,
40     frame=leftline,linenos,numbersep=2pt
41 }
42 \fi
43 \else
44 \ifdefined\ff@nobars
45 \newminted[ffcode]{text}{
46     firstnumber=last,linenos,numbersep=2pt
47 }
48 \else
49 \newminted[ffcode]{text}{
50     framesep=6pt,framerule=1pt,rulecolor=gray,
51     frame=leftline,firstnumber=last,linenos,numbersep=2pt
52 }
53 \fi
54 \fi
55 \fi\makeatother

```

`\ff@print` Then, we define a supplementary macro `\ff@print`:

```

56 \makeatletter
57 \newcommand\ff@print[1]{%
58     \textnormal{%
59         \ifdefined\ff@sf\sffamily\else\ttfamily\fi%
60         \ifdefined\ff@bold\fontseries{b}\selectfont\fi%
61         #1%
62     }%
63 }
64 \makeatother

```

`\ff@rule` Then, we define supplementary command `\ff@rule`:

```

65 \makeatletter\newcommand\ff@rule
66 { \vrule height 6pt depth 1pt width 0pt}
67 \makeatother

```

`tcolorbox` Then, we use [tcolorbox](#) to define `\ff@box` command for a gray box around verbatim text block:

```

68 \makeatletter
69 \ifdefined\ff@noframes\else
70 \RequirePackage{tcolorbox}
71 \newtcbbox\ff@box{nobeforeafter,colframe=gray!80!white,
72     colback=gray!5!white,boxrule=0.1pt,arc=1pt,
73     boxsep=1.2pt,left=0.5pt,right=0.5pt,top=0.2pt,bottom=0.2pt,
74     tcbbox raise base}
75 \fi
76 \makeatother

```

`\ff@x` Then, we define `\ff@x` internal command for printing a piece of fixed-width-font text:

```

77 \makeatletter
78 \NewDocumentCommand\ff@x{v}{%
79   \ifdefined\ff@noframes%
80     \ff@rule\ff@print{#1}%
81   \else%
82     \relax\ifmmode%
83       \ff@rule\ff@print{#1}%
84     \else%
85       \ff@box{\ff@rule\ff@print{#1}}%
86     \fi%
87   \fi%
88 }
89 \makeatother

```

\ff Then, we define `\ff` macro:

```

90 \makeatletter
91 \def\ff{\ff@x}
92 \makeatother

```

`novert` Finally, we let vertical bars work similar to `\ff`, as suggested [here](#) and [here](#) (unless `novert` package option is used):

```

93 \makeatletter\ifdefined\ff@novert\else
94   \catcode'\|\active
95   \AtBeginDocument{\catcode'\|\active\protected\def|{\ff@x|}}
96   \catcode'\| 12 %
97 \fi\makeatother

```

Change History

v0.1.0		v0.6.0	
General: Initial version	3	General: Package option <code>novert</code> added, to disable redefinition of vertical bar.	3
v0.2.0		We use <code>pgfopts</code> instead of <code>xkeyval</code>	3
General: Package options <code>nonumbers</code> and <code>noframes</code> added.	3	v0.7.0	
v0.3.0		General: Package option <code>bold</code> added, to make all <code>\ff</code> pieces look bolder than usual.	3
General: Package option <code>nocn</code> added. .	3	Package option <code>sf</code> added, to make all <code>\ff</code> pieces be printed as <code>\sffamily</code>	3
v0.4.0			
General: Package option <code>nobars</code> added.	3		
v0.5.1			
<code>\ff@print</code> : Now, the command <code>ff</code> ignores italic and bold and always prints <code>\texttt</code> as it should be. . . .	4		

Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

Symbols	<code>\ff@x</code> <i>77, 91, 95</i>	<code>\pgfkeys</code> <i>2</i>
<code>\ </code> <i>94, 95, 96</i>	<code>\ffcode</code> <u><i>22</i></u>	<code>\ProcessPgfOptions</code> . <i>13</i>
	<code>\fontseries</code> <i>60</i>	<code>\protected</code> <i>95</i>
A	I	R
<code>\active</code> <i>94, 95</i>	<code>\ifdefined</code> <i>14, 22, 23, 32, 33,</i> <i>44, 59, 60, 69, 79, 93</i>	<code>\relax</code> <i>82</i>
<code>\arabic</code> <i>31</i>	<code>\ifmmode</code> <i>82</i>	<code>\renewcommand</code> <i>30</i>
<code>\AtBeginDocument</code> ... <i>95</i>		<code>\RequirePackage</code> <i>1, 17, 70</i>
C	M	S
<code>\catcode</code> <i>94, 95, 96</i>	<code>\makeatletter</code> . <i>14, 22,</i> <i>56, 65, 68, 77, 90, 93</i>	<code>\selectfont</code> <i>60</i>
D	<code>\makeatother</code> .. <i>16, 55,</i> <i>64, 67, 76, 89, 92, 97</i>	<code>\setminted</code> <i>18, 19, 20</i>
<code>\def</code> <i>91, 95</i>		<code>\sffamily</code> <i>59</i>
F	N	T
<code>\ff</code> <u><i>90</i></u>	<code>\NewDocumentCommand</code> . <i>78</i>	<code>\tcolorbox</code> <u><i>68</i></u>
<code>\ff@bold</code> <i>4, 60</i>	<code>\newminted</code> <i>24, 26, 34, 38, 45, 49</i>	<code>\textcolor</code> <i>30</i>
<code>\ff@box</code> <i>71, 85</i>	<code>\newtcbox</code> <i>71</i>	<code>\textnormal</code> <i>58</i>
<code>\ff@nobars</code> .. <i>9, 23, 33, 44</i>	<code>\novert</code> <u><i>93</i></u>	<code>\theFancyVerbLine</code> .. <i>30</i>
<code>\ff@nocn</code> <i>11, 32</i>		<code>\tiny</code> <i>31</i>
<code>\ff@noframes</code> ... <i>7, 69, 79</i>		<code>\ttfamily</code> <i>31, 59</i>
<code>\ff@nonumbers</code> <i>8, 22</i>	O	
<code>\ff@nopygments</code> <i>6, 14</i>	<code>\oldstylenums</code> <i>31</i>	U
<code>\ff@novert</code> <i>10, 93</i>		<code>\usemintedstyle</code> <i>21</i>
<code>\ff@print</code> .. <i>56, 80, 83, 85</i>	P	V
<code>\ff@rule</code> ... <i>65, 80, 83, 85</i>	<code>\PassOptionsToPackage</code> <i>15</i>	<code>\vrule</code> <i>66</i>
<code>\ff@sf</code> <i>5, 59</i>		