

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

Yegor Bugayenko
yegor256@gmail.com

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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>The function <code>fibo()</code> is recursive: 1 int fibo(int n) { 2 if (n < 2) { 3 return n; 4 } 5 return fibo(n-1)+fibo(n-2); 6 } Line no. 3 returns <code>n</code> and terminates it.</pre>	<pre>1 \documentclass{article} 2 \usepackage{ffcode} 3 \pagestyle{empty} 4 \begin{document} 5 The function <code>fibo()</code> is recursive: 6 \begin{ffcode} 7 int fibo(int n) { 8 if (n < 2) { 9 return n; (*@ \label{ln:ret} @*) 10 } 11 return fibo(n-1)+fibo(n-2); 12 } 13 \end{ffcode} 14 Line no.~\ref{ln:ret} returns <code>\ff{n}</code> 15 and terminates it. 16 \end{document}</pre>
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`\ffinput` There is also an `\ffinput` command that reads the content from a file and places it into the document, formatted exactly the same way as it would be if the `ffcode` environment were used. It may be useful to use `ffsave` environment first, which acts exactly like the `ffcode` environment but doesn't print the content. It saves it to a file instead, which may later be used by the `\ffinput` command.

2 Package Options

`samepage` If you want to avoid page breaks inside `ffcode` blocks, use the `samepage` package option.

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

- `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 the `nobars` option of the package.
- `nonumbers` To omit the line numbers, use the `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 \emph{|fibonacci()|}
9 here.
10 \end{document}

```

3 Typesetting

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

A pair of vertical lines decorates 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 `fancyvrb` and `fvextra` packages:

<pre> 1 while (true) { 2 print("Hi!") 3 print("Enter your name:") 4 scan(x) 5 print("Your name " + x) 6 } </pre>	<pre> 6 \begin{ffcode}[backgroundcolor=\color{gray!20}] 7 while (true) { 8 (*\textcolor{red}{print("Hi!")})@* 9 print("Enter your name:") 10 scan(x) 11 print("Your name " + x) 12 } 13 \end{ffcode} </pre>
--	---

Using this second argument of `ffcode`, you can provide any other options from the `listings` 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   samepage/.store in=\ff@samepage,
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 \ProcessPgfPackageOptions{/ff}

```

Then, we include the `xcolor` package:

```

14 \RequirePackage{xcolor}

```

Then, we configure the `listings` package:

```

15 \RequirePackage{listings}
16 \makeatletter
17 % See \href{https://tex.stackexchange.com/questions/706858}{the explanation}:
18 \lst@AddToHook{Init}{\setlength{\lineskip}{0pt}}
19 \makeatother

```

Then, we define a supplementary command `\ff@set`:

```

20 \makeatletter
21 \newcommand\ff@set[1]{
22   \lstset{breaklines}
23   \lstset{escapeinside={(*@}{@*)}}
24   \lstset{basicstyle={\ttfamily}}
25   \lstset{columns=fullflexible}
26   \lstset{keepspaces=true}
27   \ifdefined\ff@nonumbers\else
28     \lstset{numbers=left,numbersep=.8em,numberstyle={\tiny\sffamily\color{gray}}}
29   \fi
30   \ifdefined\ff@nobars\else
31     \lstset{frame=leftline,framerule=.05em,rulecolor={\color{gray}}}
32   \fi

```

```

33 \ifdefined\ff@nocn\else
34 \lstset{firstnumber=last}
35 \fi
36 \lstset{#1}
37 }
38 \makeatother

```

ffcode Then, we define the `ffcode` environment and its supplementary `ffcode*` counterpart:

```

39 \makeatletter
40 \lstnewenvironment{ffcode}[1] []
41 {\ff@set{#1}\ifdefined\ff@samepage\noindent\minipage{\linewidth}\fi}
42 {\ifdefined\ff@samepage\endminipage\fi}
43 \makeatother

```

ffinput Then, we define the `\ffinput` command:

```

44 \makeatletter
45 \newcommand\ffinput[2] [] {%
46 \ff@set{#1}%
47 \ifdefined\ff@samepage\noindent\minipage{\linewidth}\fi%
48 \lstinputlisting[#1]{#2}%
49 \ifdefined\ff@samepage\endminipage\fi%
50 }
51 \makeatother

```

ffsave Then, we define the `ffsave` environment:

```

52 \RequirePackage{fancyvrb}
53 \newenvironment{ffsave}[1] [ffsave.txt]
54 {\VerbatimEnvironment\begin{VerbatimOut}{#1}}
55 {\end{VerbatimOut}}

```

\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 0.6em depth 0.1em width 0em}
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=0.01em,arc=0.1em,

```

```

73     boxsep=0.12em,left=0.05em,right=0.05em,top=0.02em,bottom=0.02em,
74     tcbox 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}{\ff{#1}}
79 \makeatother

```

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

```

80 \makeatletter
81 \newcommand\ff[1]{%
82   \ifdefined\ff@noframes%
83     \ff@rule\ff@print{#1}%
84   \else%
85     \relax\ifmmode%
86       \ff@rule\ff@print{#1}%
87     \else%
88       \ff@box{\ff@rule\ff@print{#1}}%
89     \fi%
90   \fi%
91 }
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
98 \endinput

```

Change History

v0.1.0	General: Initial version	3	ignores italic and bold and always prints \texttt as it should be. . .	4	
v0.10.0	General: Package option <code>samespage</code> added, to keep all <code>ffcode</code> blocks on the same page.	3	v0.6.0	General: Package option <code>novert</code> added, to disable redefinition of vertical bar.	3
	<code>ffinput</code> : The <code>\ffinput</code> command added.	4		We use <code>pgfopts</code> instead of <code>xkeyval</code>	3
v0.10.2	General: We started to use <code>keepspaces</code> in order to guarantee correct visual render of multi-spaced content.	3	v0.7.0	General: Package option <code>bold</code> added, to make all <code>\ff</code> pieces look bolder than usual.	3
v0.11.0	<code>ffsave</code> : The <code>ffsave</code> environment added.	4		Package option <code>sf</code> added, to make all <code>\ff</code> pieces be printed as <code>\sffamily</code>	3
v0.2.0	General: Package options <code>nonumbers</code> and <code>noframes</code> added.	3	v0.8.0	<code>\ff</code> : The <code>\ff</code> command is now a normal command, not verbatim. . .	5
v0.3.0	General: Package option <code>nocn</code> added. .	3	v0.9.0	General: The <code>minted</code> package is replaced by the <code>listings</code> package. .	3
v0.4.0	General: Package option <code>nobars</code> added.	3	v0.9.2	General: All lengths and sizes are in "em" instead of "pt".	3
v0.5.1	<code>\ff@print</code> : Now, the command <code>ff</code>				

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@samepage</code>	<code>\minipage</code> <i>41, 47</i>
<code>\ </code> <i>94, 95, 96</i> <i>6, 41, 42, 47, 49</i>	
A	<code>\ff@set</code> <i>21, 41, 46</i>	N
<code>\active</code> <i>94, 95</i>	<code>\ff@sf</code> <i>5, 59</i>	<code>\NewDocumentCommand</code> . <i>78</i>
<code>\AtBeginDocument</code> . . . <i>95</i>	<code>\ff@x</code> <i>77, 95</i>	<code>\newtcbox</code> <i>71</i>
	<code>\ffcode</code> <i>39</i>	<code>\noindent</code> <i>41, 47</i>
B	<code>\ffinput</code> <i>44, 45</i>	<code>\novert</code> <i>93</i>
<code>\begin</code> <i>54</i>	<code>\ffsave</code> <i>52</i>	
	<code>\fontseries</code> <i>60</i>	P
C		<code>\pgfkeys</code> <i>2</i>
<code>\catcode</code> <i>94, 95, 96</i>	H	<code>\ProcessPgfpPackageOptions</code>
<code>\color</code> <i>28, 31</i>	<code>\href</code> <i>17</i> <i>13</i>
D	I	<code>\protected</code> <i>95</i>
<code>\def</code> <i>95</i>	<code>\ifdefined</code> <i>27,</i>	R
	<i>30, 33, 41, 42, 47,</i>	<code>\relax</code> <i>85</i>
E	<i>49, 59, 60, 69, 82, 93</i>	<code>\RequirePackage</code> . . .
<code>\end</code> <i>55</i>	<code>\ifmmode</code> <i>85</i> <i>1, 14, 15, 52, 70</i>
<code>\endinput</code> <i>98</i>	L	
<code>\endminipage</code> <i>42, 49</i>	<code>\lineskip</code> <i>18</i>	S
F	<code>\linewidth</code> <i>41, 47</i>	<code>\selectfont</code> <i>60</i>
<code>\ff</code> <i>78, 80</i>	<code>\lst@AddToHook</code> <i>18</i>	<code>\setlength</code> <i>18</i>
<code>\ff@bold</code> <i>4, 60</i>	<code>\lstinputlisting</code> . . . <i>48</i>	<code>\sffamily</code> <i>28, 59</i>
<code>\ff@box</code> <i>71, 88</i>	<code>\lstnewenvironment</code> . <i>40</i>	
<code>\ff@nobars</code> <i>9, 30</i>	<code>\lstset</code> <i>22, 23, 24,</i>	T
<code>\ff@nocn</code> <i>11, 33</i>	<i>25, 26, 28, 31, 34, 36</i>	<code>\tcolorbox</code> <i>68</i>
<code>\ff@noframes</code> <i>7, 69, 82</i>	M	<code>\textnormal</code> <i>58</i>
<code>\ff@nonumbers</code> <i>8, 27</i>	<code>\makeatletter</code>	<code>\tiny</code> <i>28</i>
<code>\ff@novert</code> <i>10, 93</i> <i>16, 20, 39, 44,</i>	<code>\ttfamily</code> <i>24, 59</i>
<code>\ff@print</code> <i>56, 83, 86, 88</i>	<i>56, 65, 68, 77, 80, 93</i>	V
<code>\ff@rule</code> <i>65, 83, 86, 88</i>	<code>\makeatother</code>	<code>\VerbatimEnvironment</code> <i>54</i>
 <i>19, 38, 43, 51,</i>	<code>\vrule</code> <i>66</i>
	<i>64, 67, 76, 79, 92, 97</i>	