

# `ffcode`: L<sup>A</sup>T<sub>E</sub>X Package for Fixed-Font Code Blocks\*

Yegor Bugayenko  
yegor256@gmail.com

2026-05-03, 0.11.2

## 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 &lt; 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  fibo()  is recursive: 6 \begin{ffcode} 7 int fibo(int n) { 8   if (n &lt; 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 \ff{n} 15 and terminates it. 16 \end{document}</pre>
--	--

`\ffinput` There is also an `\ffinput` command that reads the content from a file and places it into the document, formatted exactly as it would be if the `ffcode` environment were used. It may be useful to use the `ffsave` environment first, which acts like the `ffcode` environment but, instead of printing the content, saves it to a file that can later be read by the `\ffinput` command.

## 2 Package Options

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

---

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

package 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 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 in each snippet, use the `nocn` option of the package (it stands for “no continuous numbering”).

`bold` You can make your `\ff` pieces look bolder than usual, which may be 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 `fibo()` 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 |fibo()| 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 `fibo()` 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{|fibo()|}
9 here.
10 \end{document}
```

### 3 Typesetting

The package correctly formats low-height text, 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 use any additional configuration parameters from the `listings` package:

```
1 while (true) {
2   print("Hi!")
3   print("Enter your
4     name:")
5   scan(x)
6   print("Your name | "
7     + x)
8 }
9
10 \begin{ffcode}[backgroundcolor=\color{gray!20}]
11 while (true) {
12   (*@\textcolor{red}{print("Hi!")})@*
13   print("Enter your name:")
14   scan(x)
15   print("Your name | " + x)
16 }
17 \end{ffcode}
```

Using the optional argument of `ffcode`, you can pass 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 ex-
18   planation}:
19 \lst@AddToHook{Init}{\setlength{\lineskip}{0pt}}
20 \makeatother
```

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

```
21 \makeatletter
22 \newcommand\ff@set[1]{
23   \lstset{breaklines}
24   \lstset{escapeinside={(*@}{@*)}}
25   \lstset{basicstyle={\ttfamily}}
26   \lstset{columns=fullflexible}
27   \lstset{keepspace=true}
```

```

27 \ifdefined\ff@nonumbers\else
28   \lstset{numbers=left,numbersep=.8em,numberstyle={\tiny\sffamily\color{gray}},x
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 a supplementary command `\ff@rule`:

```

65 \makeatletter\newcommand\ff@rule
66   {\vrule height 0.6em depth 0.1em width 0em}
67 \makeatother

```

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

```

68 \makeatletter
69 \ifdefined\ff@noframes\else
70   \RequirePackage{tcolorbox}
71   \newtcbox\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 the internal `\ff@x` 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 similarly to `\ff`, as suggested [here](#) and [here](#) (unless the `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		v0.4.0	
General: Initial version . . . . .	3	General: Package option nobars added. . . . .	3
v0.10.0		v0.5.1	
General: Package option samepage added, to prevent each ffcodes block from breaking across pages. . . . .	3	\ff@print: Now, the command ff ignores italic and bold and always prints \texttt as it should be. . . . .	4
ffinput: The \ffinput command added. . . . .	4	v0.6.0	
v0.10.2		General: Package option novert added, to disable the redefinition of the vertical bar. . .	3
General: We started to use keepspaces in order to guarantee correct visual rendering of multi-spaced content. . . . .	3	We use pgfopts instead of xkeyval. . . . .	3
v0.11.0		v0.7.0	
ffsave: The ffsave environment added. . . . .	4	General: Package option bold added, to make all \ff pieces look bolder than usual. . . . .	3
v0.11.1		Package option sf added, to print all \ff pieces with \sffamily. . .	3
General: Reserve xleftmargin for line numbers so they sit inside the column instead of protruding into the page margin. . .	3	v0.8.0	
v0.2.0		\ff: The \ff command is now a normal command, not verbatim. . .	5
General: Package options nonumbers and noframes added. . . . .	3	v0.9.0	
v0.3.0		General: The minted package is replaced by the listings package. . . . .	3
General: Package option nocn added. . . . .	3	v0.9.2	
		General: All lengths and sizes are in "em" instead of "pt". . . . .	3

## 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.

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