

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

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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>fibonacci()</code> is recursive: 1   int fibonacci(int n) { 2       if (n &lt; 2) { 3           return n; 4       } 5       return fibonacci(n-1)+fibonacci(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  fibonacci()  is recursive: 6   \begin{ffcode} 7   int fibonacci(int n) { 8       if (n &lt; 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 \code{n} 15   and terminates it. 16   \end{document}</pre>
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## 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.

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\*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](#)):

<p>Sometimes it’s necessary to make code pieces look bolder, like the <code>fibonacci()</code> function in this text.</p>	<pre> 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} </pre>
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- `sf` You can change the font family of `\ff` pieces to `\sffamily`:

<p>Sometimes you may want them to look not strictly fixed-width, but more elegant, like the <code>fibonacci()</code> here.</p>	<pre> 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} </pre>
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### 3 Typesetting

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

$x = \int_{\text{home}}^N f(x).$	<pre> 6 \begin{equation*} 7 x = \int_{\text{home}}^N f(x). 8 \end{equation*} </pre>
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### 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>
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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   nopgments/.store in=\ff@nopgments,
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 disable pygments for `minted`, if necessary:

```

14 \makeatletter\ifdefined\ff@nopgments
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}{\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

```

## Change History

v0.1.0			
	General: Initial version . . . . .	3	
v0.2.0			
	General: Package options <code>nonumbers</code>		
	and <code>noframes</code> added. . . . .	3	
v0.3.0			
	General: Package option <code>nocn</code> added. . .	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	
v0.6.0			
	General: Package option <code>novert</code>		
			added, to disable redefinition of
			vertical bar. . . . .
			3
			We use <code>pgfopts</code> instead of
			<code>xkeyval</code> . . . . .
			3
			v0.7.0
			General: Package option <code>bold</code> added,
			to make all <code>\ff</code> pieces look bolder
			than usual. . . . .
			3
			Package option <code>sf</code> added, to make
			all <code>\ff</code> pieces be printed as
			<code>\sffamily</code> . . . . .
			3
			v0.8.0
			<code>\ff</code> : The <code>\ff</code> command is now a
			normal command, not verbatim. . .
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