

ffcode: L^AT_EX 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 < 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 <code>fibonacci()</code> 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 <code>ff{n}</code> 15 and terminates it. 16 \end{document}</pre>
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2 Package Options

- `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.
- `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

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

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>\fibo()</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 fibo() 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>\fibo()</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{ fibo() } 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>
----------------------------------	---

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:

```

1 while (true) {
2   print("Hi!")
3   print("Enter your name:")
4   scan(x)
5   print("You name | " + x)
6 }

```

```

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("You name | " + x)
12 }
13 \end{ffcode}

```

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   noframes/.store in=\ff@noframes,
7   nonumbers/.store in=\ff@nonumbers,
8   nobars/.store in=\ff@nobars,
9   novert/.store in=\ff@novert,
10  nocn/.store in=\ff@nocn,
11 }
12 \ProcessPgfPackageOptions{/ff}

```

Then, we configure the `listings` package:

```

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

```

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

```

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

```

```

34 \lstset{#1}
35 }
36 {}
37 \makeatother

```

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

```

38 \makeatletter
39 \newcommand\ff@print[1]{%
40 \textnormal{%
41 \ifdefined\ff@sf\sffamily\else\ttfamily\fi%
42 \ifdefined\ff@bold\fontseries{b}\selectfont\fi%
43 #1%
44 }%
45 }
46 \makeatother

```

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

```

47 \makeatletter\newcommand\ff@rule
48 {\vrule height 0.6em depth 0.1em width 0em}
49 \makeatother

```

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

```

50 \makeatletter
51 \ifdefined\ff@noframes\else
52 \RequirePackage{tcolorbox}
53 \newtcbox\ff@box{nobeforeafter,colframe=gray!80!white,
54 colback=gray!5!white,boxrule=0.01em,arc=0.1em,
55 boxsep=0.12em,left=0.05em,right=0.05em,top=0.02em,bottom=0.02em,
56 tcbox raise base}
57 \fi
58 \makeatother

```

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

```

59 \makeatletter
60 \NewDocumentCommand\ff@x{v}{\ff{#1}}
61 \makeatother

```

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

```

62 \makeatletter
63 \newcommand\ff[1]{%
64 \ifdefined\ff@noframes%
65 \ff@rule\ff@print{#1}%
66 \else%
67 \relax\ifmmode%
68 \ff@rule\ff@print{#1}%
69 \else%
70 \ff@box{\ff@rule\ff@print{#1}}%
71 \fi%
72 \fi%
73 }
74 \makeatother

```

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

```
75 \makeatletter\ifdefined\ff@novert\else
76   \catcode'\|\active
77   \AtBeginDocument{\catcode'\|\active\protected\def|\ff@x|}
78   \catcode'\| 12 %
79 \fi\makeatother

80 \endinput
```

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. . . .
			4
			v0.9.0
			General: The <code>minted</code> package is
			replaced by the <code>listings</code> package. .
			3
			v0.9.2
			General: All lengths and sizes are in
			"em" instead of "pt".
			3

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