

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>
--	---

`\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.

2 Package Options

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

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

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

- `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](#)):

<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>
---	---

- `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>
--	---

3 Typesetting

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

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

<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{keepspace=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

```

`ffcode` 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

```

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

```

52 \makeatletter
53 \newcommand\ff@print[1] {%
54   \textnormal{%
55     \ifdefined\ff@sf\sffamily\else\ttfamily\fi%
56     \ifdefined\ff@bold\fontseries{b}\selectfont\fi%
57     #1%
58   }%
59 }
60 \makeatother

```

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

```

61 \makeatletter\newcommand\ff@rule
62   {\vrule height 0.6em depth 0.1em width 0em}
63 \makeatother

```

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

```

64 \makeatletter
65 \ifdefined\ff@noframes\else
66   \RequirePackage{tcolorbox}
67   \newtcbbox\ff@box{nobeforeafter,colframe=gray!80!white,
68     colback=gray!5!white,boxrule=0.01em,arc=0.1em,
69     boxsep=0.12em,left=0.05em,right=0.05em,top=0.02em,bottom=0.02em,
70     tcbbox raise base}
71 \fi
72 \makeatother

```

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

```

73 \makeatletter
74 \NewDocumentCommand\ff@x{v}{\ff{#1}}
75 \makeatother

```

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

```

76 \makeatletter
77 \newcommand\ff[1]{%
78   \ifdefined\ff@noframes%
79     \ff@rule\ff@print{#1}%
80   \else%
81     \relax\ifmmode%
82       \ff@rule\ff@print{#1}%
83     \else%
84       \ff@box{\ff@rule\ff@print{#1}}%
85     \fi%
86   \fi%
87 }
88 \makeatother

```

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

```

89 \makeatletter\ifdefined\ff@novert\else
90   \catcode'\|\active
91   \AtBeginDocument{\catcode'\|\active\protected\def|\ff@x|}
92   \catcode'\| 12 %
93   \fi\makeatother

94 \endinput

```

Change History

v0.1.0		prints <code>\texttt</code> as it should be. . . .	4
	General: Initial version		3
v0.10.0			
	General: Package option <code>samepage</code>	added, to keep all <code>ffcode</code> blocks	
	on the same page.		3
	<code>ffcode</code> : The <code>\ffinput</code> command	added.	4
v0.10.2			
	General: We started to use	<code>keepspace</code> s in order to guarantee	
	correct visual render of	multi-spaced content.	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	
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. . .	5
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

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@sf</code> 5, 55	N
<code>\ </code> 90, 91, 92	<code>\ff@x</code> <u>73</u> , 91	<code>\NewDocumentCommand</code> . 74
A	<code>\ffcode</code> <u>39</u> , <u>44</u>	<code>\newtcbox</code> 67
<code>\active</code> 90, 91	<code>\ffinput</code> 45	<code>\noindent</code> 41, 47
<code>\AtBeginDocument</code> ... 91	<code>\fontseries</code> 56	<code>\novert</code> <u>89</u>
C	H	P
<code>\catcode</code> 90, 91, 92	<code>\href</code> 17	<code>\pgfkeys</code> 2
<code>\color</code> 28, 31	I	<code>\ProcessPgfPackageOptions</code> 13
D	<code>\ifdefined</code> 27, 30, 33, 41, 42, 47, 49, 55, 56, 65, 78, 89	<code>\protected</code> 91
<code>\def</code> 91	<code>\ifmmode</code> 81	R
E	L	<code>\relax</code> 81
<code>\endinput</code> 94	<code>\lineskip</code> 18	<code>\RequirePackage</code> 1, 14, 15, 66
<code>\endminipage</code> 42, 49	<code>\linewidth</code> 41, 47	S
F	<code>\lst@AddToHook</code> 18	<code>\selectfont</code> 56
<code>\ff</code> 74, <u>76</u>	<code>\lstinputlisting</code> ... 48	<code>\setlength</code> 18
<code>\ff@bold</code> 4, 56	<code>\lstnewenvironment</code> . 40	<code>\sffamily</code> 28, 55
<code>\ff@box</code> 67, 84	<code>\lstset</code> 22, 23, 24, 25, 26, 28, 31, 34, 36	T
<code>\ff@nobars</code> 9, 30	M	<code>\tcolorbox</code> <u>64</u>
<code>\ff@nocn</code> 11, 33	<code>\makeatletter</code> 16, 20, 39, 44, 52, 61, 64, 73, 76, 89	<code>\textnormal</code> 54
<code>\ff@noframes</code> ... 7, 65, 78	<code>\makeatother</code> 19, 38, 43, 51, 60, 63, 72, 75, 88, 93	<code>\tiny</code> 28
<code>\ff@nonumbers</code> 8, 27	<code>\minipage</code> 41, 47	<code>\ttfamily</code> 24, 55
<code>\ff@novert</code> 10, 89		V
<code>\ff@print</code> .. <u>52</u> , 79, 82, 84		<code>\vrule</code> 62
<code>\ff@rule</code> ... <u>61</u> , 79, 82, 84		
<code>\ff@samepage</code> 6, 41, 42, 47, 49		
<code>\ff@set</code> 21, 41, 46		