`ffcode`: LaTeX 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):

The function `fibo()` 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 `n` and terminates it.

```
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 < 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}
```

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

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*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](#)):

> 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

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

$$x = \int_{\texttt{home}}^{N} f(x).$$

```
6  \begin{equation*}
7  x = \int_{|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:

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

```latex
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:

```latex
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:

```latex
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:

```latex
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     \fi
32     \ifdefined\ff@nocn\else
33       \lstset{firstnumber=last}
```

```
34     \fi
35     \lstset{#1}
36   }
37   {}
38 \makeatother
```

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

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

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

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

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

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

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

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

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

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

4

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

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

81 \endinput
```

Change History

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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.