The `fvrb-ex` package

Example environments

with the `fancyvrb` package

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Abstract

This package, built above the `fancyvrb` one (from Timothy van Zandt), offer several kinds of the so-called example environments to format some code both in “verbatim” mode and in the “normal” way, below or on the side. The advantage of such environments is that the code itself is included only one time in the source code, which allow to be sure of the consistence of the two versions shown.

Some other kinds of such environments are specially devoted to graphics, allowing to give the size of them. It is possible in this case to draw also a grid.

Contents

1 Introduction 2
2 User interface 2
  2.1 Environments . . . . . . . 2
  2.2 Loading options . . . . . 3
  2.3 `fancyvrb’ options imposed 3
3 Usage examples 4
  3.1 Usage of the environments 4
  3.2 Usage of the ‘hbaw’ and ‘hcolor’ packages . . . . . . . 8
  3.3 Thanks . . . . . . . . . . 8
4 Driver file 9
5 `fvrb-ex’ code 9
  5.1 Preambule and options management . . . . . . . . 9
  5.2 The various example environments . . . . . . . . 11
  5.3 General macros . . . . . . . 12
  5.4 Example environments using the pspicture PSTricks one . . . . . . . 13
6 ‘hbaw’ code 14
7 ‘hcolor’ code 18
8 Test file 21
1 Introduction

These macros are based on some previous work of Timothy van Zandt, adapted and developed to suit my personal needs.

This package is built above the `fancyvrb` one (from Timothy van Zandt), to offer some example environments showing both the code and its result. Its main strength is that it allows to use all the power of `fancyvrb`, with its great number of customization parameters.

These macros can also be used in conjunction with the `hbaw` and `hcolor` packages, to allow to generate the verbatim code with some highlighting attributes to emphasize parts of the text. It can also produce different effects according to the choice of a colored or black and white version. This last facility was developed for slides, to allow to generate them both in color for projection and in black and white to distribute them as paper copy.

Some special environments for graphic drawings allow to define directly the size of them, without requiring to use also a picture environment. To be able to use them, the PSTricks package must be available, even if these specialized environments can be used for graphics built with another macro language than PSTricks.

**Warning!** You must be aware that it has been reported that this package doesn’t work at all on some platforms, due to the way the 8 bits characters are managed by some TeX systems.

2 User interface

**Warning!** We suppose here that you already know the `fancyvrb` package. If not, look at its own documentation!

2.1 Environments

Five new environments are defined:

**Example**: show the verbatim text and the formatted result below.

**CenterExample**: same than **Example**, but the result is centered.

**SideBySideExample**: show the formatted result on the left and the verbatim text on the right. The result is centered vertically according to the text.

**PCenterExample**: same than **CenterExample**, but the result is put inside a PSTricks `pspicture` environment. It is undefined if PSTricks is not available. It is specially devoted to graphic drawings, but not specially built with PSTricks itself. It requires to specify the dimensions of the graphic. In fact, it is the same thing than to use the **CenterExample** environment and to put the material inside a `\hTeX` picture or PSTricks `pspicture` environment, but it can be more convenient to have not to specify this one explicitly.

2
PSideBySideExample : same than SideBySideExample, but the result is put inside a PSTricks pspicture environment. The preceding comments for PCenterExample are of course also valid for it.

The syntax of the first three is:

\begin{EnvironmentName}[optional_fancyvrb_arguments]
................
\end{EnvironmentName}

and for the two last ones:

\begin{EnvironmentName}[opt_fvrb_args][(x_min,y_min)](x_{max},y_{max})
................
\end{EnvironmentName}

In these last cases, default values for x_min and y_min are 0.

2.2 Loading options

baw : allow highlighting for a black and white version. In this case the ‘hbaw’ will be loaded and it definitions will be active to emphasize texts.

color : allow highlighting for a color version. In this case the ‘hcolor’ will be loaded and it definitions will be active to emphasize texts.

bawcolor : doesn’t specify in the file if it will be a black and white or a color version to generate. A question will be asked interactively at compile time. This allow to generate at choice one of the two versions without any change in the file.

pstricks : require the loading of PSTricks (which of course must be available on the system) to be able to use the special environments devoted to graphics (but not at all mandatory PSTricks graphics).

Of course, these three keywords are mutually exclusive. If none of the baw, color or bawcolor keyword is specified, none of the supplementary files will be loaded.

2.3 ‘fancyvrb’ options imposed

The following ‘fancyvrb’ parameters are imposed:

gobble=2 : each line inside these environments is supposed to be indented by 2 characters. It only concern the aspect of the source code, which will be more readable like that.

numbersep=3pt : it will be effective only if numbers=left or numbers=right will be chosen.
commentchar=W: it is the comment character for the source text, which will not be printed in the verbatim part, but executed in the formatted part. So, it allow to have the example not generated by the code shown, which can be surprising for readers and must be used only with care in special circumstances! Character chosen is 163 (£). If it cannot be used on your system or if you have it inside your verbatim text, you must change it by yourself in the package file.

commandchars=XYZ: respectively the escape, beginning of group and end of group characters, to allow escape sequences (\LaTeX commands as font and color changes) to be applied on the verbatim text, using the ‘\texttt{hbaw}’ or ‘\texttt{hcolor}’ packages. These characters are specially chosen to probably be used by nobody in their codes... Characters chosen are those of codes 167, 181 and 182 (µ). If they cannot be used on your system or if you have some of them inside your verbatim text, you must made yourself the relevant changes in the three files of the package.

3 Usage examples

3.1 Usage of the environments

\begin{Example}
  First verbatim line.
  Second verbatim line.
  Third verbatim line.
\end{Example}

First verbatim line. Second verbatim line. Third verbatim line.

It is possible to customize the verbatim environments as in the standard way defined by ‘\texttt{fancyvrb}’, locally as argument of the environment\footnote{Take care that you must define these parameters directly for the \texttt{Example}, \texttt{CenterExample} and \texttt{SideBySideExample} environments, but that you must put them inside a \texttt{fvset} macro for the \texttt{PCenterExample} and \texttt{PSideBySideExample} ones, as in these cases you can also specify some \texttt{PSTricks} parameters, using the \texttt{psset} macro.}, or globally using the \texttt{fvset} command.

\begin{Example}[frame=lines,framerule=1mm,numbers=left]
  First verbatim line.
  Second verbatim line.
  Third verbatim line.
\end{Example}
As explained, the `PCenterExample` and `PSideBySideExample` environments, specially devoted to graphics, put their contents inside a PSTricks `pspicture` environment. So, we must define the size of it.

\begin{PCenterExample}(-0.5,-0.5)(0.5,0.5)
\setlength{\unitlength}{1cm}
\put(0,0){\circle{1}}
\end{PCenterExample}

As explained, the `PCenterExample` and `PSideBySideExample` environments, specially devoted to graphics, put their contents inside a PSTricks `pspicture` environment. So, we must define the size of it.

\begin{SideBySideExample}[xrightmargin=3cm,numbers=left]
\begin{CenterExample}[frame=single,numbers=right]
First verbatim line.
Second verbatim line.
Third verbatim line.
\end{CenterExample}
\end{SideBySideExample}

The * convention of the `pspicture` environment is not accepted here.
So, it is the same thing than to do:

```latex
\setlength{\unitlength}{1cm}
\begin{pic}
\put(0,0){\circle{1}}
\end{pic}
```

Using the `\showgrid` macro, we can require to superpose the graphic above a grid, which can help to build it as desired. The size of the picture must be at least of 1 unit in this case, and the grid is rounded to the next greater integer.

```latex
\setlength{\unitlength}{1cm}
\begin{pic}[frame=+]{(-1,-1)(1,1)}
\put(0,0){\circle{1}}
\end{pic}
```
The special $£$ character defined as the comment for ‘fancyverb’ must be used with care, as it allow to change the code run in the formatted part without showing these changes in the verbatim part. So, the code shown will not correspond any more in this case to the one which produce the result... (we must take care also to do not indent these lines, otherwise we will change the formatting...).

Nevertheless, in very special circumstances, it allow to do special tricks.

First verbatim line.
Second verbatim line.
Third verbatim line.
3.2 Usage of the ‘hbaw’ and ‘hcolor’ packages

If the option \texttt{baw}, \texttt{color} or \texttt{bawcolor} is chosen, we can use special commands to emphasize text in the verbatim formatting. It allow mainly to change the font or the color of special parts of the text.

Here we suppose that the package option \texttt{baw} for the \texttt{fverb-ex} has been chosen:

\begin{centerexample}{frame=single,numbers=right}
\hlmu First verbatim line.
\hlmu Second verbatim line.
\hlmu Third verbatim line.
\end{centerexample}

First verbatim line. Second verbatim line. Third verbatim line.

\begin{psidebysideexample}{xrightmargin=5.5cm}(-2,-1)(2,1)
\psellipse[linestyle=HLBWz\textmu dashed](2,1)
\end{psidebysideexample}

\begin{psidebysideexample}{xrightmargin=4.5cm}(-2,-1)(2,1)
\psellipse[linestyle=HLB\textmu dotted](2,1)
\end{psidebysideexample}

\psellipse[linestyle=dashed](2,1)

\psellipse[linestyle=dotted](2,1)

3.3 Thanks

I thank you Sebastian Rahtz <s.rahtz@elsevier.co.uk>, Thomas Siegel <siegel@aix520.informatik.uni-leipzig.de> and Rolf Niepraschk <niepraschk@ptb.de> for their tests and comments on preliminary versions of this package.
4 Driver file

The next bit of code contains the documentation driver file for \TeX, i.e., the file that will produce the documentation you are currently reading. It will be extracted from this file by the \texttt{docstrip} program.

\begin{verbatim}
\documentclass{ltxdoc}
\GetFileInfo{fvrb-ex.dtx}
\usepackage[baw,pstricks]{fvrb-ex}
\EnableCrossrefs
\CodelineIndex
\RecordChanges
\begin{document}
\catcode'\^^b5=\active
\def\^^b5{$\mu$}
\catcode'\^^a3=\active
\def\^^a3{$\pounds$}
\DocInput{fvrb-ex.dtx}
\end{document}
\end{verbatim}

5 \texttt{fvrb-ex} code

5.1 Preambule and options management

What we need.
\begin{verbatim}
\NeedsTeXFormat{LaTeX2e}
\def\fileversion{1.9}
\def\filedate{2010/05/16}
\ProvidesPackage{fvrb-ex}[\filedate]
\message{fvrb-ex v\fileversion, \filedate space (Denis Girou)}
\ifpstricks\else\message{\texttt{pstricks} requires \texttt{pstricks} package}\fi
\message{\texttt{PSTricks} requires \texttt{pstricks} package}
\end{verbatim}

Who we are.

Require PSTricks if specified (to define the \texttt{PCenterExample} and \texttt{PSideBySideExample} environments).

Declaration of the explicit black and white version.

\begin{verbatim}
\newif\ifpstricks\pstricksfalse
\let\LoadPStricks=\relax
\DeclareOption{pstricks}{\def\LoadPStricks{\RequirePackage{pstricks}}\pstrickstrue}
\DeclareOption{baw}{\def\ColorVersion{n}}
\end{verbatim}
Declaration of the explicit color version.
\DeclareOption{color}{\def\ColorVersion{y}}

Declaration option to choose black and white or color version.
\DeclareOption{bawcolor}{\def\ColorVersion{?}}

Process the options.
\ProcessOptions\relax
\LoadPStricks

Require the ‘fancyvrb’ package.
\ifpstricks\RequirePackage{pstricks}\fi
\RequirePackage{fancyvrb}

To ask an interactive question if necessary (code from ‘docstrip’).
\newread\ttyin
\iden#1{#1}
\def\strip#1#2 \@gobble{\def #1{\strip{#1}{#2}}}
\def\@defpar{\par}
\def\@gobble#1{\@gobble}
\Ask#1#2{\message{#2}\read\ttyin to \hash#1\@defpar\sic\@defpar\else\iden{\expandafter\strip\expandafter#1#1\@gobble\@gobble\@gobble\@gobble}\fi}

To be able to ask later to choose between color and black and white version.
\Answer@Yes
\def\Answer@Yes{y}
\Answer@No
\def\Answer@No{n}

\Question@Mark
\def\Question@Mark{?}

\Question@Color
\def\Question@Color{Color version? (y=yes)}

For the highlighting style (color or black and white version), if defined.
\Highlight@Attributes
\def\Highlight@Attributes{} % Default=\verbatim
\NoHighlight@Attributes
\def\NoHighlight@Attributes{} % Default=\verbatim

Forced choice of the black and white version.
\ifx\ColorVersion\Answer@Yes
\RequirePackage{color} % Standard LaTeX ‘color’ package
\RequirePackage{hcolor} % Color version
\fi
Forced choice of the color version.

\begin{verbatim}
\ifx\ColorVersion\Answer@No
\fi
\end{verbatim}

Choice of the highlighting style (color, black and white or nothing).

\begin{verbatim}
\ifx\ColorVersion\Question@Mark
\Ask\ColorVersion{\texttt{\Question@Color}}
\ifx\ColorVersion\Answer@Yes
\RequirePackage{color} \% Standard LaTeX 'color' package
\RequirePackage{hcolor} \% Color version
\else
\RequirePackage{color} \% Standard LaTeX 'color' package
\RequirePackage{hbaw} \% Black and white version
\fi
\fi
\end{verbatim}

Verbatim example environments must be indented by two spaces, which should be ignored.

\begin{verbatim}
\fvset{gobble=2}
\end{verbatim}

To decide later if the result must be surimpose on a grid (useful only if PSTricks is available).

5.2 The various example environments

Example Example is an environment to show the verbatim code and the result just below.

\begin{verbatim}
\def\Example{\catcode'\^^M=\active
@ifnextchar[{{\catcode'\^^M=5\Example@}{\catcode'\^^M=5\Begin@Example}}
\endExample
\def\Example@[#1]{\fvset{#1}\Begin@Example}
\end{verbatim}

\Example@ \Example@ is an internal macro to set locally the 'fancyvrb' options if needed (both for the Example, CenterExample and SideBySideExample environments).

\begin{verbatim}
\def\Example@[#1]{\fvset{#1}\Begin@Example}
\end{verbatim}

CenterExample CenterExample is an environment to show the verbatim code and the result just below, inside a center environment.

\begin{verbatim}
\def\CenterExample{\catcode'\^^M=\active
@ifnextchar[{{\catcode'\^^M=5\Example@}{\catcode'\^^M=5\Begin@Example}}
\endExample
\def\Example@[#1]{\fvset{#1}\Begin@Example}
\end{verbatim}

\Example@ \Example@ is an internal macro to set locally the 'fancyvrb' options if needed (both for the Example, CenterExample and SideBySideExample environments).
\endCenterExample is a macro for the \texttt{CenterExample} environment to close the verbatim part and to put the formatted result below, centering it.

\begin{VerbatimOut}{\jobname.tmp}\end{VerbatimOut}
\center
\Below@Example{\input{\jobname.tmp}}

\endCenterExample

\begin{SideBySideExample}
\begin{SideBySideExample} is an environment to show the verbatim code and the result on the left, using a \texttt{minipage} environment.

\catcode`\^^M=\active
\@ifnextchar[{{\catcode`\^^M=5\Example@}{\catcode`\^^M=5\Begin@Example}}
\endSideBySideExample
\endSideBySideExample

\endSideBySideExample is a macro for the \texttt{SideBySideExample} environment to close the verbatim part and to put the formatted result on the left side.

\begin{VerbatimOut}{\jobname.tmp}\end{VerbatimOut}
\SideBySide@Example{\input{\jobname.tmp}}

5.3 General macros

\Begin@Example is an internal macro to start an example environment.

\newcommand{\Begin@Example}{%\parindent=0pt\multiply\topsep by 2\VerbatimEnvironment\begin{VerbatimOut}{\jobname.tmp}}
\Below@Example is an internal macro to insert the verbatim part and to put the formatted result just below. The possible highlighting must be suppressed and the comment character deactivated before to input the formatted part.

\newcommand{\Below@Example}{%\VerbatimInput[gobble=0,commentchar=``a3,commandchars=``a7``b5``b6,numbersep=3pt]{\jobname.tmp}\catcode```a3=9\relax\NoHighlight@Attributes % To suppress possible highlighting\ifFvrbEx@Grid\vspace{5pt}\fi\ifFvrbEx@Grid\vspace{5pt}\fi
\par}

\SideBySide@Example is an internal macro to insert the verbatim part and to put the formatted result on the left side, using a \texttt{minipage} environment. The possible highlighting must be suppressed and the comment character deactivated before to input the formatted part.
5.4 Example environments using the \texttt{pspicture} PSTricks one

Of course, PSTricks must be available to be able to use them.

\begin{VerbatimOut}{gobble=0,commentchar=\textasciitilde,a3,commandchars=\textasciitilde,a7,b5,b6,numbersep=3pt,\textup{xleftmargin}=5mm,\textup{xrightmargin}=0pt}{\jobname.tmp}

\end{VerbatimOut}

\begin{pspicture}[Picture@Size]
\ifFvrbEx@Grid\FvrbExGrid\fi
\input{\jobname.tmp}
\end{pspicture}

\end{center}

\smallskip}

\texttt{PSideBySideExample} is an environment to show the verbatim code and to put the formatted result on the left side, inside a PSTricks $\texttt{pspicture}$ environment.
\endPSideBySideExample  \endPSideBySideExample is a macro for the \texttt{PSideBySideExample} environment to close the verbatim code and to put the formatted result on the left side, inside a \texttt{PSTricks pspicture} environment.

\begin{verbatim}
def\endPSideBySideExample{
  \end{VerbatimOut}
  \SideBySide@Example{
    \ifFvrbEx@Grid\vspace{5pt}\fi
    \expandafter\pspicture\Picture@Size
    \ifFvrbEx@Grid\FvrbExGrid\fi\relax
    \input{\jobname.tmp}
    \endpspicture
    \ifFvrbEx@Grid\vspace{5pt}\fi
    \smallskip}
\end{verbatim}

\Pst@Example is an internal macro to set locally the ‘fancyvrb’ options if needed (both for \texttt{PCenterExample} and \texttt{PSideBySideExample} environments).

\begin{verbatim}
def\Pst@Example[#1]{\fvset{#1}\Pst@@Example}
\end{verbatim}

\Pst@@Example is an internal macro to define the starting point of the \texttt{pspicture} environment to used.

\begin{verbatim}
def\Pst@@Example#1(#2,#3){
  \catcode'\^^M=\active
  \@ifnextchar({\catcode'\^^M=5\Pst@@@Example(#2,#3)}
  {\catcode'\^^M=5\Pst@@@Example(0,0)(#2,#3)}
\end{verbatim}

\Pst@@@Example is an internal macro to transmit the size of the \texttt{pspicture} environment to used and to call the relevant internal macro to insert the verbatim part.

\begin{verbatim}
def\Pst@@@Example(#1,#2)(#3,#4){
  \def\Picture@Size{(#1,#2)(#3,#4)}
  \Begin@Example}
\end{verbatim}

End of the code for environments using PSTricks.

\fi % End \ifx\PSTricksLoaded
\end{verbatim}

\section{‘hbaw’ code}

\begin{verbatim}
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{hbaw}[\filedate]
\message{\texttt{hbaw} v\fileversion, \filedate space (Denis Girou)}
\end{verbatim}

\section*{What we need.
\section*{Who we are.
\texttt{FvrbEx@ColoredBox} is an internal macro to print some text in bold face in a defined color, inside a colored box of another color.

\begin{verbatim}
newcommand{\FvrbEx@ColoredBox}[3]{% 
  \fboxsep=1pt\fcolorbox{#2}{#2}{\textcolor{#3}{\textbf{#1}}}}
\end{verbatim}

\texttt{Highlight@Attributes} is an internal macro to define a series of highlighting macros to emphasize text in a black and white mode. All have a corresponding version in color mode, using the `hcolor` package. We take care here of possible mathematic material.

\begin{verbatim}
def\Highlight@Attributes{% 
  Some font changes.
  \def\HLa##1{\ifmmode\mathbf{##1}\else\textbf{##1}\fi} 
  \def\HLb##1{\ifmmode\mathsl{##1}\else\textsl{##1}\fi} 
  \def\HLc##1{##1} 
  \def\HLd##1{##1} 
  \def\HLe##1{\ifmmode\mathbf{##1}\else\textbf{##1}\fi} 
  \def\HLf##1{##1} 
  \def\HLq##1{##1} 
  \def\HLr##1{##1} 
  \def\HLz##1{##1} 

  Bold text.
  \def\HLBFa##1{\ifmmode\mathbf{##1}\else\textbf{##1}\fi} 
  \def\HLBFb##1{\ifmmode\mathbf{##1}\else\textbf{##1}\fi} 
  \def\HLBFc##1{\ifmmode\mathbf{##1}\else\textbf{##1}\fi} 
  \def\HLBFd##1{\ifmmode\mathbf{##1}\else\textbf{##1}\fi} 
  \def\HLBFe##1{\ifmmode\mathbf{##1}\else\textbf{##1}\fi} 
  \def\HLBFf##1{\ifmmode\mathbf{##1}\else\textbf{##1}\fi} 
  \def\HLBFz##1{\ifmmode\mathbf{##1}\else\textbf{##1}\fi}

  Italic text (\textsl rather than \textit due to the problem of the coding of the $ character).
  \def\HLITa##1{\ifmmode\mathnormal{##1}\else\textsl{##1}\fi} 
  \def\HLITb##1{\ifmmode\mathnormal{##1}\else\textsl{##1}\fi} 
  \def\HLITc##1{\ifmmode\mathnormal{##1}\else\textsl{##1}\fi} 
  \def\HLITd##1{\ifmmode\mathnormal{##1}\else\textsl{##1}\fi} 
  \def\HLITe##1{\ifmmode\mathnormal{##1}\else\textsl{##1}\fi} 
  \def\HLITf##1{\ifmmode\mathnormal{##1}\else\textsl{##1}\fi} 
  \def\HLITz##1{\ifmmode\mathnormal{##1}\else\textsl{##1}\fi}

  Small capitals text.
  \def\HLSCa##1{\ifmmode\mathit{##1}\else\textsc{##1}\fi} 
  \def\HLSCb##1{\ifmmode\mathit{##1}\else\textsc{##1}\fi} 
  \def\HLSCc##1{\ifmmode\mathit{##1}\else\textsc{##1}\fi} 
  \def\HLSCd##1{\ifmmode\mathit{##1}\else\textsc{##1}\fi} 
  \def\HLSCe##1{\ifmmode\mathit{##1}\else\textsc{##1}\fi} 
  \def\HLSCf##1{\ifmmode\mathit{##1}\else\textsc{##1}\fi} 
  \def\HLSCz##1{\ifmmode\mathit{##1}\else\textsc{##1}\fi}
\end{verbatim}

15
Teletype writer text.
\195 \texttt{\ifmmode\mathtt{##1}\else\texttt{##1}\fi}
\196 \texttt{\ifmmode\mathtt{##1}\else\texttt{##1}\fi}
\197 \texttt{\ifmmode\mathtt{##1}\else\texttt{##1}\fi}
\198 \texttt{\ifmmode\mathtt{##1}\else\texttt{##1}\fi}
\199 \texttt{\ifmmode\mathtt{##1}\else\texttt{##1}\fi}
\200 \texttt{\ifmmode\mathtt{##1}\else\texttt{##1}\fi}
\201 \texttt{\ifmmode\mathtt{##1}\else\texttt{##1}\fi}
\202 \texttt{\ifmmode\mathtt{##1}\else\texttt{##1}\fi}

Italic and teletype writer text.
\204 \texttt{\ifmmode\mathtt{##1}\else\textsl{\texttt{##1}}\fi}
\205 \texttt{\ifmmode\mathtt{##1}\else\textsl{\texttt{##1}}\fi}
\206 \texttt{\ifmmode\mathtt{##1}\else\textsl{\texttt{##1}}\fi}
\207 \texttt{\ifmmode\mathtt{##1}\else\textsl{\texttt{##1}}\fi}
\208 \texttt{\ifmmode\mathtt{##1}\else\textsl{\texttt{##1}}\fi}
\209 \texttt{\ifmmode\mathtt{##1}\else\textsl{\texttt{##1}}\fi}
\210 \texttt{\ifmmode\mathtt{##1}\else\textsl{\texttt{##1}}\fi}

Black text inside a colored box.
\211 \FvrbEx@ColoredBox{##1}{blue}{black}
\212 \FvrbEx@ColoredBox{##1}{cyan}{black}
\213 \FvrbEx@ColoredBox{##1}{green}{black}
\214 \FvrbEx@ColoredBox{##1}{magenta}{black}
\215 \FvrbEx@ColoredBox{##1}{red}{black}
\216 \FvrbEx@ColoredBox{##1}{yellow}{black}
\217 \FvrbEx@ColoredBox{##1}{black}{black}

White text inside a colored box (we replace cyan and yellow by green because these colors are not well seen in black and white mode).
\218 \FvrbEx@ColoredBox{##1}{blue}{white}
\219 \FvrbEx@ColoredBox{##1}{green}{white}
\220 \FvrbEx@ColoredBox{##1}{green}{white}
\221 \FvrbEx@ColoredBox{##1}{magenta}{white}
\222 \FvrbEx@ColoredBox{##1}{red}{white}
\223 \FvrbEx@ColoredBox{##1}{green}{white}
\224 \FvrbEx@ColoredBox{##1}{black}{white}

Underlined text.
\225 \underline{##1}
\226 \underline{##1}
\227 \underline{##1}
\228 \underline{##1}
\229 \underline{##1}
\230 \underline{##1}
\231 \underline{##1}

Underlined text (same than preceding in this black and white version).
\232 \underline{##1}
\233 \underline{##1}
\def\HLScc##1{\underline{##1}}
\def\HLSdd##1{\underline{##1}}
\def\HLSee##1{\underline{##1}}
\def\HLSef##1{\underline{##1}}
\def\HLSez##1{\underline{##1}}

End of \Highlight@Attributes.

\NoHighlight@Attributes is an internal macro to inhibit all the highlighting macros defined by \Highlight@Attributes. It is necessary to call it before to insert the formatted part, as highlighting process must concern only the verbatim part.

\def\NoHighlight@Attributes{%

First, we re-establish the active catcodes for the verbatim mode.
\catcode`\^^a7=0\relax%
\catcode`\^^b5=1\relax%
\catcode`\^^b6=2\relax%

Desactivation of the highlighting macros.
\def\HLa##1{##1}%
\def\HLb##1{##1}%
\def\HLc##1{##1}%
\def\HLd##1{##1}%
\def\HLe##1{##1}%
\def\HLf##1{##1}%
\def\HLBFa##1{##1}%
\def\HLBFb##1{##1}%
\def\HLBFc##1{##1}%
\def\HLBFd##1{##1}%
\def\HLBFe##1{##1}%
\def\HLBFf##1{##1}%
\def\HLITa##1{##1}%
\def\HLITb##1{##1}%
\def\HLITc##1{##1}%
\def\HLITd##1{##1}%
\def\HLITe##1{##1}%
\def\HLITf##1{##1}%
\def\HLCBBa##1{##1}%
\def\HLCBBb##1{##1}%
\def\HLCBBc##1{##1}%
\def\HLCBBd##1{##1}%
\def\HLCBBf##1{##1}%
\def\HLCBBz##1{##1}%
\def\HLCBWa##1{##1}%
\def\HLCBWb##1{##1}%
\def\HLCBWc##1{##1}%
\def\HLCBWd##1{##1}%
End of \NoHighlight@Attributes.

Activation of the highlighting macros.

\Highlight@Attributes

\newcommand{\HLa}{\textcolor{blue}{##1}}
\newcommand{\HLb}{\textcolor{cyan}{##1}}
\newcommand{\HLe}{\textcolor{red}{##1}}
\newcommand{\HLf}{\textcolor{yellow}{##1}}
\newcommand{\HLq}{\textcolor{PaleGreen}{##1}}
\newcommand{\HLr}{\textcolor{SlateBlue}{##1}}
\newcommand{\HLz}{\textcolor{black}{##1}}

7 ‘hcolor’ code

What we need.

\NeedsTeXFormat{LaTeX2e}

Who we are.

\ProvidePackage[hcolor]{\filedate}

\message{'hcolor' v\fileversion, \filedate space (Denis Girou)}

\FvrbEx@ColoredUnderline is an internal macro to underline some text in color.
\FvrbEx@ColoredBox is an internal macro to print some text in bold face in a
defined color, inside a colored box of another color.

\Highlight@Attributes is an internal macro to define a serie of highlighting
macros to emphasize text in a black and white mode. All have a correspon-
ding version in black and white mode, using the ‘hbaw’ package. We do not take care
here of possible mathematic material, but it can be done...

Some font changes.

\def\HLa##1{\textcolor{blue}{##1}}
\def\HLb##1{\textcolor{cyan}{##1}}
\def\HLe##1{\textcolor{red}{##1}}
\def\HLf##1{\textcolor{yellow}{##1}}
\def\HLq##1{\textcolor{PaleGreen}{##1}}
\def\HLr##1{\textcolor{SlateBlue}{##1}}
\def\HLz##1{\textcolor{black}{##1}}
Colored bold text.

Colored italic text (\textsl rather than \textit due to the problem of the coding of the $ character).

Colored small capitals text.

Colored teletype writer text.

Colored italic and teletype writer text.

Black text inside a colored box.
White text inside a colored box.

Colored underlined text.

Colored underlined colored text (with the same color).

\nohighlightattributes is an internal macro to inhibit all the highlighting macros define by \highlightattributes. It is necessary to call it before to insert the formatted part, as highlighting process must concern only the verbatim one.

First, we re-establish the active catcodes for the verbatim mode.

Desactivation of the highlighting macros.
\documentclass{article}
\usepackage[bawcolor,pstricks]{fvrb-ex}
pstrickstrue
\usepackage[T1]{fontenc}
\usepackage[latin1]{inputenc}
\usepackage[charter]{mathdesign}
\usepackage{xcolor}
\usepackage[url]{url}
\usepackage{xcolor}

8 Test file

¡*t-fvrbex¡
\documentclass{article}
\usepackage[bawcolor,pstricks]{fvrb-ex}
pstrickstrue
\usepackage[T1]{fontenc}
\usepackage[latin1]{inputenc}
\usepackage[charter]{mathdesign}
\usepackage[url]{url}
\usepackage{xcolor}
\begin{document}
\title{Test file for the \textsf{fvrb-ex} package}
\author{Denis Girou\\CNRS/IDRIS\\Orsay -- France\}
\footnotesize email: Denis.Girou@idris.fr
\date{Version 1.2\\March 27, 1998}
\maketitle

\RecustomVerbatimEnvironment{Verbatim}{Verbatim}{gobble=2,commentchar=\textasciitilde,a3,numbers=left,numbersep=3pt,frame=single}

\section{\texttt{Example} environment}
\begin{Verbatim}
\begin{Example}
First verbatim line.
Second verbatim line.
Third verbatim line.
\end{Example}
\end{Verbatim}

\begin{Example}
First verbatim line.
Second verbatim line.
Third verbatim line.
\end{Example}

\begin{Verbatim}
\begin{Example}[frame=lines,framerule=1mm,numbers=left]
First verbatim line.
Second verbatim line.
Third verbatim line.
\end{Example}
\end{Verbatim}

\begin{Example}[frame=lines,framerule=1mm,numbers=left]
First verbatim line.
Second verbatim line.
Third verbatim line.
\end{Example}

\section{\texttt{CenterExample} environment}
\begin{Verbatim}
\begin{CenterExample}[frame=single,numbers=right]
First verbatim line.
Second verbatim line.
Third verbatim line.
\end{Example}
\end{Verbatim}

\begin{CenterExample}[frame=single,numbers=right]
First verbatim line.
Second verbatim line.
Third verbatim line.
\end{Example}

\end{document}
\begin{Verbatim}\begin{CenterExample}[frame=single,numbers=right]
First verbatim line.
Second verbatim line.
Third verbatim line.
\end{CenterExample}\end{Verbatim}

\begin{Verbatim}\begin{CenterExample}[frame=lines,numbers=left]
\texttt{HLb}\ First\ verbatim\ line.
\texttt{HLb}\ Second\ verbatim\ line.
\texttt{HLb}\ Third\ verbatim\ line.
\end{CenterExample}\end{Verbatim}

\section{\texttt{SideBySideExample} environment}

\begin{Verbatim}\begin{SideBySideExample}[xrightmargin=5cm,frame=lines,numbers=left]
First verbatim line.
Second verbatim line.
Third verbatim line.
\end{SideBySideExample}\end{Verbatim}

\begin{Verbatim}\begin{SideBySideExample}[xrightmargin=5cm,frame=single,numbers=left]
First verbatim line.
Second verbatim line.
Third verbatim line.
\end{SideBySideExample}\end{Verbatim}

\ifpstricks
\section{\texttt{PCenterExample} environment}

\begin{Verbatim}\fvset{frame=lines,framerule=0.5mm,numbers=left}\begin{PCenterExample}(-0.5,-0.5)(0.5,0.5)
\setlength{\unitlength}{1cm}
\put(0,0)\circle{1cm}\end{PCenterExample}\end{Verbatim}
\fi

% If PSTricks is available
\section{\texttt{PCenterExample} environment}

\begin{Verbatim}\fvset{frame=lines,framerule=0.5mm,numbers=left}\begin{PCenterExample}(-0.5,-0.5)(0.5,0.5)
\setlength{\unitlength}{1cm}
\put(0,0)\circle{1cm}\end{PCenterExample}\end{Verbatim}
\begin{PCenterExample}(-1,-1)(1,1)
\setlength{\unitlength}{1cm}
\put(0,0){\circle{1}}
\end{PCenterExample}
\end{Verbatim}

\section{\texttt{PSideBySideExample} environment}

\begin{Verbatim}
\fvset{frame=single,xrightmargin=5cm}
\begin{PSideBySideExample}(-2,-1)(2,1)
\psellipse*[linecolor=yellow](2,1)
\end{PSideBySideExample}
\showgrid
\begin{PSideBySideExample}(-2,-1)(2,1)
\psellipse[linestyle=dashed](2,1)
\end{PSideBySideExample}
\end{Verbatim}

\begin{Verbatim}
\fvset{frame=single,xrightmargin=5cm}
\begin{PSideBySideExample}(-2,-1)(2,1)
\psellipse*[linecolor=yellow](2,1)
\end{PSideBySideExample}
\showgrid
\begin{PSideBySideExample}(-2,-1)(2,1)
\psellipse[linestyle=dashed](2,1)
\end{PSideBySideExample}
\end{Verbatim}

\begin{Verbatim}
\fvset{frame=single,xrightmargin=5cm}
\begin{PSideBySideExample}(-2,-1)(2,1)
\psellipse*[linecolor=yellow](2,1)
\end{PSideBySideExample}
\showgrid
\begin{PSideBySideExample}(-2,-1)(2,1)
\psellipse[linestyle=dashed](2,1)
\end{PSideBySideExample}
\end{Verbatim}
\begin{PSideBySideExample}[numbers=right](-2,-1)(2,1)
\psellipse[linestyle="a7HLe``b5dotted``b6``](2,1)
\end{PSideBySideExample}

\begin{quote}
\section{\texttt{PCenterExample} and \texttt{PSideBySideExample}
environments}

\textbf{Warning!} These two environments are not demonstrated here, because PSTricks was not found on this platform.
\end{quote}

\fi

\end{document}

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.

<table>
<thead>
<tr>
<th>Symbols</th>
<th>CenterExample (environment)</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>^</td>
<td>\endCenterExample</td>
<td>80</td>
</tr>
<tr>
<td>\begin{center} Example \begin{quote} \section{PCenterExample} \texttt{PCenterExample} \end{quote}</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>\end{center}</td>
<td>\end{center}</td>
<td>127</td>
</tr>
<tr>
<td>\end{center}</td>
<td>\end{center}</td>
<td>138</td>
</tr>
<tr>
<td>\end{center}</td>
<td>\end{center}</td>
<td>80</td>
</tr>
<tr>
<td>\end{center}</td>
<td>\end{center}</td>
<td>41, 50</td>
</tr>
<tr>
<td>\begin{center} Example \end{center}</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>\begin{center} Example \end{center}</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>\begin{center} Example \end{center}</td>
<td>41, 59</td>
<td></td>
</tr>
<tr>
<td>\begin{center} Example \end{center}</td>
<td>72, 76, 79, 88, 92, 155</td>
<td></td>
</tr>
<tr>
<td>\begin{center} Example \end{center}</td>
<td>75, 83, 98, 129</td>
<td></td>
</tr>
<tr>
<td>\begin{center} Example \end{center}</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>\begin{center} Example \end{center}</td>
<td>70</td>
<td></td>
</tr>
</tbody>
</table>
The document contains a list of commands and their page numbers. The commands include `\CenterExample`, `\Picture@Size`, `\SideBySideExample`, `\Ps@Example`, `\pstricksfalse`, `\Question@Color`, `\Question@Mark`, `\showgrid`, `\SideBySide@Example`, and `\SideBySideExample`. The page numbers range from 1 to 153.

The Change History section lists the following versions:
- v0.1: General: First personal version.
- v1.7: General: First public release.
- v1.8: General: Use ‘instead of eight-bits.
- v1.9: General: Use LPPL as license and fix bug with loading pstricks (hv).

The change history also includes notes on the use of eight-bit characters.