

The ‘`pst-fr3d`’ package
A PSTricks package
for three dimensional framed boxes

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Abstract

This package allow to draw three dimensional framed boxes using the macro `\PstFrameBoxThreeD`. This is specially useful to draw 3d-like buttons.

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1 Introduction

‘`pst-fr3d`’ offer a unique main macro with few parameters to interact on it. This is just a small extension of the `\psframebox` macro.

All the relevant PSTricks parameters can be use with it, but the `linestyle`, `linecolor`, `doubleline` and `doublecolor` ones must not be used, as they would be overridden. Nevertheless, some usual parameters are not relevant for this kind of boxes and would produce “strange” results (for instance `border`, `lineararc` and `shadow`).

As usual, L^AT_EX users are supposed to have loaded the ‘`pstricks`’ package before this one, to ensure the compatibility with the standard ‘`color`’ L^AT_EX package.

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The syntax of the macro is the same than the one for the other macros for framed boxes, so simply:

```
\PstFrameBoxThreeD[optional_parameters]{stuff}
```

We can put all the valid material inside such 3d boxes, including other framed boxes.

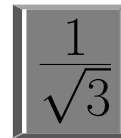
Note also that, obviously, this documentation is very color oriented, and is done to be read on a screen or a colored paper.

2 Usage

2.1 Default behavior

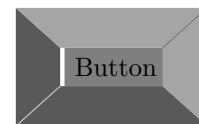
The default behavior is the following:

```
1 \PstFrameBoxThreeD{Button}\hfill
2 \PstFrameBoxThreeD{\shortstack{Yes!\Yes!\Yes!}}\hfill
3 \PstFrameBoxThreeD{\Huge$\frac{1}{\sqrt{3}}$}%
```



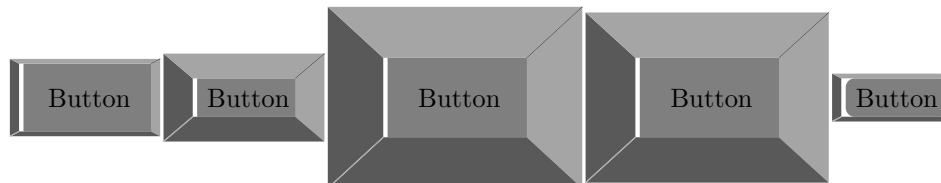
Of course, we can use all the relevant generic PSTricks parameters for the framed boxes (but not those relative to *double* lines), specially those applying to boxes:

```
1 \PstFrameBoxThreeD[doublesep=0.1]{Button}\hfill
2 \PstFrameBoxThreeD[doublesep=0.2]{Button}\hfill
3 \PstFrameBoxThreeD[doublesep=0.5]{Button}%
```



Specially look at the behavior of the `framesep`, `doublesep` and `linewidth` parameters:

```
1 \PstFrameBoxThreeD[framesep=0.3]{Button}\hfill
2 \PstFrameBoxThreeD[doublesep=0.3]{Button}\hfill
3 \PstFrameBoxThreeD[linewidth=0.3]{Button}\hfill
4 \PstFrameBoxThreeD[doublesep=0.3,linewidth=0.3]{Button}\hfill
5 \PstFrameBoxThreeD[framearc=0.5]{Button}%
```



2.2 Parameters

To change the way the boxes are drawn, we can also use **four** specific parameters:

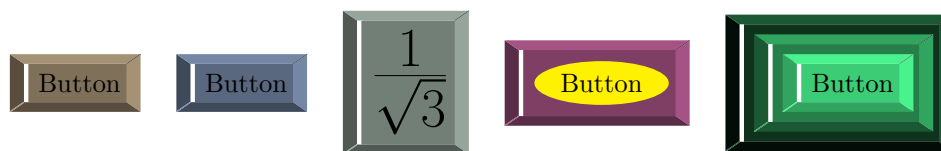
`FrameBoxThreeDColorHSB` (*real real real*) : to define the colors used, in the HSB (*hue, saturation, brightness*) model. This is a sequence of three real values, separated by spaces. This will define the color of the interior of the frame. And for the borders we will use it too, changing it brightness in light and dark.

Note also that if the *brightness* value is negative, no color will fill the interior of the box (this is useful if the general background is not white). (*Default: 0 0 0.5* — it must be three numbers between 0 and 1, but as explained the last one can be negative, which has a special meaning).

```

1 \psset{doublesep=0.1}
2 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.1 0.3 0.5]{%
3   Button}\hfill
4 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.6 0.3 0.5]{%
5   Button}\hfill
6 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.4 0.1 0.5]{%
7   \Huge$\frac{1}{\sqrt{3}}$\}\hfill
8 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.9 0.5 0.5]{%
9   \psovalbox[fillstyle=solid,fillcolor=yellow]{Button}}\hfill
10 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.4 0.7 0.2]{%
11   \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.4 0.7 0.5]{%
12     \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.4 0.7 0.8]{%
13       Button}}}%

```



```

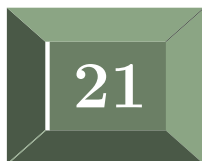
1 \psset{doublesep=0.2}
2 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0 0 0.3]{Button}\hfill
3 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0 0 0.7]{Button}\hfill
4 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0 0 -1]{Button}\hfill

```

```

5 \definecolor{MyGray}{gray}{0.85}
6 \psframe*[linecolor=MyGray](-0.3,-0.65)(2.1,0.9)
7 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0 0 -1]{Button}%

```



```

1 \PstFrameBoxThreeD%
2 [linewidth=0.2,
3 FrameBoxThreeDColorHSB=0.3 0.2 0.5]{%
4 \Huge\textcolor{white}{\textbf{21}}}

```

FrameBoxThreeDOn (boolean) : to simulate an ON / OFF button, by exchange of the dark and light colors of the borders (this will give the same result that to use a negative value for the FrameBoxThreeDBrightnessDistance parameter) (*Default: true*).

```

1 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.1 0.9 0.5]{%
2 Button}\hfill
3 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.1 0.9 0.5,
4 FrameBoxThreeDOn=false]{Button}\hfill
5 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.1 0.9 0.5,
6 FrameBoxThreeDOn=false,linewidth=0.2]{Button}%

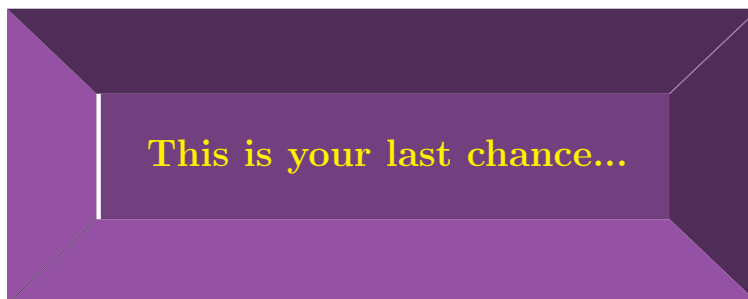
```



```

1 \PstFrameBoxThreeD[linewidth=0.5,FrameBoxThreeDOn=false,
2 FrameBoxThreeDColorHSB=0.8 0.5 0.5]{%
3 \Large\textcolor{yellow}{\textbf{This is your last chance...}}}

```



FrameBoxThreeDOpposite (boolean) : to use the same color for the left and right borders, and the same other for the bottom and top ones, or rather for left and top and right and bottom. (*Default: false*).

```

1 \psset{linewidth=0.2}
2 \newcommand{\Button}{\textcolor{white}{\textbf{Button}}}
3 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.7 0.8 0.8]{%
4   \Button}\hfill
5 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.7 0.8 0.8,
6   FrameBoxThreeDOn=false]{\Button}\hfill
7 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.7 0.8 0.8,
8   FrameBoxThreeDOpposite=true]{\Button}\hfill
9 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.7 0.8 0.8,
10  FrameBoxThreeDOn=false,
11  FrameBoxThreeDOpposite=true]{\Button}%

```



FrameBoxThreeDBrightnessDistance (real) : the distance brightness of the color used to fill the interior of the box. If this is a negative number, we will get the same effect that the one of setting FrameBoxThreeDOn to false. And if its value is 0, the borders will have obviously the same color that the interior. (*Default: 0.15* — it must be a number between -0.5 and 0.5, but the *brightness* plus and minus it must stay between 0 and 1).

```

1 \psset{doublesep=0.2}
2 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.6 0.3 0.5]{%
3   Button}\hfill % Default = 0.15
4 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.6 0.3 0.5,
5   FrameBoxThreeDBrightnessDistance=0.3]{%
6   Button}\hfill
7 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.6 0.3 0.5,
8   FrameBoxThreeDBrightnessDistance=0.5]{%
9   Button}\hfill
10 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.6 0.3 0.7,
11   FrameBoxThreeDBrightnessDistance=0.3]{%
12   Button}\hfill
13 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.6 0.3 0.5,
14   FrameBoxThreeDBrightnessDistance=-0.2]{%
15   Button}%

```



3 Examples

We give here more advanced examples.

```

1 \psset{doublesep=0.12}
2 \multido{\nButtonA=0.1+0.4}{3}{%
3   \multido{\nButtonB=0+0.05}{11}{%
4     \PstFrameBoxThreeD%
5       [FrameBoxThreeDColorHSB=\nButtonA\space 0.5 0.5,
6         FrameBoxThreeDBrightnessDistance=\nButtonB]{OK}\}

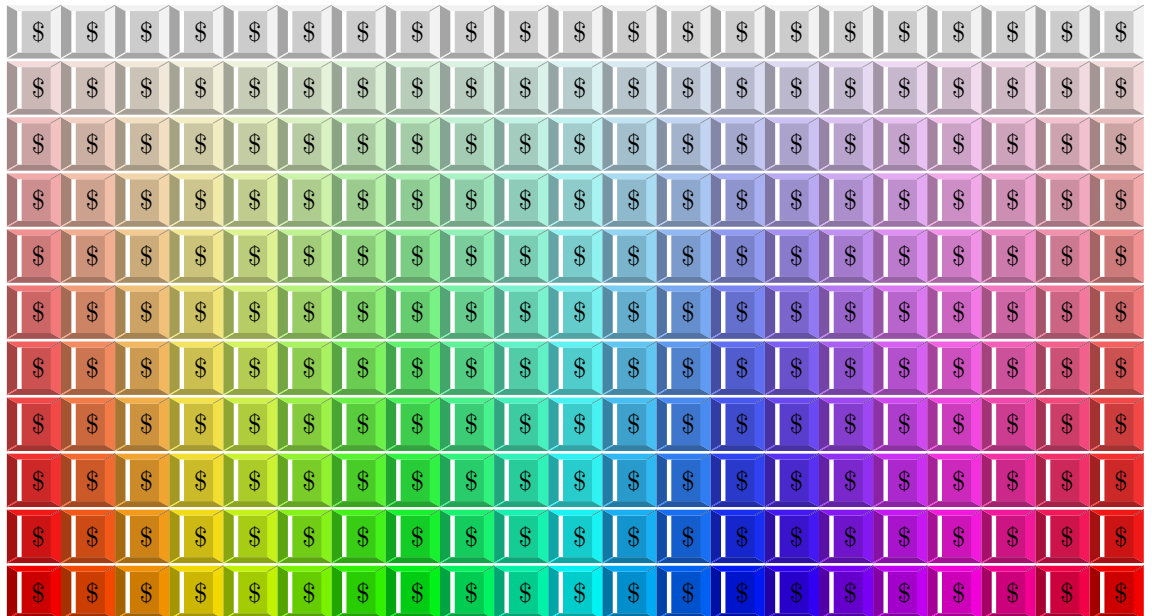
```



```

1 \psset{doublesep=0.05}
2 \multido{\nButtonA=0+0.1}{11}{%
3   \multido{\nButtonB=0+0.05}{21}{%
4     \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=%
5       \nButtonB\space \nButtonA\space 0.8]{\$}\}

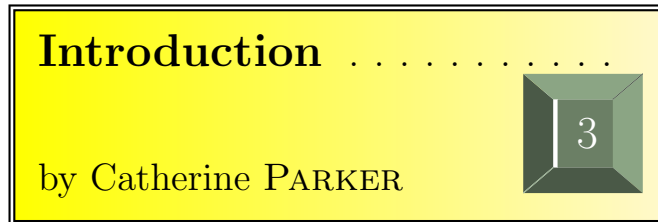
```



```

1 \psset{gradmidpoint=1,gradangle=90}
2 \psdblframebox[framesep=0.3,fillstyle=gradient,
3     gradbegin=yellow,gradend=LemonChiffon]{%
4     \shortstack[1]{%
5         \makebox[8cm]{\LARGE\textbf{Introduction}\dotfill}\
6         {\Large by Catherine \textsc{Parker}}\hfill
7         \raisebox{5.5mm}{%
8             \PstFrameBoxThreeD[linewidth=0.15,
9                 FrameBoxThreeDColorHSB=0.3 0.2 0.5]{%
10                \LARGE\textcolor{white}{3}}}}}}

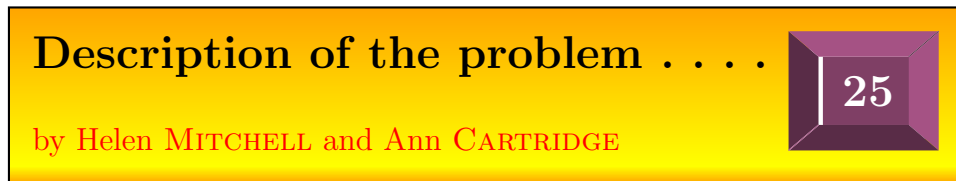
```



```

1 \psshadowbox[framesep=0.3,fillstyle=gradient,
2     gradbegin=orange,gradend=yellow]{%
3     \setlength{\tabcolsep}{0mm}%
4     \begin{tabular}{ll}
5         \makebox[10cm]{%
6             \LARGE\textbf{Description of the problem\dotfill}} &
7             \raisebox{-5mm}{%
8                 \PstFrameBoxThreeD[linewidth=0.15,
9                     FrameBoxThreeDColorHSB=0.9 0.5 0.5]{%
10                    \LARGE\textcolor{white}{\textbf{25}}}}}\ [-3mm]
11         \textcolor{red}{\large by Helen \textsc{Mitchell}
12         and Ann \textsc{Cartridge}}
13     \end{tabular}}

```



```

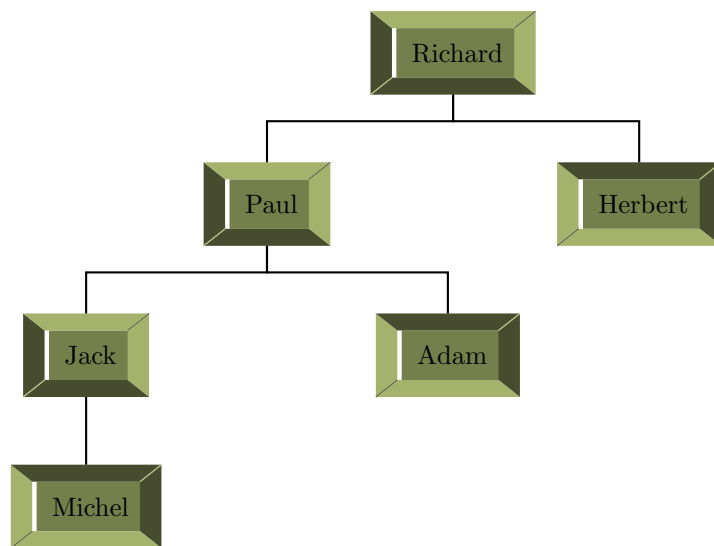
1 \newcommand{\MyNode}[2]{%
2 \TR{\PstFrameBoxThreeD[linewidth=0.1,FrameBoxThreeDOn=#2,
3     FrameBoxThreeDColorHSB=0.2 0.4 0.5,

```

```

4           FrameBoxThreeDBrightnessDistance=0.2]{#1}}
5 \renewcommand{\psedge}[2]{\ncangle{#2}{#1}}
6
7 \psset{angleB=-90,angleA=90,levelsep=2,treesep=3}
8 \pstree{\MyNode{Richard}{true}}
9     {\pstree{\MyNode{Paul}{true}}
10        {\pstree{\MyNode{Jack}{true}}
11           {\MyNode{Michel}{false}}
12            \MyNode{Adam}{false}}
13         \MyNode{Herbert}{false}}

```



```

1 \newcommand{\EntryA}[1]{%
2 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.4 0.6 0.5]{%
3   \makebox[2.2cm]{#1}}
4 \newcommand{\EntryB}[1]{%
5 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.16 1 0.8]{%
6   \makebox[0.5cm]{#1}}
7 \newcommand{\EntryC}[1]{%
8 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.7 0.2 0.8]{%
9   \makebox[1.4cm]{#1}}
10 \newcommand{\EntryD}[1]{%
11 \PstFrameBoxThreeD[FrameBoxThreeDColorHSB=0.9 0.5 0.5]{%
12   \makebox[1.4cm]{#1}}
13
14 \begin{table}[htbp]
15   \centering
16   \large\bfseries

```



```

17 \setlength{\tabcolsep}{5mm}%
18 \setlength{\belowcaptionskip}{3mm}%
19 \caption{Results of the year}
20 \PstFrameBoxThreeD[framesep=0.4,doublesep=0.5,
21     FrameBoxThreeDColorHSB=0.3 0.2 0.4]{%
22     \psset{framesep=0.3,doublesep=0.2}%
23     \begin{tabular}{lrr}
24         \\
25         \EntryA{1st Quarter}&\EntryB{723}& \\
26         \EntryA{2nd Quarter}&\EntryB{819}&\EntryC{+13 \%} \\
27         \EntryA{3rd Quarter}&\EntryB{687}&\EntryD{--16.1 \%} \\
28         \EntryA{4th Quarter}&\EntryB{894}&\EntryC{+30.1 \%} \\
29     \end{tabular}}
30 \end{table}

```

Table 1: Results of the year

1st Quarter	723	
2nd Quarter	819	+13 %
3rd Quarter	687	-16.1 %
4th Quarter	894	+30.1 %