pst-exa
Generate examples for PSTricks environments (with pdflatex);

v. 0.06

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Contents

1 Introduction

The package `pst-exa` was created to realize examples with printed code and output side by side or on top of each other. The package looks in the image directory for the source code of the examples and inserts only the image for code environment

However, creating a PDF file in a direct way with `pst2pdf` or `ltximg` is possible and the compiles whits `pdflatex`.

`PSTricks` as `PostScript` related package uses the programming language `PostScript` for internal calculations. This is an important advantage, because floating point arithmetic is no problem. Nearly all mathematical calculation can be done when running the DVI-file with GHOSTSCRIPT.

2 Loading the package

The package `pst-exa` must be loaded with one of the following options in the preamble of the document:

`\usepackage[swpl]{pst-exa}`

automatically load `showexpl` package.

`\usepackage[tcb]{pst-exa}`

automatically load `tcolorbox` package.

3 Environments

The package `pst-exa` provides two environments:

`PSTcode` to write only code that does not generate an image, this is necessary to not interrupt the order in which the images are copied by the script in the process of conversion to pdf.

`PSTexample` environment, to write only code that generates an image, keep in mind that the script that performs the extraction process does not distinguish the format given to the lines in this environment (only reads plain text) the idea is to concentrate on the image you want to extrare and then in the format of the text.

4 Programs needed

You need `pst2pdf` (or `ltximg`) whit a latest version of `Ghostscript` (9.14), `perl` (>=5.18), `pdf2svg`, `pdftoppm` and `pdftops` (from `poppler-utils` or `xpdf-utils`) for the process file.

The general syntax for the *script* is simple:

`perl pst2pdf` *file.tex* `[`*–options*`]`

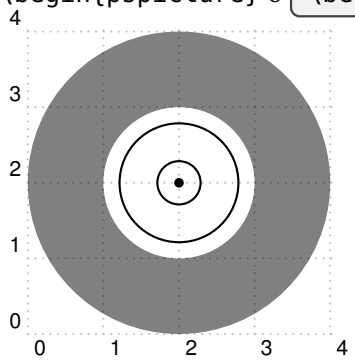
For TEXLive users:

`pst2pdf` *file.tex* `[`*–options*`]`

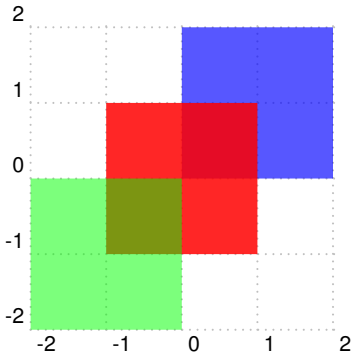
this create file-pdf-exa.pdf and file-fig-exa-1.pdf, file-fig-exa-2.pdf, file-fig-exa-….pdf

5 Examples with option `tcb`

`\begin{pspicture}` o `\begin{pspicture}[showgrid](4,4)`

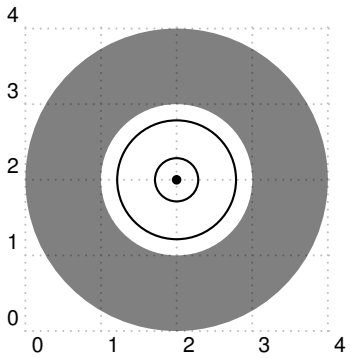


6 Test PSTexample



First example

```
\pstVerb{ 1234321 srand }
\begin{pspicture}[showgrid](-2,-2)(2,2)
\psframe*[linecolor=blue,opacity=!Rand](2,2)
\psframe*[linecolor=red,opacity=!Rand](-1,-1)(1,1)
\psframe*[linecolor=green,opacity=!Rand](-2,-2)(0,0)
\end{pspicture}
```



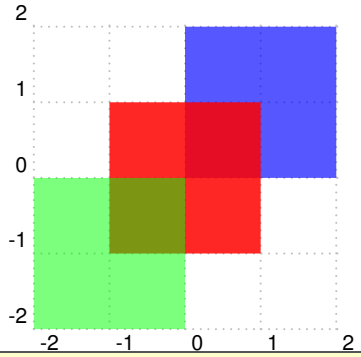

```
\begin{pspicture}[showgrid](4,4)
  \psRing(2,2){0.3}{0.8}
  \psRing*[opacity=0.5](2,2){1}{2}
\psdot(2,2)
\end{pspicture}
```

7 Test PSTcode

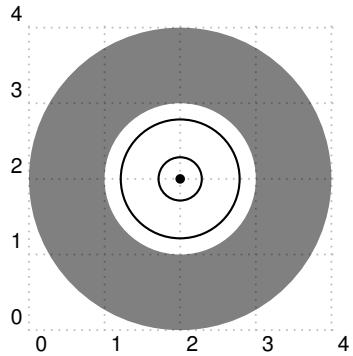
```
\pstVerb{ 1234321 srand }
\begin{pspicture}[showgrid](-2,-2)(2,2)
\psframe*[linecolor=blue,opacity=!Rand](2,2)
\psframe*[linecolor=red,opacity=!Rand](-1,-1)(1,1)
\psframe*[linecolor=green,opacity=!Rand](-2,-2)(0,0)
\end{pspicture}
```

```
\begin{pspicture}[showgrid](4,4)
  \psRing(2,2){0.3}{0.8}
  \psRing*[opacity=0.5](2,2){1}{2}
\psdot(2,2)
\end{pspicture}
```

8 Examples with option `swpl`



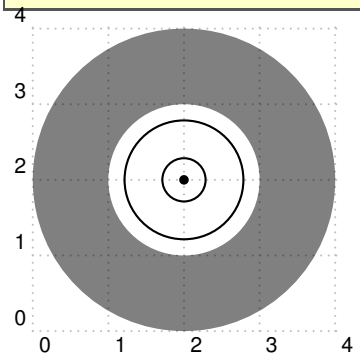

```
\pstVerb{ 1234321 srand }
\begin{pspicture}[showgrid](-2,-2)(2,2)
\psframe*[linecolor=blue,opacity=!Rand](2,2)
\psframe*[linecolor=red,opacity=!Rand](-1,-1)(1,1)
\psframe*[linecolor=green,opacity=!Rand](-2,-2)(0,0)
\end{pspicture}
```




```
\begin{pspicture}[showgrid](4,4)
  \psRing(2,2){0.3}{0.8}
  \psRing*[opacity=0.5](2,2){1}{2}
\psdot(2,2)
\end{pspicture}
```

```
\pstVerb{ 1234321 srand }
\begin{pspicture}[showgrid](-2,-2)(2,2)
\psframe*[linecolor=blue,opacity=!Rand](2,2)
\psframe*[linecolor=red,opacity=!Rand](-1,-1)(1,1)
\psframe*[linecolor=green,opacity=!Rand](-2,-2)(0,0)
\end{pspicture}
```

```
\begin{pspicture}[showgrid](4,4)
  \psRing(2,2){0.3}{0.8}
  \psRing*[opacity=0.5](2,2){1}{2}
\psdot(2,2)
\end{pspicture}
```



References

[1] Denis Girou. “Présentation de PSTricks”. In: *Cahier GUTenberg* 16 (Apr. 1994), pp. 21–70.

[2] Michel Goosens et al. *The LaTeX Graphics Companion*. Reading, Mass.: Addison-Wesley Publishing Company, 2007.

[3] Herbert Voß. *`PSTricks` – Grafik für TeX und LaTeX*. 7th ed. Heidelberg/Berlin: DANTE – Lehmanns, 2010.

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[5] Herbert Voß. *`pst-tools` – Helper functions*. `CTAN:/graphics/pstricks/contrib/pst-tools`: CTAN, 2012.

[6] Herbert Voß. *LaTeX quick reference*. Cambridge: UIT, 2012.

[7] Timothy van Zandt. *PSTricks - `PostScript` macros for generic TeX*. `http://www.tug.org/application/PSTricks`, 1993.

[8] Timothy van Zandt and Denis Girou. “Inside PSTricks”. In: *TUGboat* 15 (Sept. 1994), pp. 239–246.

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