The overpic package

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1 Introduction

The overpic environment is a combination between the \LaTeX picture environment and another \LaTeX object like an image used with the command \includegraphics of graphicx or a tabular. The resulting picture environment has the same dimensions as the included object. \LaTeX commands can be placed on the object at any position; setting a grid for the orientation is possible.

2 Usage

Put \usepackage[⟨options⟩]{overpic} in the preamble of the document. The following package options are available:

- \texttt{abs}: Absolute positioning in multiples of \texttt{\unitlength}.
- \texttt{percent}: Relative positioning; the longer dimension has value 100. The \texttt{\unitlength} will be calculated accordingly. This is the default mode.
- \texttt{permil}: Relative positioning; the longer dimension has value 1000. The \texttt{\unitlength} will be calculated accordingly.

Other options will be transferred to package \texttt{graphicx}.

\begin{overpic}[⟨options⟩]{⟨filename⟩} ⟨picture code⟩ \end{overpic}

Sets the graphic \texttt{⟨filename⟩} and puts the \texttt{⟨picture code⟩} on the top of the graphic. The picture code can be any \TeX code inclusive other graphics.

The following options are possible:

- \texttt{abs, percent, permil}: The same as the package options (true or false).
• **rel**: Other value as base for relative positioning (e.g. 10000)
• **grid**: Drawing a grid for better orientation (true or false, default: false).
• **tics**: The distance of the grid tics (default: 10).
• **unit**: Sets \unitlength (any \TeX dimension, only effective in abs mode).

\begin{Overpic}[⟨options⟩]{⟨TEX code⟩} ⟨picture code⟩ \end{Overpic}

Similar to environment overpic but instead of a graphic any \TeX code (e.g. a tabular) is set as basement of the following picture overlay.

\setOverpic{⟨options⟩}

Sets new default values.

### 3 Examples

The graphic (golfer.eps) in the following examples is part of the program ghostscript and must be accessible to \TeX. To use the command \color the package xcolor (or color) must be loaded.

#### 3.1 Environment “overpic” (absolute positioning)

\begin{overpic}[abs,unit=1mm,scale=.25,grid]{golfer.eps}
\put(3,27){\color{blue}\huge La\TeX}
\end{overpic}

![Diagram of a golfer with grid and text](image)
3.2 Environment “overpic” (relative positioning)

The longer dimension is defined as 100%.

\begin{overpic}[scale=.25,percent,grid]{golfer.eps}
  \put(5,45){\color{blue}\huge \LaTeX}
  \put(55,10){\color{red}\frame{\includegraphics[scale=.07]{golfer.eps}}}
\end{overpic}

3.3 Environment “Overpic” (absolute positioning)

To use the picture command \polygon the package pict2e must be loaded.

\begin{Overpic}[abs,unit=1mm,grid=true,tics=5]{%\bfseries%\sffamily%\
  \begin{tabular}{*{8}{p{8mm}}} H & & & & & & & He\\
  Li & Be & B & C & N & O & F & Ne\\
  Na & Mg & Al & Si & P & S & Cl & Ar\\
  K & Ca & Ga & Ge & As & Se & Br & Kr\\
  Rb & Sr & In & Sn & Sb & Te & I & Xe\\
  Cs & Ba & Tl & Pb & Bi & Po & At & Rn\\
  Fr & Ra & 112& & 114& & &\\
  \end{tabular}}%\end{Overpic}%
  \put(0,0){\color{blue}\linethickness{0.5mm}}
  \polygon(0,30)(10,30)(10,21.5)(45,21.5)(45,13)(22,13)(22,4.5)(0,4.5)
4 Implementation

1 \RequirePackage{graphicx, epic}

2 \newcommand*\OVP@scale{
3 \Reference value for rel mode (percent: 100, permil: 1000)
4 \newcommand*\OVP@scale{\z@}

All the keys:

3 \newif\Gin@grid
4 \define@key{Gin}{grid}[true]{\lowercase{\Gin@boolkey{#1}}{grid}}
5 \define@key{Gin}{tics}{\count@=#1}
6 \define@key{Gin}{unit}{\unitlength=\dimexpr#1\relax}

7 \newcommand*\OVP@calc@abs{\divide\@tempcnta by \unitlength
8 \divide\@tempcntb by \unitlength
9 \ifnum\count@=\z@\count@=10\fi
10 }

11 \newcommand*\OVP@calc@abs{\divide\@tempcnta by \unitlength
12 \divide\@tempcntb by \unitlength
13 \ifnum\count@=\z@\count@=10\fi
14 }

15 \newcommand*\OVP@calc@abs{\divide\@tempcnta by \unitlength
16 \divide\@tempcntb by \unitlength
17 \ifnum\count@=\z@\count@=10\fi
18 }

19 \newcommand*\OVP@calc@abs{\divide\@tempcnta by \unitlength
20 \divide\@tempcntb by \unitlength
21 \ifnum\count@=\z@\count@=10\fi
22 }

23 Some calculations in abs mode. \@tempcnta is the normalized width and \@tempcntb is the normalized height. \count@ is the tics value.
Some calculations in rel mode. The bigger value of width or height is the base.

\newcommand{\OVP@calc@rel}{%
  \ifnum\@tempcnta>\@tempcntb
    \divide\@tempcnta by \OVP@scale
    \unitlength=\@tempcnta sp %
    \@tempcnta=\OVP@scale
    \divide\@tempcntb by \unitlength
  \else
    \divide\@tempcntb by \OVP@scale
    \unitlength=\@tempcntb sp %
    \@tempcntb=\OVP@scale
    \divide\@tempcnta by \unitlength
  \fi
  \ifnum\count@=\z@
    \count@=\OVP@scale
    \divide\count@ by 10 %
  \fi
}%

The package options set the defaults:

\DeclareOption{percent}{\setkeys{Gin}{rel=100}}
\DeclareOption{permil}{\setkeys{Gin}{rel=\@m}}
\DeclareOption{abs}{\setkeys{Gin}{abs}}
\DeclareOption*{\PassOptionsToPackage{\CurrentOption}{graphicx}}
\ExecuteOptions{percent}
\ProcessOptions
\newsavebox{\OVP@box}

\newenvironment{overpic}[2][]{%
  \sbox{\OVP@box}{\includegraphics[#1]{#2}}%
  \count@=\z@ \Gin@gridfalse
  \setkeys{Gin}{#1}\%
  \reset{Gin}{#1}\%
}%

Reset the graphics parameter:

\let\Gin@outer@scalex\relax
\let\Gin@outer@scaley\relax
\let\Gin@angle\relax
\let\Gin@ewidth\Gin@exclamation
\let\Gin@eheight\Gin@exclamation
\def\Gin@scalex{1}\%
\let\Gin@scaley\Gin@exclamation
\OVP@picture{#1}\%
}{
\Overpic  Box 0 gets any \TeX{} code.

\newenvironment{Overpic}[2][]{\sbox\OVP@box{#2}\count@=\z@ \Gin@gridfalse\setkeys{Gin}{#1} \OVP@picture{#1}}{\endpicture}

\OVP@picture \ Put box 0 and optionally grid at the lower left corner of a picture environment.

\newcommand*{\OVP@picture}[1]{\settodepth{\@tempcnta}{\usebox\OVP@box}\settoheight{\@tempcntb}{\usebox\OVP@box}\advance\@tempcntb\@tempcnta\settowidth{\@tempcnta}{\usebox\OVP@box}\OVP@calc\picture(\@tempcnta,\@tempcntb)\put(0,0){\makebox(0,0)[bl]{\usebox\OVP@box}}\ifGin@grid\put(0,0){\normalfont\fontsize\@viipt\@viiipt\selectfont\grid(\@tempcnta,\@tempcntb)(\count@,\count@)[0,0]}\fi}

\setOverpic \ Sets new defaults.

\newcommand*{\setOverpic}[1]{\setkeys{Gin}{#1}}}

\endinput

Change History

0.60
\begin{itemize}
\item General: Converted to .dtx ....... 1 1.2
\end{itemize}

1.0
\begin{itemize}
\item \OVP@calc@rel: Suggested by Heiko Oberdiek ............. 5
\item \setkeys{bug report from 'aminophen'} ............. 5
\item Overpic: Mostly rewritten ......... 1 1.3
\item Overpic: Suggested by ......... 1
\item Overpic: Added missing \setkeys 5
\end{itemize}
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