pst-abspos
A PSTricks package for using absolute or relative coordinates of a page; v.0.2

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1 Introduction

The package `pst-abspos` allows absolute positioning of objects. In \TeX{} the actual “cursor” position is the origin of the paper plane. This makes it difficult to put objects into absolute positions. The only constant position is the origin of the paper plane, the upper left corner, which is 1 inch right and 1 inch down. This absolute PostScript origin is not the one for the textarea of \TeX{}, because it adds the horizontal margins `\oddsidemargin` and for the first line `\parskip`. In the vertical direction there are added `\topskip`, `\headheight` and `\headsep`. This is a bit confusing because there are different origins of the paper plane:

- the upper left corner of the paper
- the PostScript origin 1 inch from left and 1 inch from top
- the \TeX{} origin, adding `\oddsidemargin` or `\evensidemargin` to 1 inch and subtract `\topskip`, `\headheight` and `\headsep` from the top
- the \TeX{} relative origin, which describes the actual “cursor” position, like here.

2 Package Options

`notitlepage` When there is no titlepage it is easier to run the initialisation macros. In this case the user has only to set the package option.
`absolute` the origin is the upper left paper corner
`lowerleft` the origin is mirrored to the lower left of the paper plane
`PostScript` the origin is 1 inch from the left and 1 inch from the top of the paper
`relative` the origin is the upper left text area

Especially the `lowerleft` option may be useful. Together with the `absolute` option the origin of the paper plane is at the lower left corner (see section 8).

3 The Macros

The package tries to set the origin immediately after a newpage. This is not possible with a title because of an additional `\newpage` of the `titlepage` environment. In this case the user should controll the setting manually with the macros:

`\pstSetAbsoluteOrigin` the new origin is the upper left corner of the paper
`\pstSetPostScriptOrigin` the new origin is 1 inch from left and 1 inch from top of the upper left corner of the paper
`\pstSetRelativeOrigin(x,y)` the new origin is the current point for \((0;0)\). All other values are relative to this one.
`\pstPutAbs[\text{Options}](x,y)\{text\}` puts any object depending to the option at \((x;y)\).

The first two macros have to be used immediately after a newpage.
3.1 Optional Parameters

The \pstPutAbs macro can be called with all valid \pstricks options and additionally with \texttt{position=position}, where \texttt{position} can be replaced by the usual placing values \texttt{lt, lC, lB, lb, ...} of the well known \texttt{rput} macro. Important is the setting of the \texttt{unit} parameter, because \texttt{pst-abspos} knows nothing about the unit. A valid call may be like

\begin{verbatim}
\pstPutAbs[unit=1in,position=lC](1,-1){\%\qdisk(0,0){5pt}\textcolor{red}{~PostScript Origin}}
\end{verbatim}

4 Examples

It is no problem to switch between the different origin settings when calling the macros immediately after a \texttt{\newpage}. If you want to set the origin at the “cursor” position, then the macro can be called just on “cursor” position.
5 Absolute Coordinates

The point (0,0) is in the upper left corner and is set by the package option `absolute`.

\usepackage[absolute]{pst-abspos}

\pstPutAbs(1,-2){\qdisk(0,0){4pt}\red Point(1,-2)}
\pstPutAbs(0,-2){\qdisk(0,0){4pt}\red Point(0,-2)}
\pstPutAbs(0,-1){\qdisk(0,0){4pt}\red Point(0,-1)}
\pstPutAbs(1,-10){\qdisk(0,0){4pt}\red Point(1,-10)}
\pstPutAbs(3,0.5){\qdisk(0,0){4pt}\blue Point(3,0.5)}
\pstPutAbs(3,-5){\qdisk(0,0){4pt}\blue Point(3,-5)}
\pstPutAbs(1,-10){\qdisk(0,0){4pt}\red Point(1,-10)}
6 Relative Coordinates

The point (0,0) is set as the relative origin and is set by the package option `relative`.

\usepackage[relative]{pst-abspos}

This relative point is the beginning of the first textline, which depends to all margins.
It allows to place the relative origin elsewhere depending to the relative point (0,0).

\pstPutAbs(1,-2){\qdisk(0,0){4pt}\red Point(1,-2)}

\pstPutAbs(0,-2){\qdisk(0,0){4pt}\red Point(0,-2)}

\pstPutAbs(0,-1){\qdisk(0,0){4pt}\red Point(0,-1)} \pstPutAbs(1,-10){\scalebox{0.5}{\qdisk(0,0){4pt}\red Point(1,-10)}

\pstPutAbs(3,0.5){\qdisk(0,0){4pt}\blue Point(3,0.5)}

\pstPutAbs(3,-5){\qdisk(0,0){4pt}\blue Point(3,-5)}

\pstPutAbs(1,-10){\qdisk(0,0){4pt}\red Point(1,-10)}

\pstPutAbs(3,-5){\qdisk(0,0){4pt}\blue Point(3,-5)}

\pstPutAbs(1,-10){\qdisk(0,0){4pt}\red Point(1,-10)}
The point (1in, -1in) is set as the absolute PostScript origin and is set by the package option relative.

\usepackage[PostScript]{pst-abspos}

The coordinates (1in; -1in) have some historical background and have nowadays no more real sense. If all horizontal and vertical margins inside \TeX are set to zero, then this point is (0,0).

point (1in, -1in) is set as the absolute PostScript origin and is set by the package option relative.

Point(1, -2)

\pstPutAbs(1,-2){\qdisk(0,0){4pt}\red Point(1,-2)}

Point(0, -2)

\pstPutAbs(0,-2){\qdisk(0,0){4pt}\red Point(0,-2)}

Point(0, -1)

\pstPutAbs(0,-1){\qdisk(0,0){4pt}\red Point(0,-1)}

\pstPutAbs(1,-10){\qdisk(0,0){4pt}\red Point(1,-10)}

Point(3, 0.5)

\pstPutAbs(3,0.5){\qdisk(0,0){4pt}\blue Point(3,0.5)}

Point(3, -5)

\pstPutAbs(3,-5){\qdisk(0,0){4pt}\blue Point(3,-5)}

Point(1,-10)

\pstPutAbs(1,-10){\qdisk(0,0){4pt}\blue Point(1,-10)}
8 Absolute Coordinates with an Origin in the Lower Left

The point (0,0) is in the lower left corner and is set by the package option \texttt{lowerLeft}. This is only useful for absolute coordinates. This is the reason why this option should imply also the option \texttt{absolute}.

\texttt{\usepackage[lowerLeft,absolute]{pst-abspos}}

\begin{verbatim}
\psset{unit=1in}\
\pstPutAbs(0,0){\qdisk(0,0){4pt}\textcolor{red}{\texttt{Origin}}}\
\verb|\pstPutAbs(1,2){\qdisk(0,0){4pt}\textcolor{red}{\texttt{Point(1,2)}}|\verb|}\n\end{verbatim}

\section{Absolute PostScript Coordinates with an Origin in the Lower Left}

The origin point (0,0) is in the lower left corner with 1in from the left and 1inch from the bottom and is set by the package option \texttt{lowerLeft}. This is only useful for \Index{absolute coordinate}s.

\begin{verbatim}
\begin{Xverbatim}
\usepackage[lowerLeft,PostScript]{pst-abspos}
\end{Xverbatim}
\end{verbatim}

\newpage
9 List of all optional arguments for \texttt{pst-abspos}

<table>
<thead>
<tr>
<th>Key</th>
<th>Type</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>position</td>
<td>ordinary</td>
<td>[none]</td>
</tr>
</tbody>
</table>

\begin{itemize}
  \item \texttt{\pstPutAbs(0,2)\{\qdisk(0,0){4pt}\red Point(0,2)}
  \item \texttt{\pstPutAbs(0,1)\{\qdisk(0,0){4pt}\red Point(0,1)} \texttt{\pstPutAbs(1,10)\{\scalebox{0.4}{\qdisk(0,0){4pt}\red Point(1,10)}
  \item \texttt{\pstPutAbs(3,-0.5)\{\qdisk(0,0){4pt}\blue Point(3,-0.5)}
  \item \texttt{\pstPutAbs(3,5)\{\qdisk(0,0){4pt}\blue Point(3,5)}
\end{itemize}

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