The pspicture package*

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1 Introduction

`pspicture` is a re-implementation, and extension of, LaTeX's `picture` environment, using PostScript `\special`'s. This has several advantages, mainly that lines of arbitrary slope and thickness may be specified, and there is no limit on the size of the circles that may be drawn[1].

One disadvantage is that the picture can no longer be previewed on a `dvi` previewer, such as `xdvi`. To help with this problem, a companion style option, `texpicture`, may be used while developing a document, this uses the standard picture commands as much as possible, and silently omits any picture objects that can not be drawn with standard LaTeX.

A second disadvantage, is that a `dvi` file produced with `pspicture` will contain embedded `\special` commands. These commands will only work with the driver program for which they were intended. This makes the `dvi` file less portable. `pspicture` will by default use `\special`'s set up for Rokicki's `dvips` program, although it should be easy to modify the code to work with other PostScript drivers. A DocStrip option for a version of `dvi2ps` is included with this distribution.

1.1 Commands Available

`\circle` `\circle*` Use as described in the LaTeX book but with no maximum diameter. The thickness of the circle is altered by the `\linethickness` command. The size of the circle produced by `\circle*` is not affected by `\linethickness`, so it is not the same as 'filling in' the circle drawn by `\circle`.

`\oval` Use as described in the LaTeX book, but as there is no maximum diameter for the circular arcs, the oval (in the absence of the optional `[tr]` etc) always consists of two semi-circular arcs joined by a pair of parallel lines. To obtain a 'rectangle with rounded corners' the oval command has a second optional argument (given first !).
`\oval[20](100,200)[t]`
Produces the top half of an oval with quarter circles of radius 20*unitlength. If

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[1]There is a certain amount of overlap between this style option and the widely available `eepic` option. However when I wrote the first version of this, in 1989, I was not aware of `eepic`, and `pspicture` has been reasonably popular in Manchester, even though `epic` and `eepic` have been installed.

unitlength = 1pt then this is equivalent to the standard oval command. In general `\oval[R](x,y)` uses circular arcs of radius $\min(R, x/2, y/2)$.

`\line` `\vector` Use as described in the LaTeX book but with no restriction on the available slopes. The thickness of a sloping line is altered by the `\linethickness` command.

`\Line` `\Vector` New forms of the line and vector commands.
`\put(x1,y1){\Line(x2,y2)}`
produces a line from (x1,y1) to (x1+x2,y1+y2) and similarly for `\Vector`.

`\Curve` Like `\Line` except that it produce a curve!
`\put(x1,y1){\Curve(x2,y2){m}}`
produces a curve from (x1,y1) to (x1+x2,y1+y2). the amount of curvature is controlled by m but try 1 or -1 first. m does not have to be an integer. Negative numbers curve the opposite way to positive numbers.

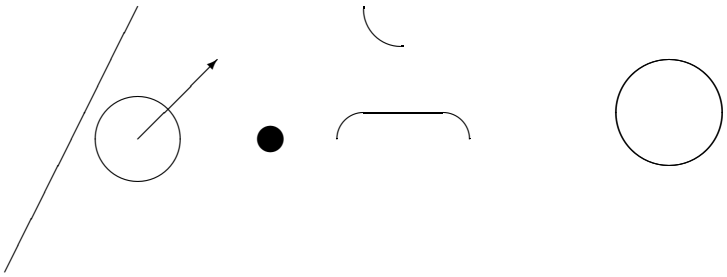
`\thinlines` `\thicklines` `\linethickness` These commands alter the thickness of **all** lines including slanted lines and circular arcs.

`\arrowlength` A new command which specifies the size of the arrowhead drawn by the `\vector` and `\Vector` commands. Like `\linethickness` it does not get multiplied by `\unitlength`. At present the arrowhead is triangular. If a head with curved sides more like the standard LaTeX head is required the definition of `!A` in pspicture.ps should be altered.

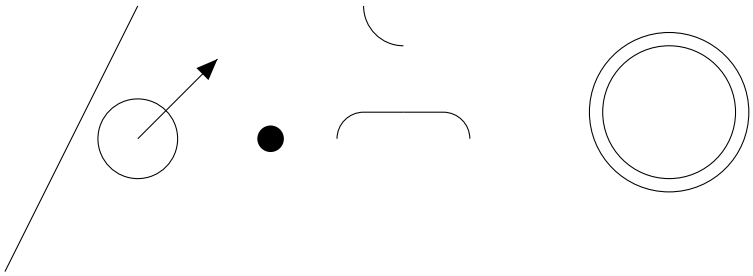
Other `picture` mode commands are not altered by this style, and so may be used, just as described in the LaTeX book. These include: `\put`, `\multiput`, `\makebox`, `\framebox`, `dashbox` and `\shortstack`.

2 Examples

A picture built with LaTeX's line and circle fonts.



The same picture built with PostScript `\special`'s.



Some extra features not available using the standard picture mode.