Testing PGF and TikZ support in DocOnce

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Abstract

Quick demo of how to make figures with TikZ in DocOnce.

1 Ideas

TikZ is a very strong tool for making figures in LaTeX. DocOnce supports such figures: if a figure file `myfig` exists in a version `myfig.tikz`, DocOnce will, in case of `latex` or `pdflatex` output, utilize the `myfig.tikz` figure directly. The problem is what do to with other output formats. In HTML formats (`html` and `sphinx`), one can use a corresponding SVG version of the figure, and for more primitive formats, one needs a plain PNG version. DocOnce will automatically create such versions of the figure and store them along with `myfig.tikz`, as is done when other figure formats need automatic conversion.

2 A modest beginning

Figure 1: This shape is commonly referred to as a *straight line*.

The most fundamental shape is the line in Figure 1. See the source code for how this TikZ figure is defined in LaTeX as a file `line.tikz` (and included in DocOnce through `FIGURE: [line] caption`). Such lines can be combined to form other shapes, e.g., a square as in Figure 2.

A grid can also be made from straight lines.

A circle, however, cannot be formed by a finite number of straight lines. It requires special code.

kgh 1: filenames identical to words in the texts have been known to cause problems **hpl 2**: Not anymore?

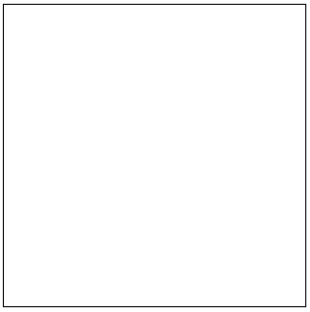


Figure 2: This square is formed by four straight lines.

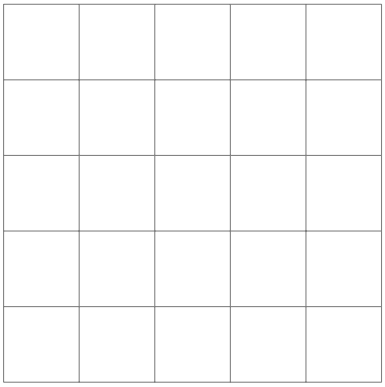


Figure 3: This is a grid with 5 x 5 cells

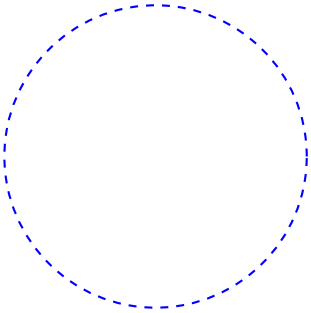


Figure 4: This circle is drawn in blue with a dashed line.

3 More advanced figures

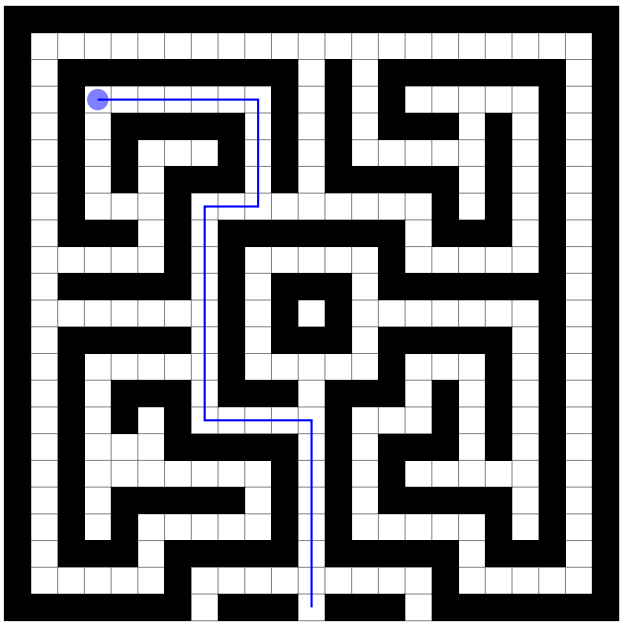


Figure 5: A maze can be drawn by combining the elements above.

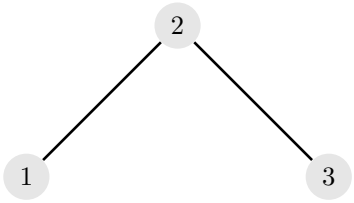
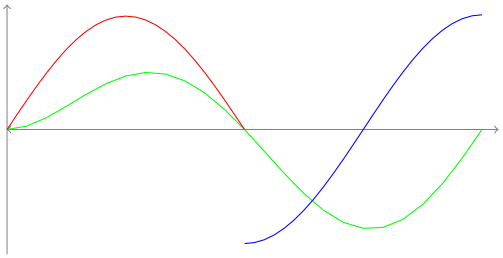


Figure 6: TikZ is quite well suited to draw graphs.

4 Plotting functions

TikZ can be used to plot functions. The next figure will be inlined.



See the source code for how you make this figure.

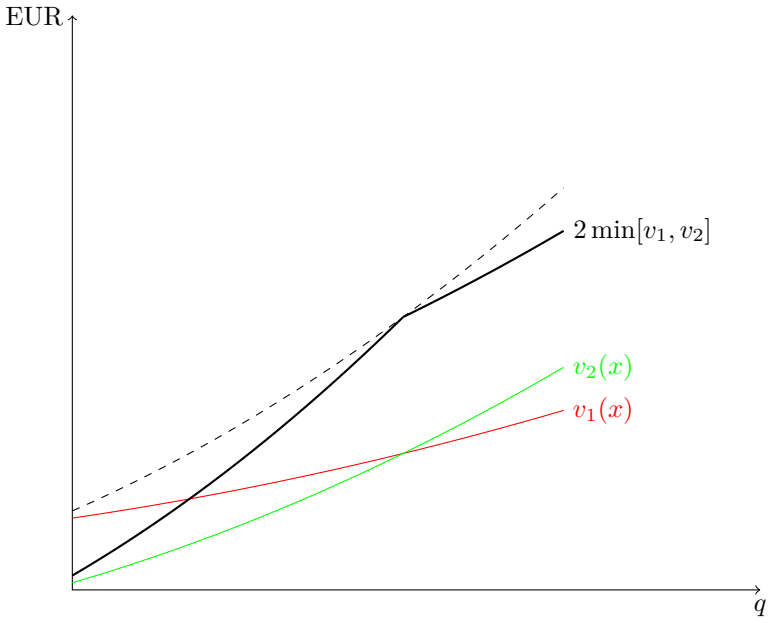


Figure 7: The functions can even be labeled!

All details are in the source code.