Demonstration of how to include Tikz and Inkscape images in a LaTeXdocument

Tom Ravalde

June 5, 2016

Here are examples of how to include graphics in a LaTeXdocument, using the Tikz package, or the Inkscape vector graphics editor.

1 Tikz

Figure 1 shows an image made using the Tikz package. To see the commands, take look at the TeXsource for this document. There are lots of templates for different sorts of diagrams (e.g. flowcharts, 3D shapes, mindmaps etc.) at `http://www.texample.net/tikz/examples/all/`.

2 Inkscape

This is now my preferred method. It's generally easier, and yet the output quality is equivalent to Tikz, if you get it right.

1. Draw your image in Inkscape. Include text using a text box. For text, type is if you are writing directly into LaTeX, so for example you can enclose text inside `$` signs for mathematics, or use commands such as `\textbf` etc.
2. Save your image in SVG (scale-vector graphics format). This will be the version you edit. Here, the image is saved as `image.svg`.

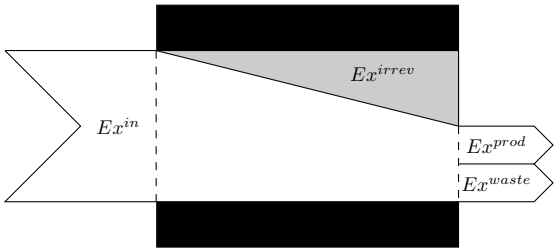


Figure 1: An image created using the Tikz package.

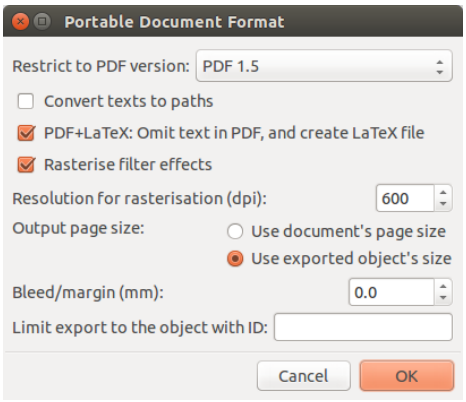


Figure 2: Saving an Inkscape SVG image to the appropriate format.

3. The next step is to convert your Inkscape SVG into two separate files:

   (a) A PDF file, which will be all the non-text components of your SVG image (e.g. `image.pdf`)

   (b) A pdf_tex file, which will be TeX code which imports the PDF image, and adds the text in the correct location (e.g. `image.pdf_tex`). This makes the text consistent with the font and options, as defined for the rest of the document.

   There are two ways to create these files – one more manual, the other more nerdy. Once they have been created, you can include the image in the document using `\input{image.pdf_tex}` within a figure environment, as in Figure 3.

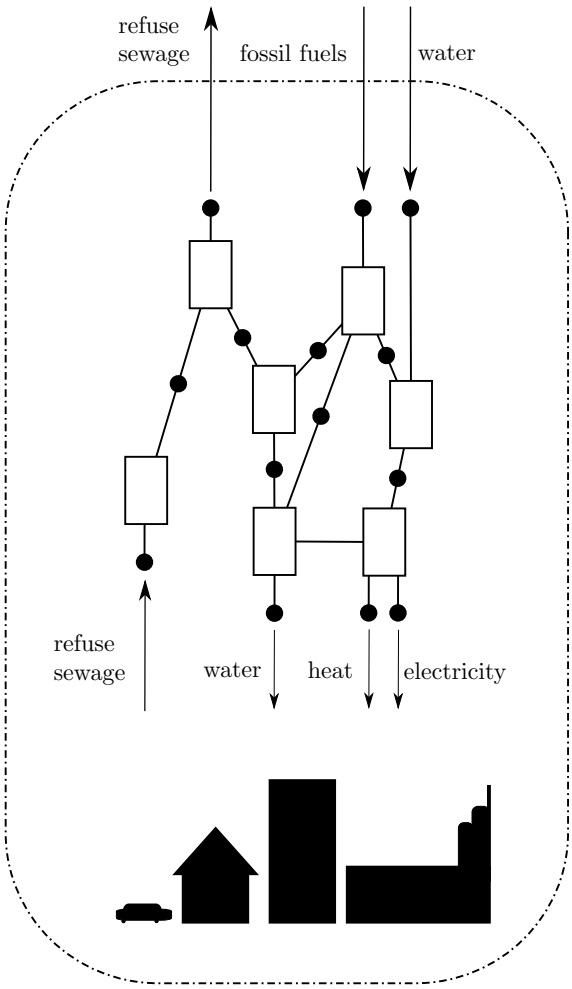
2.1 The manual method

In Inkscape, use the File menu to saveas a PDF. A box will come up allowing you to set some options. Tick the checkbox which says `PDF+LaTeX: Omit text in PDF, and create LaTeX file` (Figure 2). Then click okay, and this will create both the PDF and the pdf_tex file.

2.2 The nerdier method

If you prefer to work at a UNIX-based command line (either directly, or by using a bash script, or Makefile), then you can convert the SVG file to the PDF and pdf_tex files with the following command:

```
inkscape -D -z --file=image.svg --export-pdf=image.pdf --export-latex
```



(A) Top
The top represents the flow of resources into and out of a city.

(B) Middle
The middle represents the network of resource management processes (boxes) through which resources (circles) flow, in order to meet demand for goods and services at the bottom.

(C) Bottom
The bottom represents user demands for electricity, heating and water, and the generation of solid waste and wastewater.

Figure 3: An image created as an SVG using Inkscape, and included into a LaTeX document.