PGM files

The file format known as "plain PGM" , which stands for "Portable Greymap", is a text-based image format for greyscale images. PGM files normally have the extension ".pgm". Here is an example of a PGM file:

```
P2
# A diagonal line 10 pixels wide and 10 pixels high
10 10
255
0 255 255 255 255 255 255 255 255 255
255 0 255 255 255 255 255 255 255 255
255 255 0 255 255 255 255 255 255 255
255 255 255 0 255 255 255 255 255 255
255 255 255 255 0 255 255 255 255 255
255 255 255 255 255 0 255 255 255 255
255 255 255 255 255 255 0 255 255 255
255 255 255 255 255 255 255 0 255 255
255 255 255 255 255 255 255 255 0 255
255 255 255 255 255 255 255 255 255 0
```

An image is represented by a greyscale value for each *pixel* or "dot" on the screen. The values range from 0 for black up to some fixed maximum for white (255 is a common choice). The file is organized as follows:

1. The string "P2" followed by whitespace.
2. The width followed by whitespace.
3. The height followed by whitespace.
4. The maximum (white) greyscale value, followed by whitespace.
5. Lines containing *width* x *height* numbers representing the pixel values, starting with the first row, separated by whitespace.

Note that the pixel values for a given row are not required to be on a single line, and the spec recommends a maximum of 70 characters per line. In addition, *comments* may appear among items 2, 3, or 4, where any line starting with a pound sign ("#") is a comment.

Viewing PGM files

Images are no fun unless you can see them. The simplest way to view a PGM image file is to download the free image viewer **Irfanview** from http://www.irfanview.com/. By default, the viewer will attempt to "smooth out" the pixels when rendering the image, so to see the individual pixels more clearly, go to Edit --> Show Paint dialog.

You can also use Irfanview to create PGM files from existing images. Open an image using Irfanview, select "Save As", and select the type PGM from the "Save as type" drop-down menu at the bottom. In the options dialog, be sure to click the radio button for "Ascii encoding" in order to get a text file. (If you don't see the options dialog, check the box "Show options dialog" at bottom.) See the screenshot below: