Quilting bee

The YGQA(A-M)[1] are considering a new design to welcome the Century of the Anchovy (a few years late).

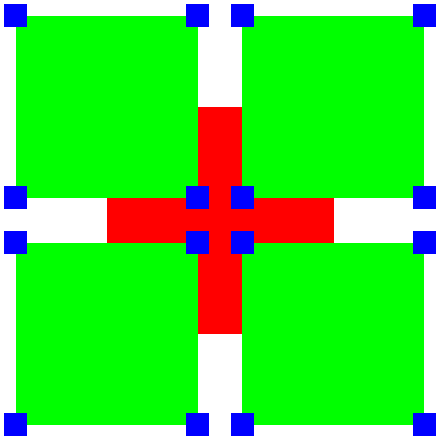
"We should start with a big central square"

"And then other, smaller squares of a different colour, centred at its corners"

"And more, at their corners, and more at theirs, and ..."

Like Nanny Ogg and her spelling of bananananana, the YGQA(A-M) are clear about how to start, but not quite about where to stop.

Of the Twilight the Darkness drew up an example with three layers, red, green and blue, with the green squares 80% as big as the red one (in linear dimensions), and the blue ones 10% as big as the red one.



Predictably, it did not meet with universal approval. So the YGQA(A-M) have approached you to produce a way of examining other possibilities easily.

Task

Write a program that produces a representation of a quilt design on the screen or as a graphics file in a common format. The input to the program will be a sequence of lines of the form:

`scale r g b`

where `scale` is a scale parameter for the current layer, and `r g b` are values from 0-255 representing red, green and blue levels in the RGB scale. For instance, the example above could be produced from input:

[1] Young Goblins' Quilting Association (Ankh-Morpork)

```
1.0 255 0 0
0.8 0 255 0
0.1 0 0 255
```

Note that some radical members of the YGQA(A-M) do not necessarily agree that later squares need to be smaller than earlier ones, nor that the first square necessarily has a scale parameter of 1.0. Part of your problem is to ensure that whatever scale parameters are given, your representation fits, and nearly fills, a reasonably sized window (or on a single page if using a graphics file).

Input should be taken from `stdin`, or (if you are using some sort of a GUI) by pasting the *entire* sequence of lines into a text component. That is, it should not be necessary to enter the lines or values one at a time.

Standards

For an achieved standard the program must operate as specified.

Merit criteria include well-structured and readable code, and some flexibility in the program's use (e.g., supporting multiple output formats).

Excellence criteria include some significant extension to the functionality or scope of the program.

Objectives

1.1, 1.3, 2.2, 2.9, 3.1-3.6

(Individual)

Postscript

If it was not entirely obvious, this étude is intended as an *homage* to Terry Pratchett who passed away on March 12, 2015, and more particularly to his masterly creation, the DiscWorld.