Circles Report **Daniel Bent**
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Introduction

We were tasked to write a program that draws a circle, draws 7 circles in that, and 7 circles within those circles. This should continue for 3 generations, or a given number of generations (supplied to stdin).

The colour of each layer is determined randomly and relative ratio size of a circle to its parent is , unless specified in the input file

Cirlce Generation

I chose to implement this program iteratively, by having the generate method draw 7 circles within a supplied circle passed as an argument. generate works by initially drawing the 3 circles that run across the horizontal centre line of the circle. Some basic trigonometry calculations determine the location of the 4 remaining circles. The sizes of the circles are determined in relation to the dimensions of the given (parent) circle.

File Input

A file is supplied to stdin. Whether one has been supplied or not is determined by the program. If no file is supplied, the program will run with defaults. If one is supplied, each line is split and the ratio value is separated from the RGB colour values. All values from the file are stored in a list and are used, line by line, for each successive generation.

Output

The graphics were drawn using the graphics.py library, that also supplies the window that the graphic is output to. The image is also supplied as a FILETYPE file. This allows for resizing of the output image.