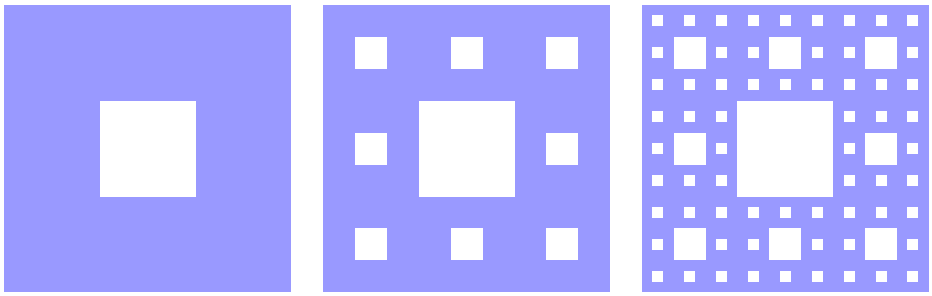
Fractal squares

A fractal image can be created by taking a large filled square, and progressively removing smaller and smaller squares from it. More specifically, in the first stage, the overall square is divided into 9 smaller squares arranged in a 3×3 grid, and the central smaller square is removed. The 8 remaining smaller squares are likewise divided into 9 squares, and the process repeats. The first three generations of fractal are shown below:



Generation 0 Generation 1 Generation 2

Tasks

1. Write a program that accepts the number n as its first command line argument and then uses a recursive approach to produce a representation of an n^{th} generation fractal square on the screen or as a graphics file in a common format. In either case it should be suitably scaled—meaning the diagram should basically fill a decent sized window, or a single sheet of paper.
2. Now write a program that takes the same inputs and produces the same output, but uses an iterative algorithm.
3. Explain the good and bad points about each approach.

(1 point, Individual)