# HW1 Report

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## 1 Problem 1 [code is available at ]

In this problem I wrote a python code to make Koch snowflake fractal. Here I assume that the length of initial segment is equal to 1; but a completely similar apraoch can be used for an arbitrary initial length, a. For building this fractal I used following rules:

1. Scale all lengths with scaling factor $\frac{1}{3}$.
2. Rotate all segments in the anticlockwise direction for 60 degrees. Then Scale all lengths with scaling factor $\frac{1}{3}$. Finaly transfer the shape to the +x direction for $\frac{1}{3}$.
3. Rotate all segments in the clockwise direction for 60 degrees. Then Scale all lengths with scaling factor $\frac{1}{3}$. After all, transfer the shape to the +x direction for $\frac{1}{2}$ and then transfer it to the +y direction for $\frac{\sqrt{3}}{6}$.
4. Finally Scale all lengths with scaling factor $\frac{1}{3}$ and transfer them for $\frac{2}{3}$ to the +x direction.