

PS1
Recursive Graphics (Sierpinski's Triangle)

Assignment Summary:

Responsible of writing a program to plot a Sierpinski triangle, Sierpinski triangle was described by a polish mathematician Waclaw Sierpinski in 1915, this complex pattern can be developed with a small simple short recursive program. This program needs to call the Sierpinski function once, draw the first triangle then call the function three more times. After that have every other function that is called to call three more functions until a base case is hit. After the program is running, a separate pattern is required to be made using the same algorithm

What I learned:

How to use the SFML library to recursively draw images to the screen, and small algorithms can create complex design patterns,

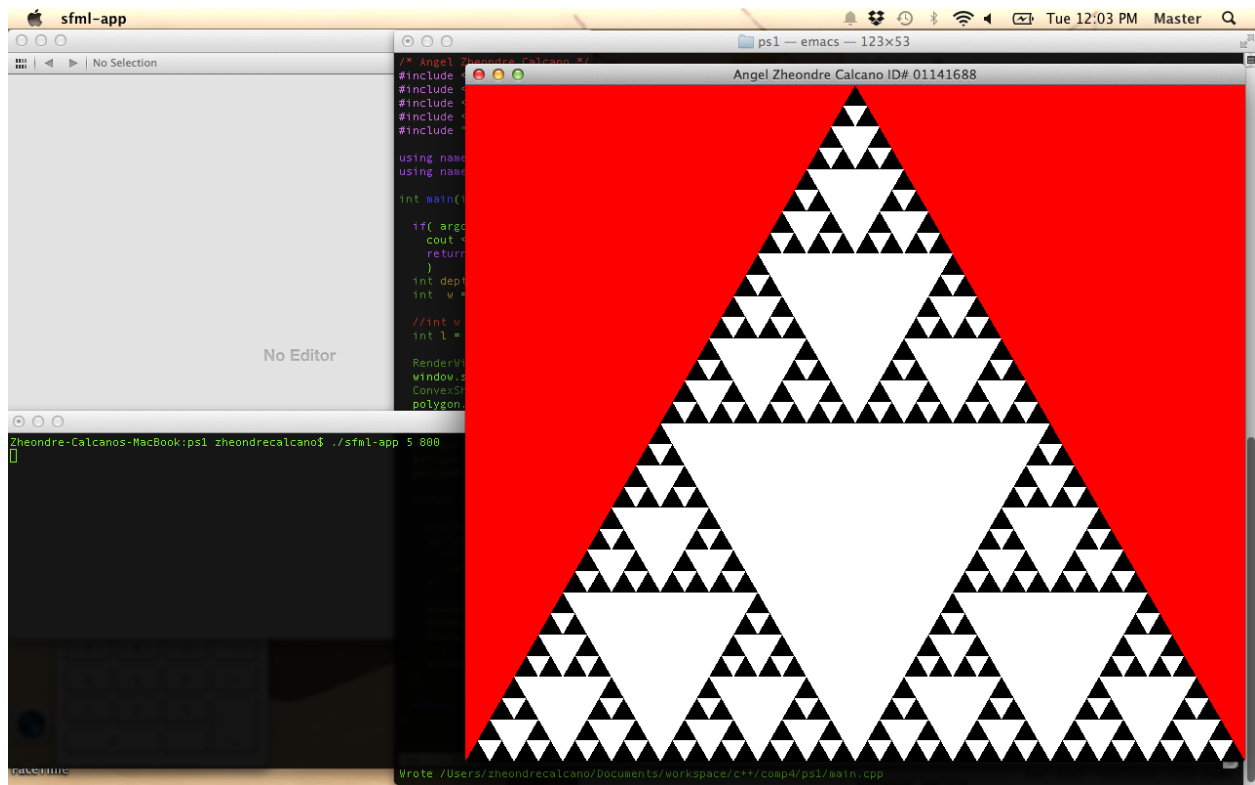
Design:

Used the SFML library to make shapes and print them on the screen, followed the algorithm to have the proper design.

What I accomplished : Sierpinski's Triangle

After many hours of debugging I was able to complete both, using a pattern with circles was a bit weird, and I had to change the math in order to use circles, to be honest I didn't like the way my pattern came out but I didn't have enough time to go back and change it. I designed a math algorithm for sierpinski to find the lowest midpoint of the current triangle. Once it is found find the two points that is found from $\text{side} \cdot \sin(60)$ and $\text{side} \cdot \cos(60)$. Once that is found pass the location of the midpoints of the three smaller triangles into three other function calls.

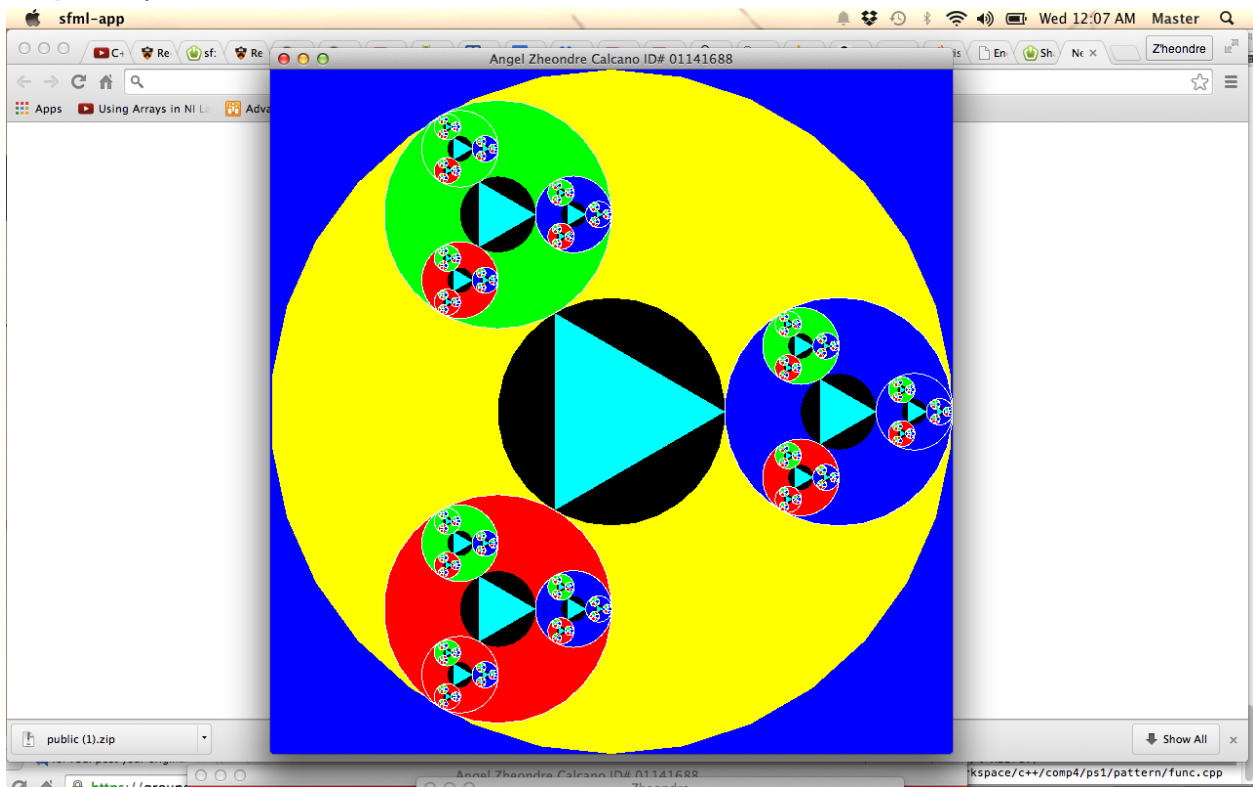
Output: Sierpinski's Triangle & MyCircles



What I accomplished : My Circles

For the second program I used a similar method. But I did the design based on 120 degrees, instead of 60 degrees. Only thing hard about it was trying to figure out why I kept getting zero when I casted a value as a double or an int. Too much time was spent on debugging. What was annoying was that I had to specify the origin of each circle when I set the position for that shape. If not specified it would be set to 0,0. I didn't use any data structures and I specified the frames to be set to one.

Output: MyCircles



What I learned:

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Design:

Used the SFML library to make shapes and print them on the screen, followed the algorithm to have the proper design.