# REPORT

**Reflection**:

1. What was the easiest and hardest part of this assignment?

   The hardest part of this assignment was understanding how the recursive function was working to create the desired image. I often found myself initially creating a more complicated function than was needed, which could be frustrating. To combat this, it helped to draw and number the predicted steps in the recursive function or to include a print statement so I could better see what was happening as the function ran. The easiest part of this assignment was creating the menu, which I have done many times before with previous assignments. However, on this particular assignment I utilized an infinite while loop to create a menu that continues to run after the initial input.

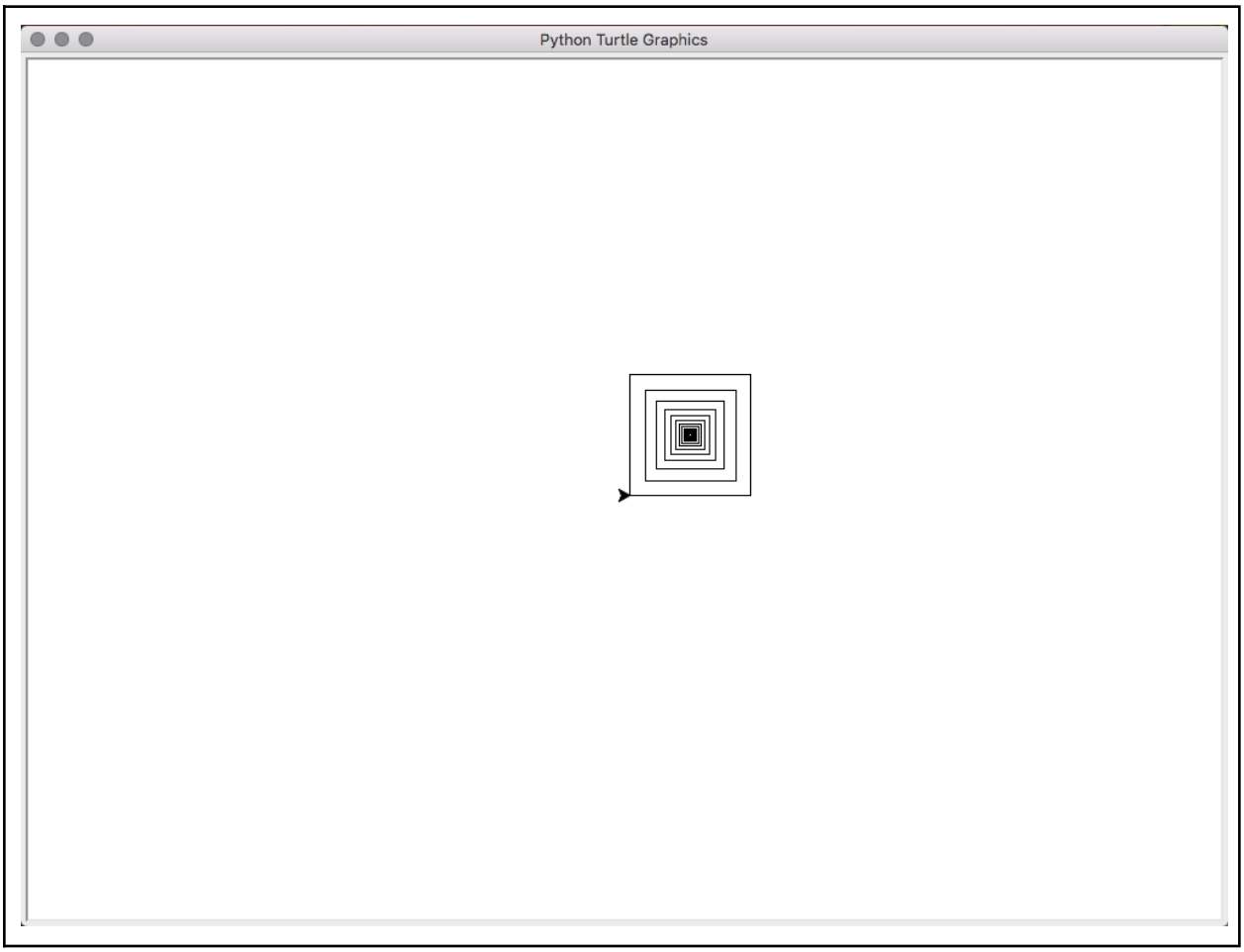
2. What did you learn?

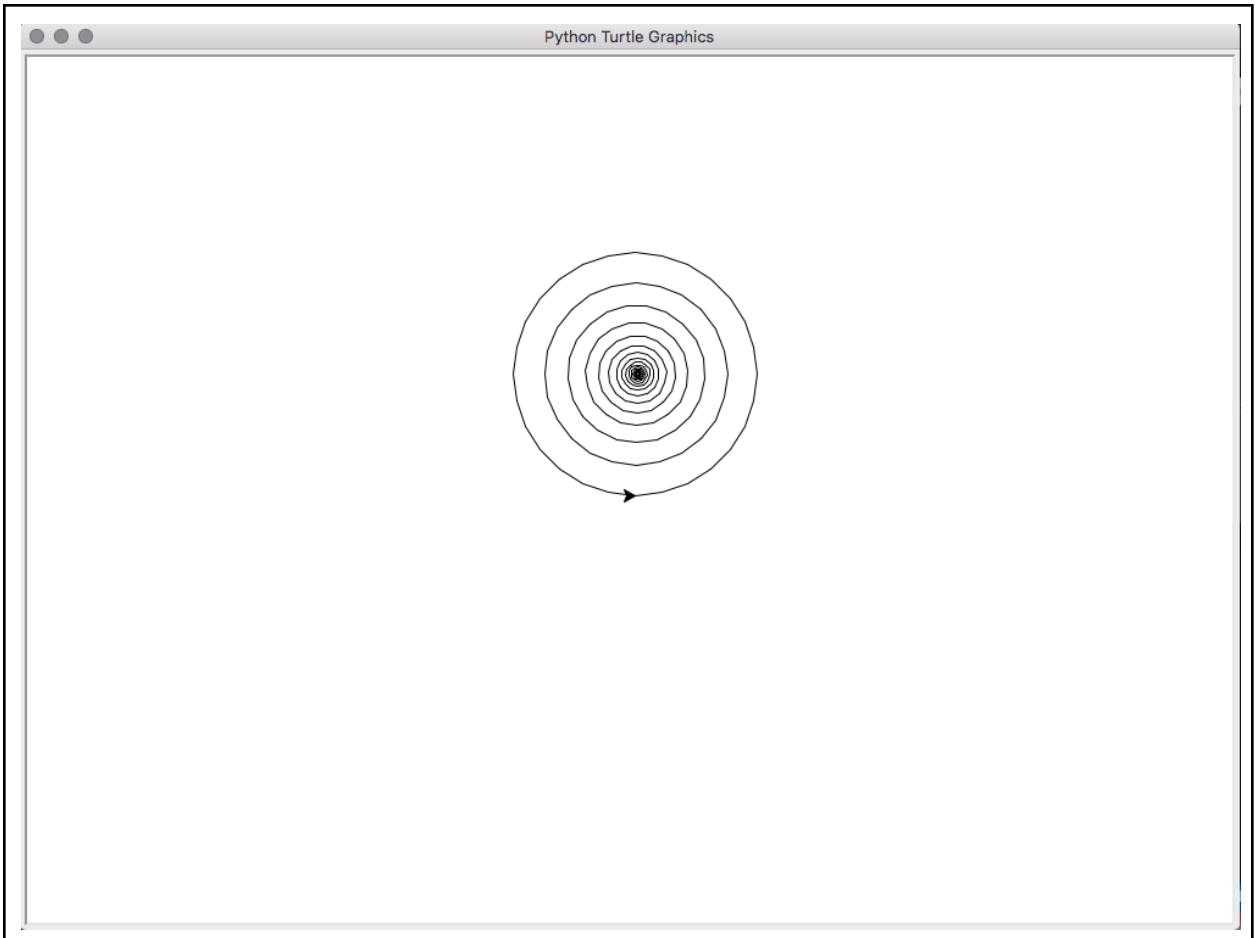
   I had an opportunity to practice using recursion, which was very helpful in better understanding it. I particularly found the box tree to be a useful demonstration for how recursion works. In this scenario, you could see the function run until the condition is met, then switch to the second function. However, the initiation of the second function doesn't terminate the first. Rather, the first function will continue checking against the condition and then switching to the second function after each iteration.

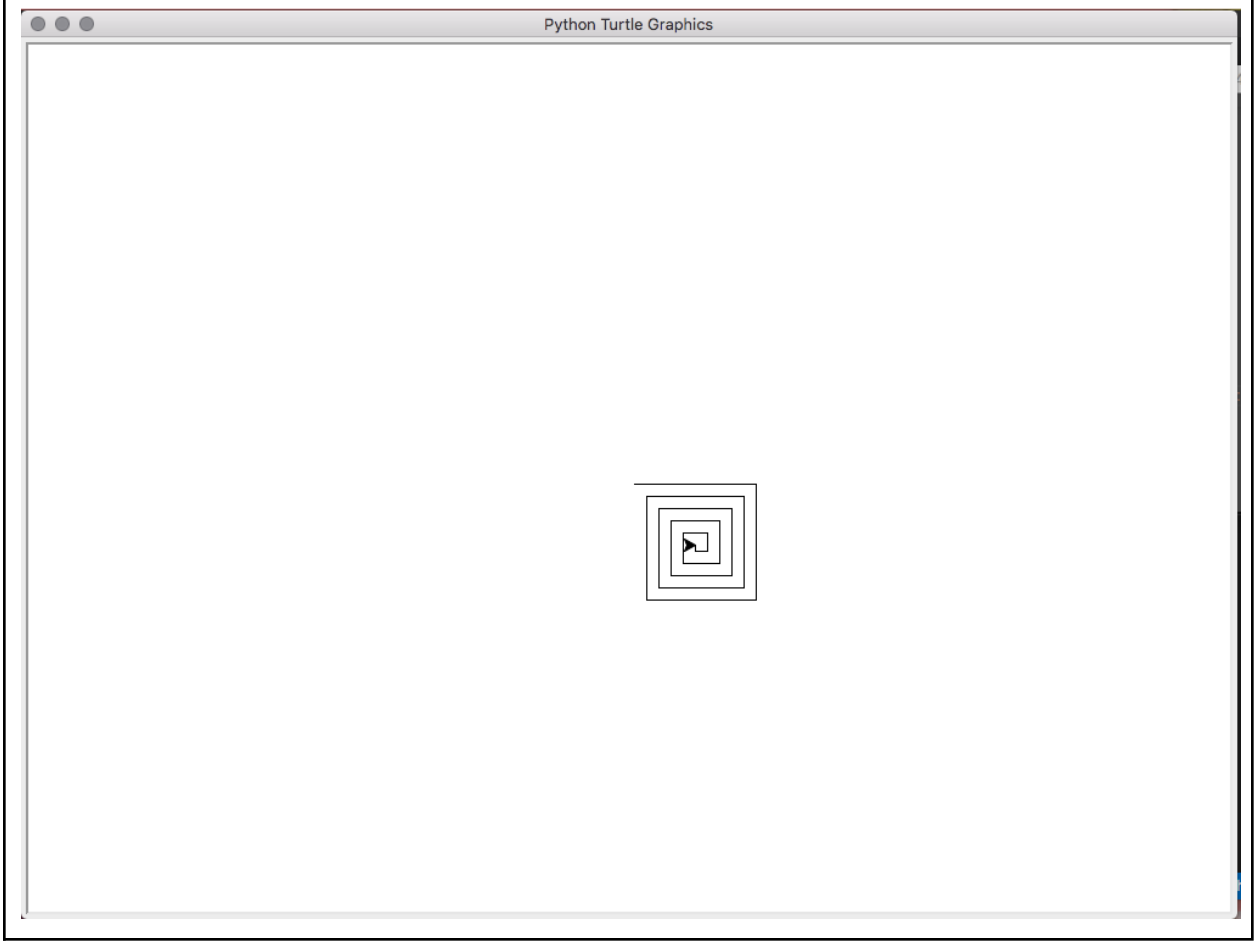
3. Did the recitation strategy session help at all?

   I do think the strategy session was helpful, but it was difficult to communicate what we were trying to do without explicitly specifying the code you would use. It's very easy to slip from pseudo code to actual code, and in the future I feel like having teams just work on the first problem in the lab together might be more useful and give everyone a stronger start.

**Shapes:**




Python Turtle Graphics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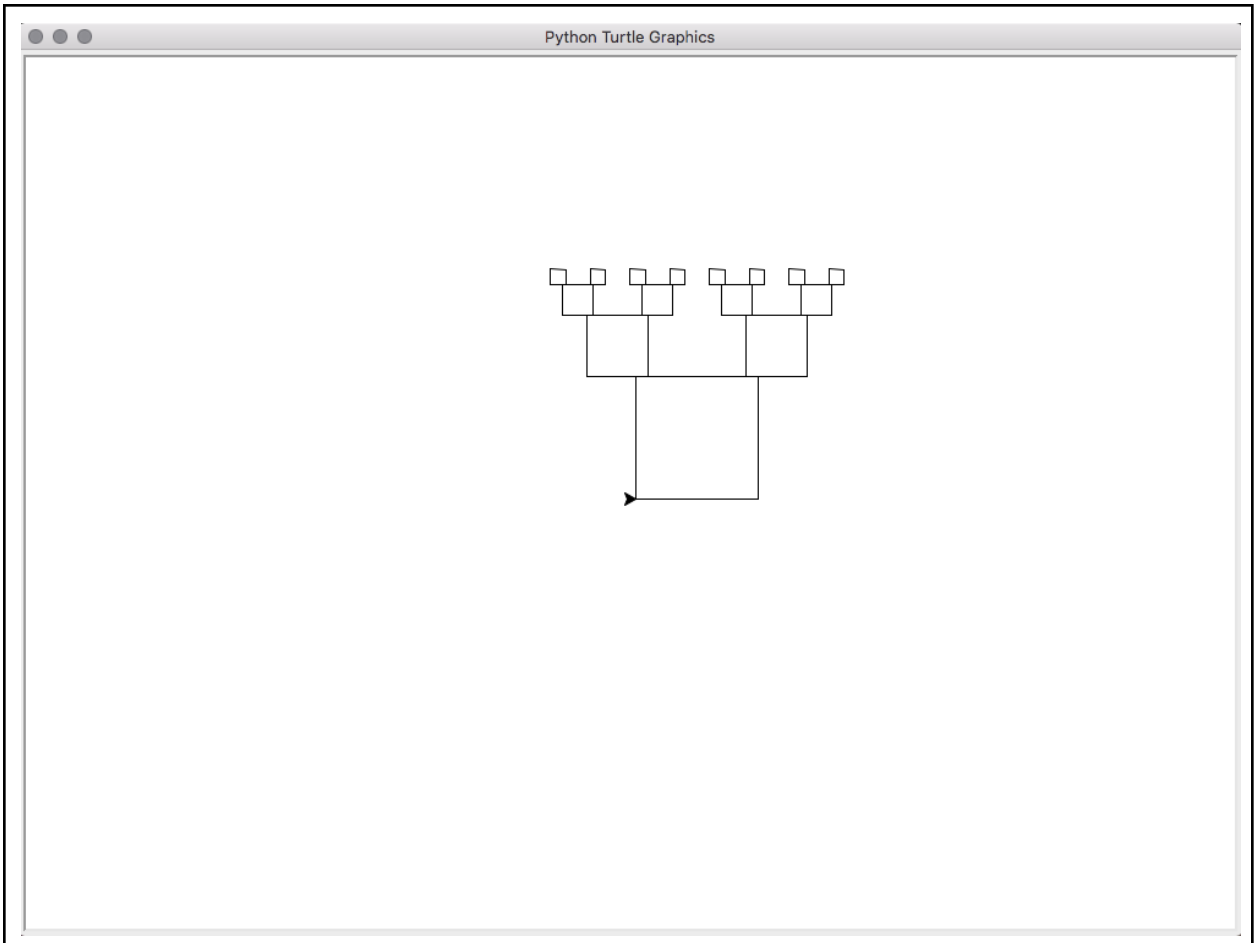
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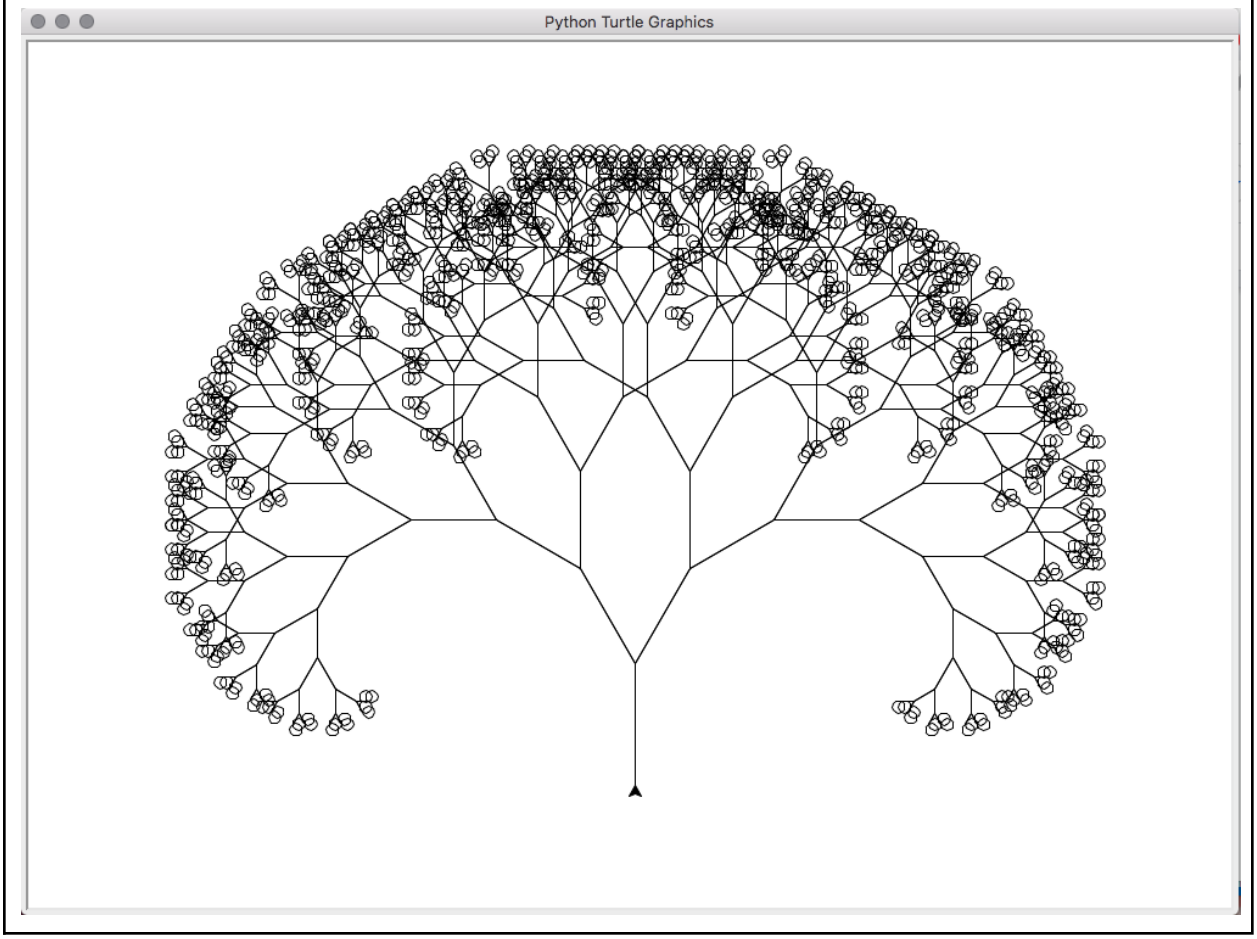
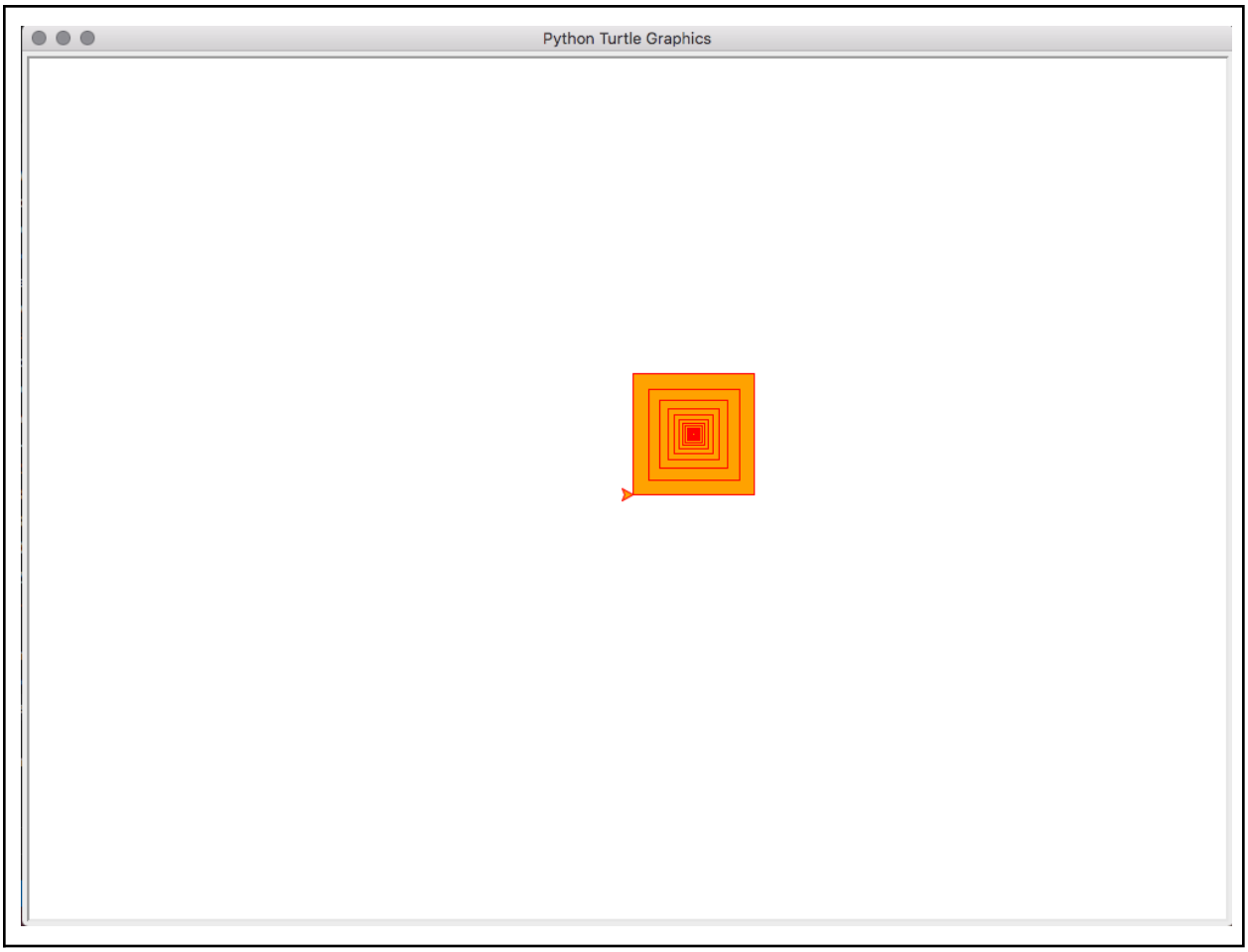
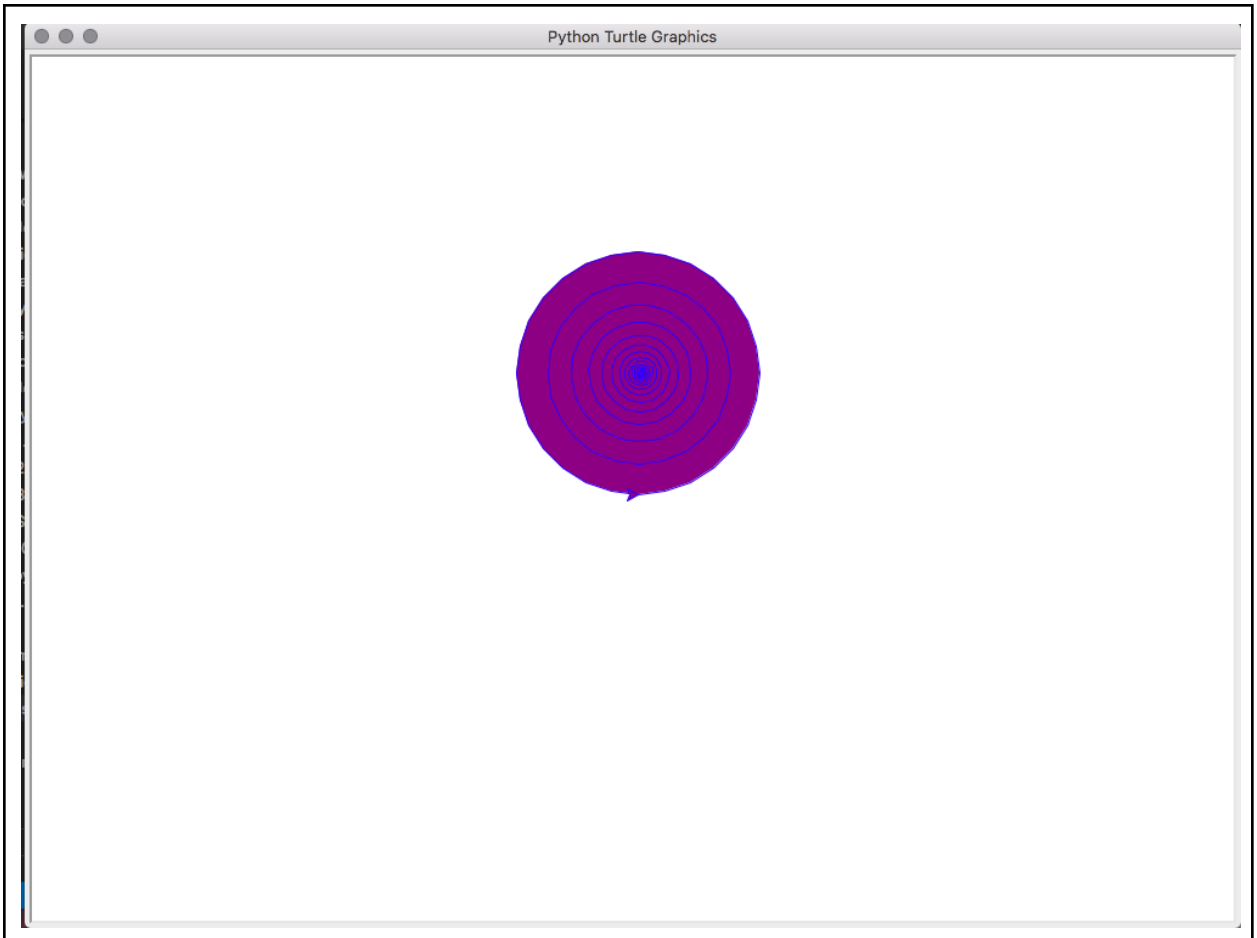
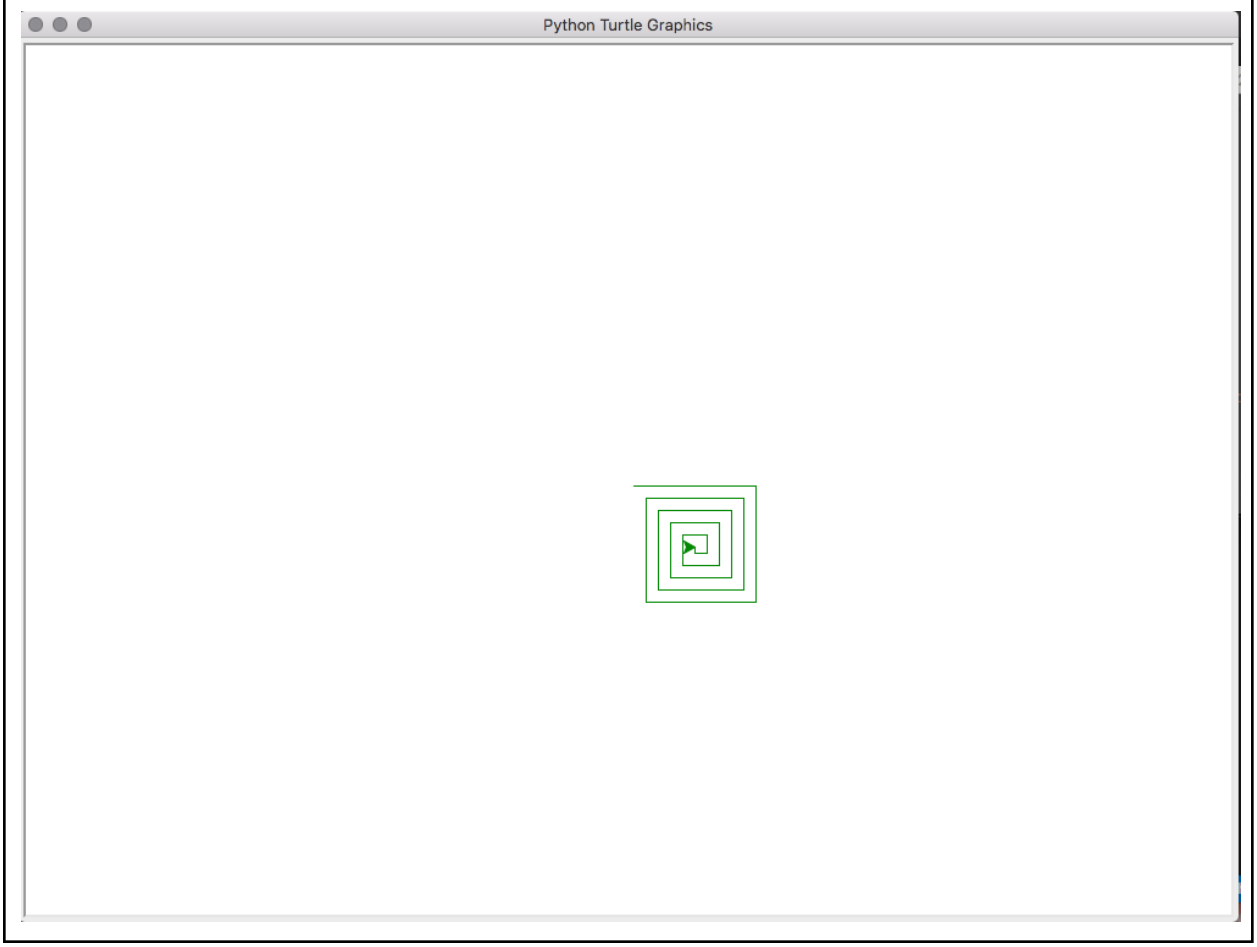

Python Turtle Graphics

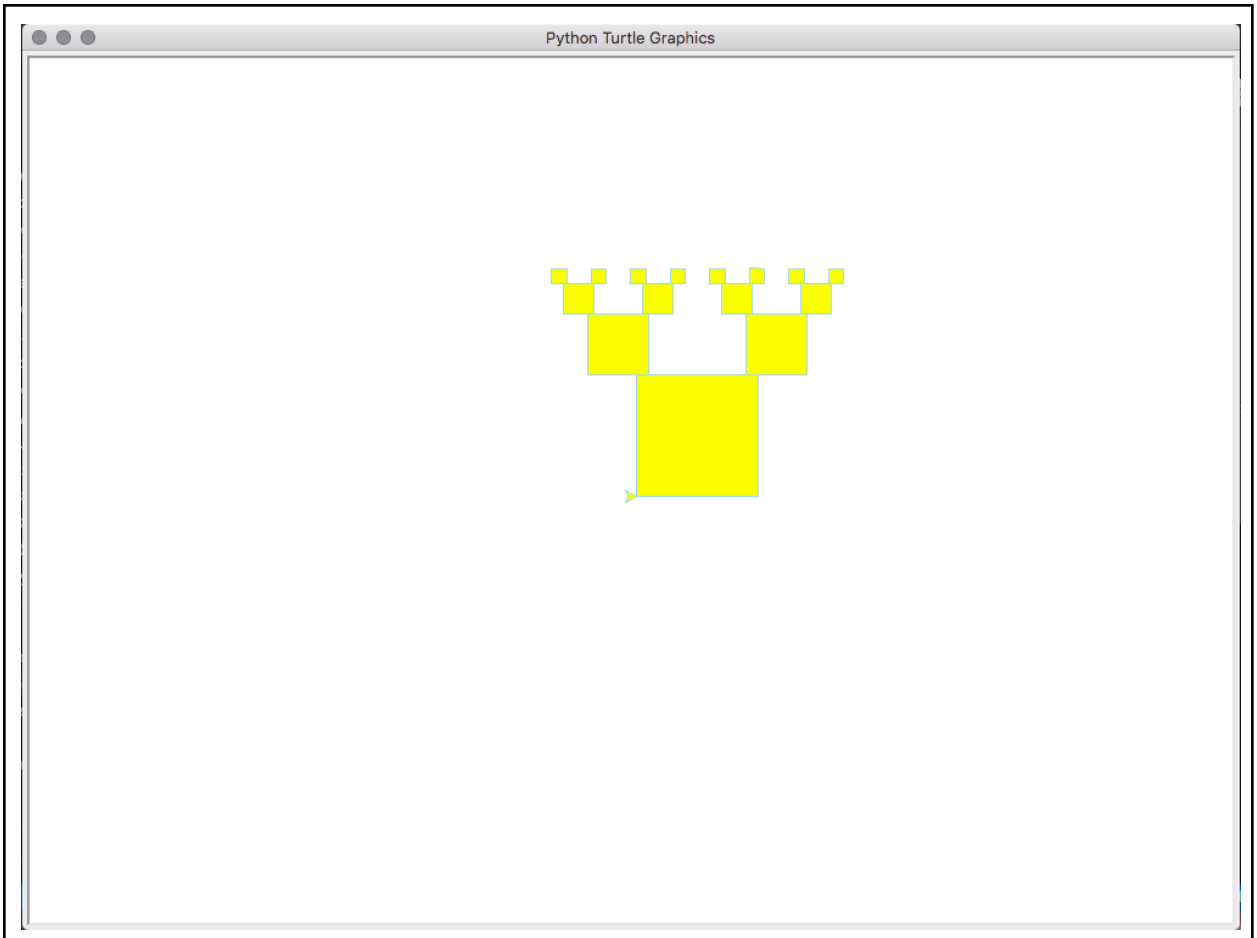
**Extension:**

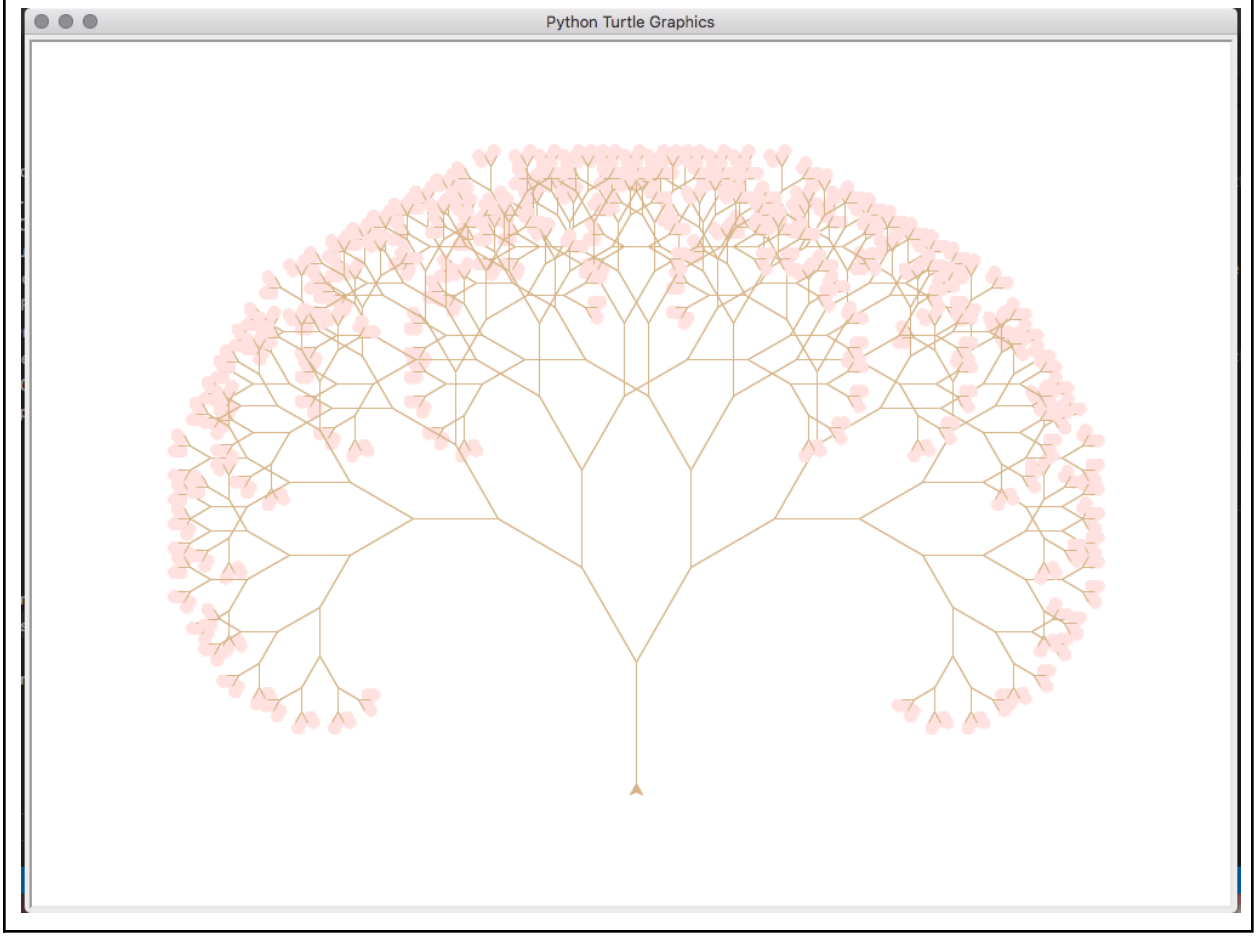
For my extensions, I added colors to the original images from the main lab. I also created an extra image using a recursive function of my own (last image).

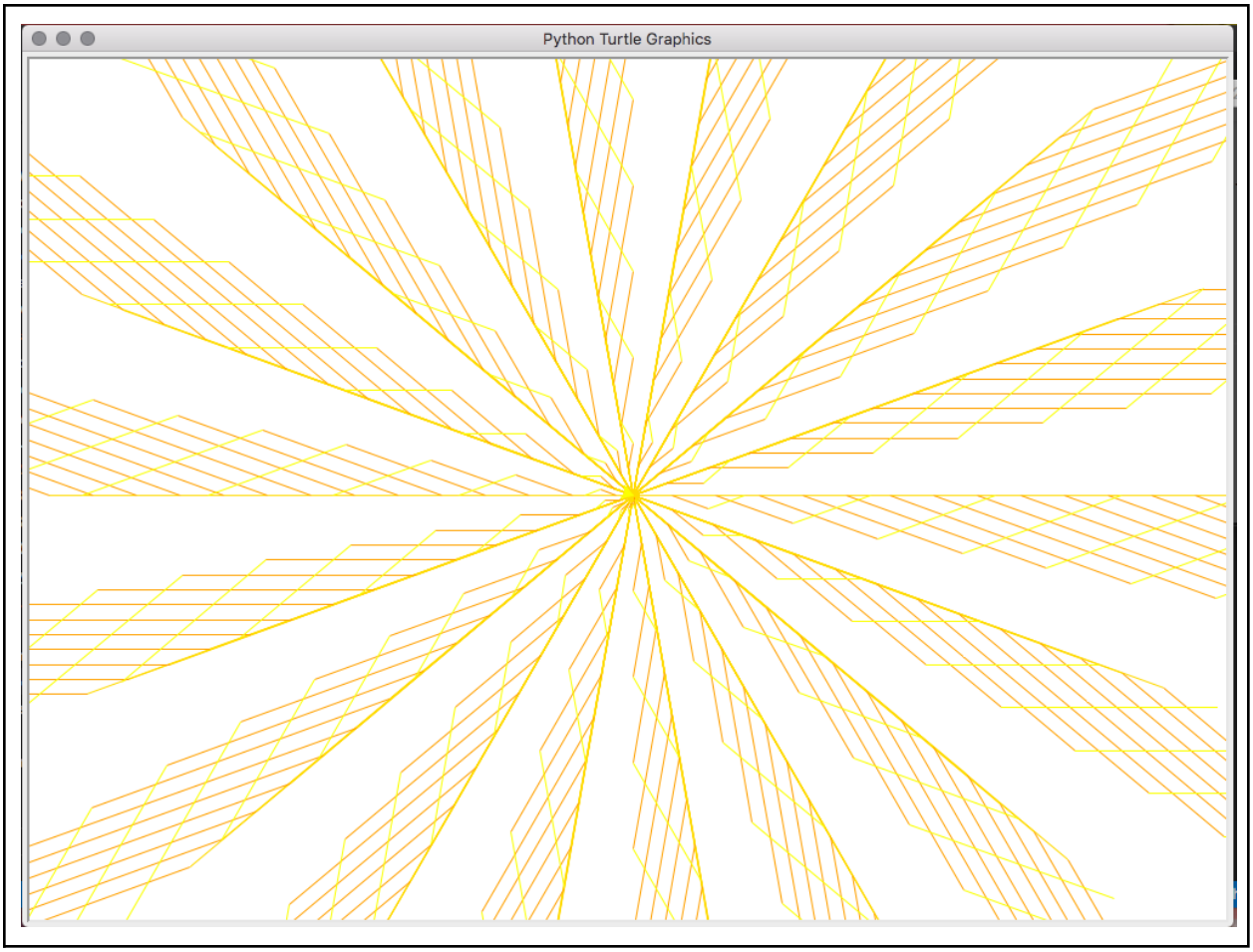



Python Turtle Graphics


Python Turtle Graphics


Python Turtle Graphics


Python Turtle Graphics




**Garding Statement**:

1. What grade do you think you deserve and why?

   I would give myself a 28/30 because I added two extensions (colors and an extra recursive image). I completed each task (once with color and once without), added a larger window frame to better view the image, and commented my code to explain what's happening. I also allowed for user input (I was unsure if this was a requirement) to control the functions, so each image is somewhat customizable. To prevent user input error, I also added an integer and absolute value function where necessary.

**Citations:**

Mahapatra, A. (2019, March 11). *[python beginner][diy] make fractal trees*. Medium. Retrieved November 6, 2022, from https://medium.com/@abhinav.mahapatra10/python-beginner-diy-make-fractal-trees-b1a0903414a9