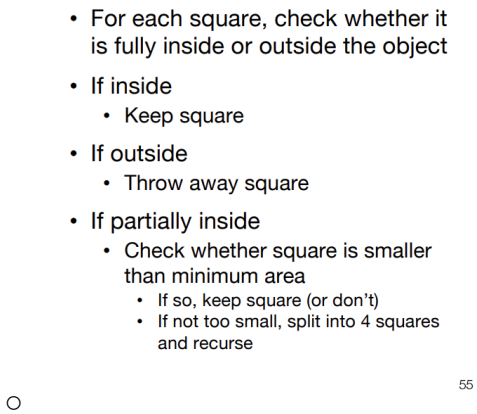
Blake Van Dyken

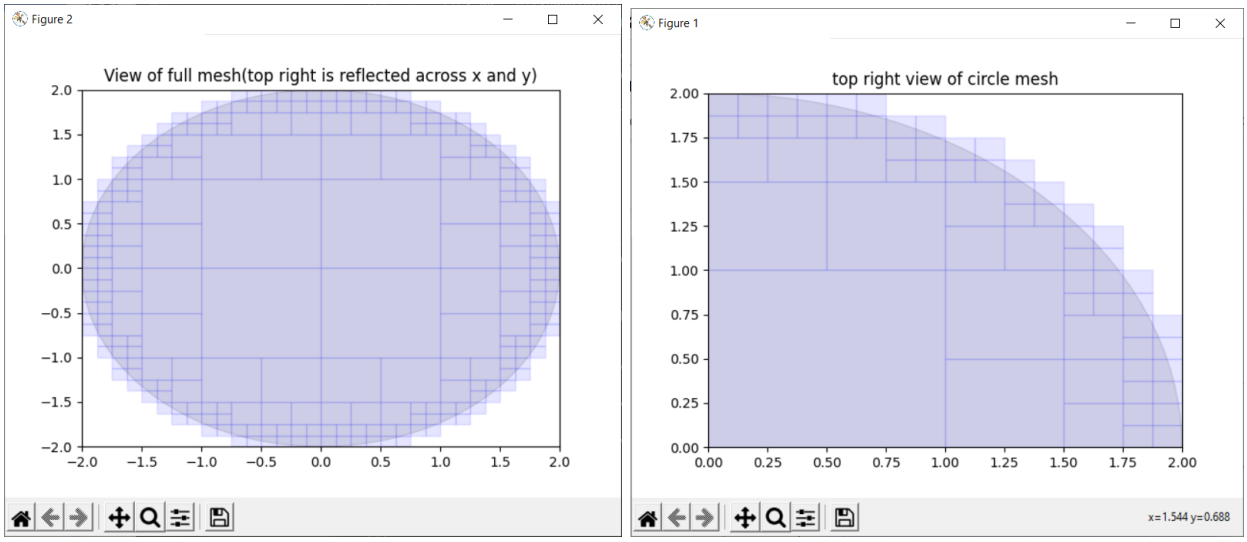
Assignment 7

Methods Used:

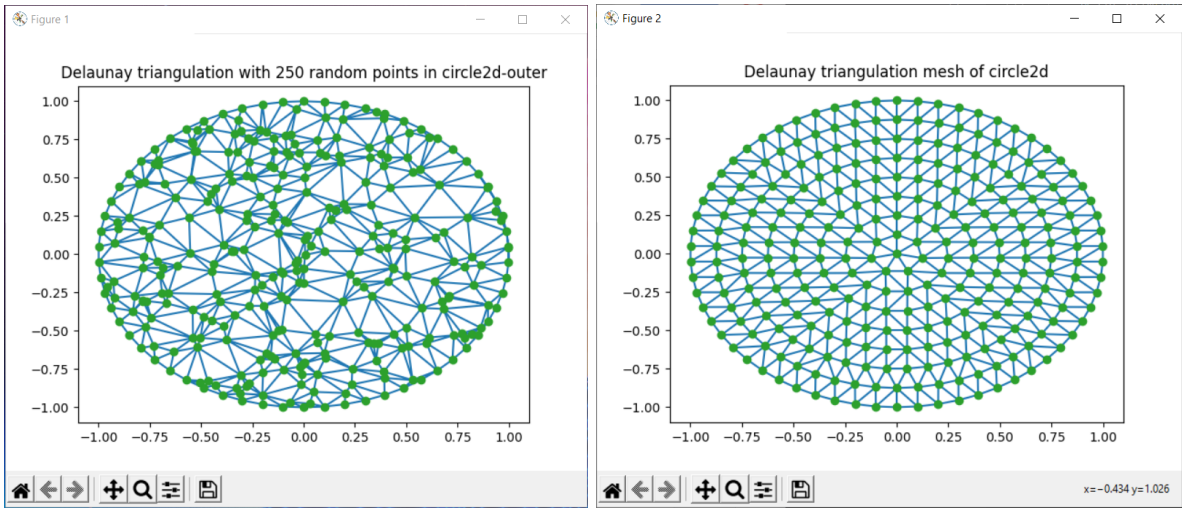
- Divide and Conquor for 2D meshing
    - 

- Delaunay triangulation
    - https://en.wikipedia.org/wiki/Delaunay_triangulation

Results and Figures:



My mesh generation generates the top right corner of the circle and then when I complete the mesh I reflect it across the x and y axes to get the image on the left. My recursion has a few terminating conditions, it never recurses more than 4 times so that the squares do not get too small, however, I could make this value smaller to get smaller squares for a better mesh. It also removes all squares that are not close to the edge of the circle / doesn't create them, but it also does not split a square into four if it is already fully inside the circle, thus we get a good-looking mesh if you run my program.



These are my visualizations of the given 2d Circle meshes, the one on the left inserts a random 250 points within the boundary and the other one just creates a mesh from the given points.

Sources:

All my code is submitted with the project and on GitHub here:

https://github.com/iPupkin/Theory-3200