Week 3 Report (6/23/16)

Model Implementation

I created the model implementation representing the mesh generation. Given an input of the number of Nx and Ny, the program will plot all the sample points. Upon clicking the program, a singularity element is added and vector arrows will appear.

Revision

My vectorization was quadrant based rather than performing basis field summation. This includes using a Jacobian matrix for each singularity to calculate the vectorization. Basis is superior to my quadrant implementation because it not only accounts for the detail vector value of every point but it also includes the weights of multiple singularities upon a point. I will also need to add an interface to keep track of which types of singularities are added to the vector field. After that, I will need finish the basis field summation to include and calculate all elements of the vector field.

Conclusion

The math and formulas within each part of the vector field can be simple to grasp but very difficult to implement thoroughly in a programming language. Thankfully since we go through every calculation firmly and review regularly, I can get a clearer idea of how each mathematical principle can be implemented.