In this project, we will implement the Two Delaunay Triangulation algorithms: Randomized Incremental Algorithm and a Horizontal Plane Sweep algorithm. These algorithms will calculate the Delaunay Triangulations of a set of points on the two-dimensional space.

The application will provide an interface to specify some configurations such as the number of random points to be created, the distribution of the points. We will sample the point coordinates from different distributions such as binomial distribution and normal distribution. The interface will also allow users to specify the parameters of the distributions such as mean and variance for normal distribution. Users will be able to select one of the two algorithms. We will calculate the Delaunay triangulation of the input using the selected algorithms. Then, we will draw and visualize these triangulations using a graphics library such as OpenGL and WebGL. Users will be able to see the states of the algorithms during the run time. Users will be able to examine the results by rotating, translating, zooming, panning the visualization.

Users will easily run experiments with various configurations. Then the application will draw charts and tables that will help users to understand the experiment results.