Project Name: Implementing Three Voronoi Diagram Computation Algorithms and Comparing Their Performance

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Project Description

The project aims to create and display Voronoi Diagrams of a random set of two-dimensional points, and compare the performances of different methods that were used during generation.

The program will allow the user to determine parameters such as point amount, zoom amount, and algorithm choice to create a diagram. The choice of algorithm will consist of three distinct algorithms. These algorithms will be:

- Randomized Incremental Algorithm
- Fortune's Algorithm
- The Flipping Algorithm.

Visualization of the Voronoi Diagrams and certain algorithms will also be implemented. Voronoi Diagrams will be graphically enhanced for easier examination, and the Voronoi Diagrams that are generated at each step of Fortune’s Algorithm will be shown.

Additionally, the performance of these three algorithms will be tested with different sizes of inputs. To achieve an adequate comparison test cases with input sizes ranging from 100 up to 1,000,000 will be generated.