A Proposal for Implementing Three Voronoi Diagram Computation Algorithms and Comparing Their Performance

CS478

Students
Burak Öztürk 21901841
Alp Tuğrul Ağçalı 21801799
This project will be to develop three Voronoi diagram computation algorithms and compare their performance. Voronoi diagrams are a type of mathematical diagram that divides a plane into regions close to each of a set of points. This project will involve researching, implementing, and comparing three algorithms for computing Voronoi diagrams by using three supplied approaches. The first step of the project will be to study those approaches for computing Voronoi diagrams.

Once the algorithms have been studied, they will be implemented in Python. Python is selected to reduce the technical details that would come with a low-level language like C++. After the algorithms have been implemented, they will be tested on a variety of inputs to compare their performance. The performance of the algorithms will be measured in terms of speed, accuracy, and memory usage.

Then, the progress of the project and the results of the comparison will be presented in reports and presentations. The progress report will include the progress of the project, covering a survey of the subject area, algorithms that will be used, data structures, and other implementation details strengthened with illustrations, block diagrams, pseudo-codes as wanted.

Finally, the final report will only extend the progress report to make it represent the final form of the project. It will include implementation details, results of the project, and recommendations for which algorithm is best suited for different situations as wanted. It will also provide a useful comparison for developers who are looking for an efficient algorithm for their application.