Implementation of two-dimensional (2D) Convex Hull construction algorithms and comparing their performances

Project

The project is about making an application with a graphical user interface that shows the computation of Convex Hull algorithms on randomly generated points. At first, a group of points will be generated using Gaussian distribution and uniform distribution, but users will also be able to add points to the existing points using ui. While generating the convex hulls and visualizing them, each step of the computation of convex hulls will be reported. After calculation, the performance metrics of the algorithms will also be visible to the user. For the computation of convex hulls following algorithms will be used:

- Graham’s Scan Algorithm.
- Jarvis March Algorithm.
- Quick Hull Algorithm.
- Merge Hull Algorithm.

For the project report, We will compare the performance of approaches with different numbers of points. Also, the effect of adding new points to a convex hull will be observed.

Students

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