

Numbers distance

Problem

You are given a binary file called “points” containing 10 million points (x,y). Each point is encoded as two successive 16 bit signed integer values.

Implement and ship us a Java program that computes, of all the points in the file

- ◆ The 10 closest points to (-200,300)
- ◆ The 20 furthest points from (1000, 25)

Use a state of the art build tool like ant, maven or gradle. Make sure that the package you ship contains all necessary files and libraries. It should compile and run tests in the usual way of your chosen build tool (i.e. “mvn install” or “gradle build”)

Acceptance Criteria

- ◆ Find the correct solution of 10 closest and 20 furthest points
- ◆ To evaluate how close two points are, use the ordinary/Euclidean distance
- ◆ The computation of each result should take no longer than 10 seconds
- ◆ The solution should be packaged such that a swissQuant developer can easily understand how to build it from source code and run it.

Notes

- ◆ To verify that you are decoding the points correctly, the first 3 points in the file are: (-715, 22165), (761, -23591), (-194, 6014)
- ◆ Do a professional job in terms of implementation, validation and packaging
- ◆ Please do not distribute this challenge or solutions to it