CSE2046 ANALYSIS OF ALGORITHMS

HW3 REPORT

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Code is written in Java.

Firstly we got inputs, and we calculated distances between cities. We stored these distances in a adjaceny matrix. Our algorithm is based on nearest neighbour algorithm.

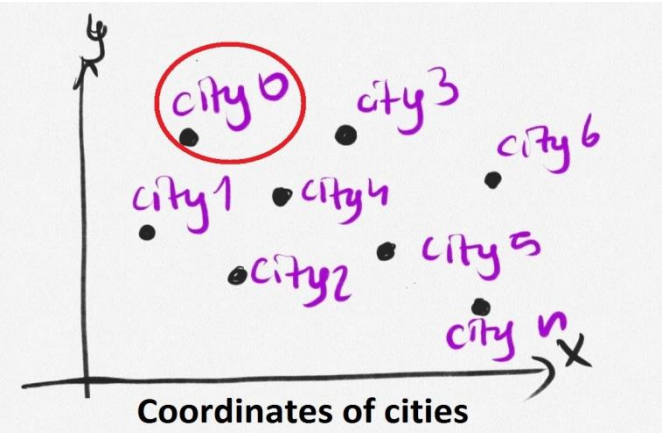
Citys' informations are stored in class which is named city, this class holds information about its id, x coordinate and y coordinate.

We went from one point to the shortest city with another point, but while doing this, we applied an optimization process.

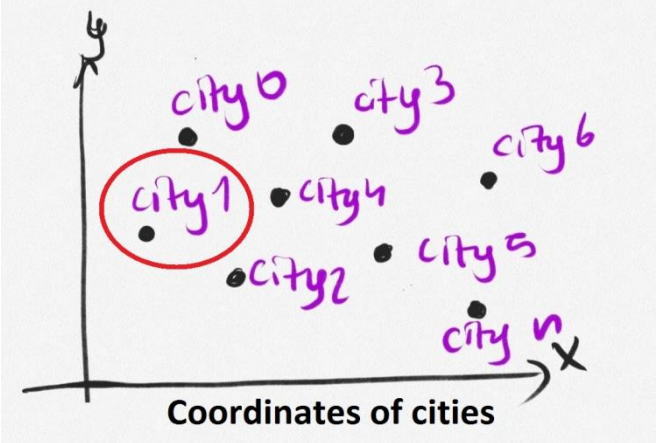
Optimization

Starting point is important thing in the neighbour based algorithm. Therefore, we tried to start the path with all possible points. We chose the minimal path related to these points.

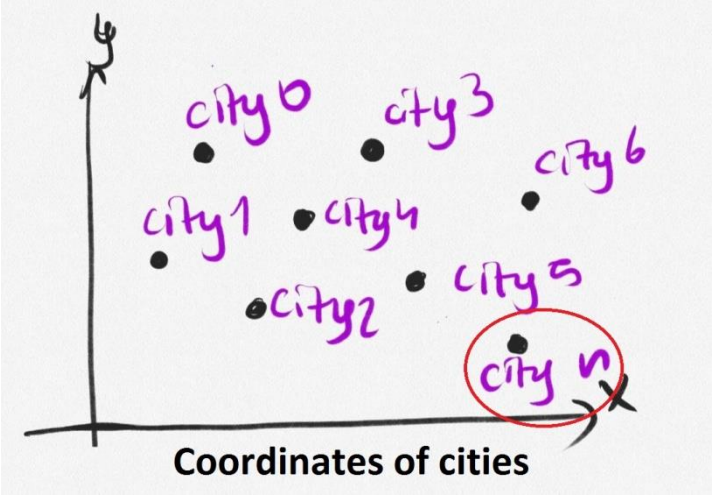
The minimal path's starting point is optimum starting point in our algorithm.



Firstly we selected first city as starting point and we calculated its shortest path. So,we used adjaceny matrix.



For next iteration, next city is selected for starting point and calculate the path. We calculated its shortest path.So, we used adjaceny matrix.



For last(nth) iteration, last city is selected for starting point and calculate the path. We calculated its shortest path.

And we choose minimal of these shortest paths for all cities.

Input Files	Shortest Way
Text-input-1	2985
Text-input-2	307733
Text-input-3	We couldn't take any result because of constraints of our computers
Text-input-4	12093

TEAM WORK

We studied together via TeamViewer. When we had mistakes, we had the opportunity to intervene in our codes online.

Firstly we talked about our algorithm, then coded together.(Reading inputs, generating functions and adjaceny matrix, implementing nearest neighbour algorithm, optimization process).

We also preapered the report together.(Introduction part, optimization part, drawing figures and tables.)