CSE2046 ANALYSIS OF ALGORITHMS

Travelling Salesman Problem / REPORT

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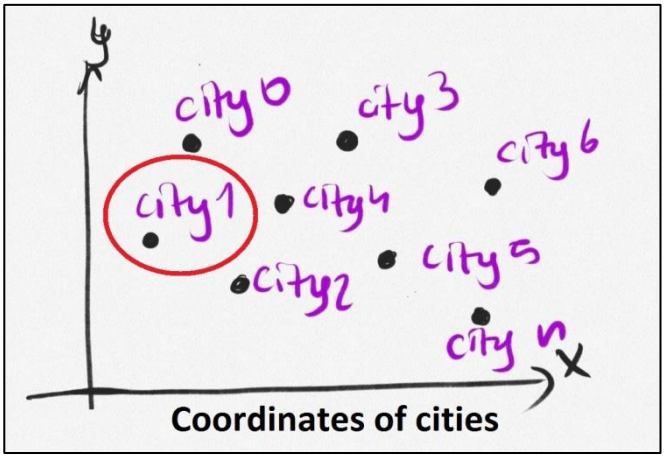
Firstly we got inputs and we calculated distances between cities. We stored these distances in an adjaceny matrix. Our algorithm is based on the nearest neighbor algorithm.

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

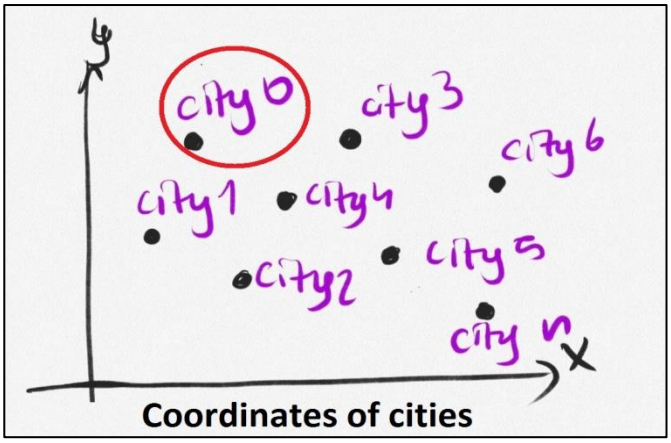
We went from one point to the shortest city with another point, but while doing this, we did an optimization process.

Optimization

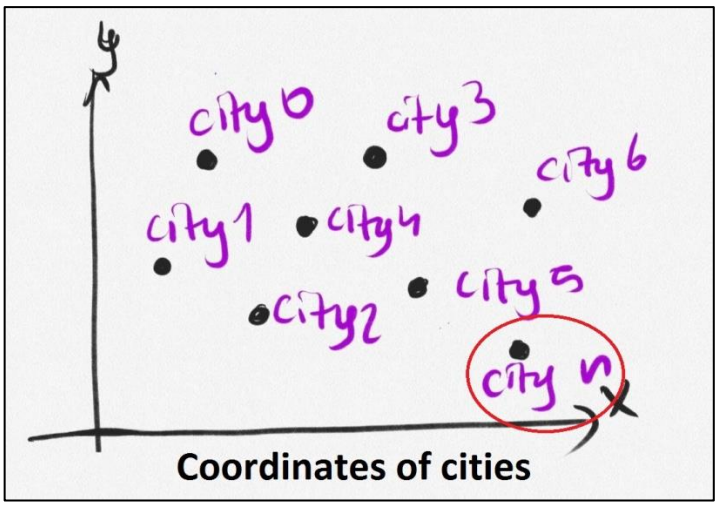
The starting point is an important thing in the neighbor based algorithm. Therefore, we tried to start the path with all possible points. We chose the minimal path related to these points. The minimal path's starting point is the optimum starting point in our algorithm.



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



For the next iteration, the next city is selected for the starting point. We calculated its shortest path.



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

And we chose minimum 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.

First 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.)