Daniel Awotundun

Report CSI 2110

Assignment 2

Classes:

Vertex: The instance variable distance functions as the weight of the vertex for the purposes of dijkstra’s algorithm. It has a method setDistance which allows for updating the distance during dijkstra’s algorithm implementation. I included a print () method because it helped me understand things during early implementation. This vertex class implements comparable which makes the implementation of dijkstra’s algorithm easier later. ArrayList is used to store the edges.

Instance variable previous helps with the representation of the shortest path after the algorithm is completed.

Edge: Basic edge class with getters for start Station, end Station and the weight which is also the distance.

Graph: I used arraylists to store all the vertices which allows me to implement the getVertexByValue which finds a vertex with its number. It calls print () which is implemented in vertex. Everything else is standard and explains itself.

ParisMetro: Reading algorithm has a flag that checks for $. Main is for deciding which algorithm to implement based on the number of inputs to args.

Algorithm 2I: I used DFS traversal.

Sample outputs

A screenshot of a computer program

Description automatically generated

Algorithm 2II: I used dijkstra’s algorithm.

Sample outputs

A screenshot of a computer screen

Description automatically generated

Algorithm 2III:

Sample outputs

Chosen Data Structure: ArrayList

[INCLUDE 3 OUTPUTS FOR EACH PART.]

Reference: <https://youtu.be/dS44jZyj5gU?si=kBB0k_m6zQJDRK2C>

Used this to understand basic graph implementation.