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Report

System Design And Programming

Course Work

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London Underground Tube

Introduction:

This Program shows the London underground tube system on a graph and display the shortest distance from one station to another and its duration.

Motivation:

This is a coursework project of my master's, and the subject is System design and programming. The algorithm which I have used in the program is "Dijkstra's algorithm for shortest path".

Working:

The process of the graph is like, here we are using stations as vertices and connection become edges. Time is the cost through we are calculating the shortest distance/way from one station to another. The graph shows the path which takes least time to reach the destination. Run the file 'tubeMainFile.py' to open the User Interface in which you can select your source and destination station and the graph will shows the shortest route the tube follows. The details of the data of station Id, name, time, etc. has been fetched from the three CSV Files which are Londonconnection.csv, londonstation.csv and londonlines.csv. One internal package has been used to access csv and two external libraries are used to plot the graph and to make GUI which are matplotlib and tkinter respectively.

Test Case: Figure of the expected shortest path created in the program.