Project 2: Xiao Wei's Problem

2020.11.7

The main purpose of this project is to review the graph and to get you familiar with shortest-path algorithm. This is an individual assignment; you may not share code with other students. Java is the acceptable programming language.

Introduction

Xiao Wei is a fresher in Fudan University. He likes hanging out at weekends by metro, but he is not familiar with the Shanghai Metro. So here comes the Problem: how to select the optimal route.

Shortest-path algorithm can be divided into single-source shortest-path algorithm and all-pairs shortest-path algorithm. Dijkstra algorithm is the typical single-source shortest-path algorithm while Floyd algorithm is the typical all-pairs shortest-path algorithm.

You can use the algorithm mentioned above or other algorithm.

Specification

A timetable named Timetable.xlsx is available in directory PROJECT/Project 2. You can regard the time span between two stations as the weight of edge. And there are some notices in the file **README.txt**.

This project requires that you carry out the following tasks:

1. Output the shortest-path (input origin and destination only)
2. Output the shortest-path (input origin, some additional middle stations and destination)
3. An executable jar file for your implementation
4. Project development document, in which you can write your project design in detail, the problems you have encountered, as well as your solutions or ideas.
5. (Optional) Optimize your tool, write down the techniques you have used to optimize the results.

Grading

- Shortest-path (input origin and destination only): 35%
- Shortest-path (input additional middle stations): 35%
- Performance (time): 15%
- Project development document: 15%
- Optional optimization: 10% (bonus)

Submission

Create a zip file named YourStudentID.zip that contains your code project (include the source code) and related documents. Remember to upload your zip file to https://wss.pet/s/3x631kc5ep4.

After submission, we will set up a face-to-face interview one by one, so get yourself ready for it.

Deadline

2020.12.05