Project 2: Xiao Wei's Problem

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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 comes from Shangdong Province so he is not familiar with the Shanghai Metro. But he likes hanging out with his girl friend at weekends by metro. So 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. On the other hand, Floyd algorithm is the typical all-pairs shortest-path algorithm.

You can use the algorithm mentioned before or any other more efficient 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. 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 additional middle stations)
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, and as well as your solutions or ideas.

5. **(Optional)** Optimize your tool, write down the techniques you have used to optimize and 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 upload your zip file to FTP server.

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

Deadline

23 Nov. 2014 23:59 GMT+08:00