

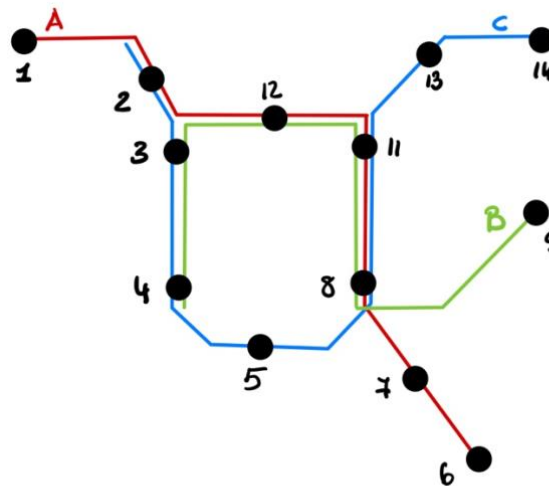
Specification for an optimal subway route calculation (calcRoute).

Usage:

calcRoute{originStation,destinationStation}

Description:

The program shall compute the fastest route from one station to another according to the figure. This graph must be created programmatically. It receives two stations as parameters, first one shall be the origin stop and the second one the destination. All stations have the same time to change from one line to the other. In the image below, it can be seen the graph that the application must follow.



Input data:

The input data allowed by the program are the origin stop (first) and the destination stop (second). Also, the hour of departure in 24-hour format [hh:mm]. No less or more parameters will be allowed.

calcRoute -o [origin] -d [destination] -h [hour]

Output data:

The output data must be a file with the fastest route. The file should include the origin, the destination, the stations where it stops and the total time. In case that the user should change lines, the station at which the user changes lines must be included in the file alongside the line which the user comes and the line which he/she is moving.

The file format must be:

Origin

Destination

[stop 1, ... , stop n]

[hour of departure hh:mm]

[hour of arrival hh:mm]

[total time to get to the destination hh:mm]

[stop to change lines]

Details:

The time that a train takes between 2 stations is 3 minutes.

The time to change lines in the same station is 4 minutes

The frequency for each line is different:

- Line A: a train departs from each side of the line every 10 minutes.
- Line B: a train departs from each side of the line every 12 minutes.
- Line C: a train departs from each side of the line every 8 minutes.

Every train works from 6:00 a.m. and 00:00 a.m.

Errors to take into account and they must be written into a log file:

- Wrong parameters.
- Execution errors.

Limitations:

The graph must be loaded by code, not in a file.