CSI2110 - Programming Assignment 2

Part A:

Status of code:

My implementation for the “Expensive Subway” (UVa 11710) problem uses Kruskal’s algorithm to compute a Minimum Spanning Tree (MST) over the subway network. The objective is to determine the minimum total cost of monthly passes that allows Peter to reach all stations. If the graph is not fully connected, the program outputs “Impossible” because no spanning tree exists.

Part B:

Status of Code:

For Part B, the program reads the Paris metro graph from metro.txt. Each vertex represents a specific station on a particular line. The goal is to compress this large graph into a smaller, hub-level graph and then apply Kruskal’s algorithm again to obtain an MST over hub stations.

Resources:
- Course materials
- Textbook: Data Structures and Algorithms, by Mark Allen Weiss: Professor Jeff Ericson's online lecture on Union-Find (https://jeffe.cs.illinois.edu/teaching/algorithms/notes/11-unionfind.pdf)
- ChatGPT