CSC-421 Applied Algorithms and Structures
Spring 2017

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Programming Assignment #2
(Due May 31)

1 Problem

Implement Dijkstra's algorithm for computing the shortest path from a designated vertex (A) to a designated vertex (B) in a directed graph.

2 Programming languages

You can use any standard programming language such as **C**, **C++**, **Visual C++**, **C#**, **Java**, **Python**.

3 Program requirements

Your program should read the graph from a text file that **has the same format** as the input files uploaded on D2L (same folder as the assignment). Each input file starts with a line containing the number of vertices in the graph. The vertices are assumed to be numbered alphabetically starting with vertex A. Each subsequent line in the input file contains the tail of an edge followed by a space, the head of the edge followed by a space, and the weight of the edge, respectively.

Your program should output the weight of a shortest path from vertex A to vertex B in the graph and the sequence of vertices on a shortest path from

A to B; the format of the output should match the format of the solution files.

4 Materials to be submitted on the D2L

1. The files containing your source code. Make sure that the files compile and run.

2. Please note that the grader will test your programs on the uploaded test files (text files). So make sure that your programs run on the uploaded files.

Please create a single ".zip" file containing all the above materials and upload it on D2L.