Assignment 4

You are given a map of 26 cities (named as A, B, C, D, ….X, Y, Z respectively). The document for this map is available in the same folder in the blackboard and the name of the document is city 1.txt. Every road connection is represented by a row in the table below, where the first and the second columns correspond to the two cities that are directly connected and the third column denotes the distance of the road that connect the two cities.

Location ID 1	Location ID 2	Distance
A	B	2
A	E	2
A	W	1
…	…	…

Your assignment is to write a computer program based on the principle of dynamic programming to realize the following two functions:

1) Calculate the optimal values of all cities given that the destination is city F
2) Find the shortest path from each city to F.

In your lab report you need to solve a small problem as given in Figure 1 by hand . The purpose of this task is to demonstrate your understanding of the idea and principle . Assume that the destination in this small problem is node E. Please write out all the iterations in deriving the optimal values of nodes. You also need to show how you can find the shortest path to F from each of the other nodes.

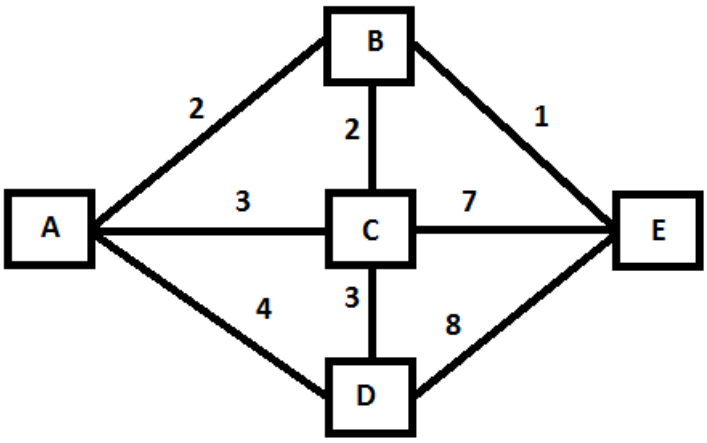

Figure 1: The graph for a small problem

Before submitting the report, you should present your program and results to Miguel Leon. After that, and only if everything is correct, you can then send the report and the program code to miguel.leonortiz@mdh.se