

**COSC 2336.S70
PROGRAM SIX**

ASSIGNMENT:

Create a program which will read in a set of values for the cost of moving between two nodes in a graph and determine the minimum cost for connecting all nodes. The data will consist of statements in the following form.

NumNodes
Node1 Node2 Cost

NumNodes will be the number of nodes in the graph (maximum of 12). Node1 and Node2 are single alphabetical characters (upper case) and Cost is a positive (> 0) integer value. There will be one statement per line. The nodes will be lettered in alphabetical order (i.e. if there are six nodes they will be A, B, C, D, E, F. The cost of moving between nodes is not symmetrical (i.e. the cost of moving from A to B may be different from the cost of moving from B to A).

Note: There may not be a path connecting every node (i.e. A may connect to B and B may connect to C but there may not be a path from A to C). If there is not a statement A C Cost, it is implied that there is no connection from A to C.

Output will be the cost of the minimum path through the nodes and the list of nodes visited (in the order visited). If there is no unique minimum path, you may display any of the minimum paths found.

Also note that the list is not circular (that is you do not need to return to the starting point).

BONUS: There is a 25 point bonus if you have a working non-recursive solution.

TURN IN:

- 1) A printed listing of all of the .cpp and header files that you created.
- 2) A copy of the files in the project folder as created by Visual Studio and a copy of the .exe file from the debug folder. These may be “zipped” placed on a 3 ½ inch floppy, a CD, or emailed to the instructor with the subject line “COSC 2336.S70 – Lab 6”.

DUE: 24 April 2013