

**COSC 2336.S01  
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) An electronic copy of the .cpp and .h files in the project folder as created by Visual Studio. This will be emailed to the instructor with the subject line "COSC 2336.S01 – Program 1".
- 2) If you wish any feedback on your work, turn in a printed listing of the .cpp and .h files that you created.

**DUE:** 16 Nov 2017