GRAPH ALGORITHMS

Question 1

Given a graph as input, write an algorithm to determine a minimum spanning tree.

(a) You may use whatever algorithms and data structures you deem necessary. The only requirement is that your submission should determine the minimum spanning tree.

> An example of what your driver code *might* look like in your main function follows. Consider running your code on the graph shown as an example, and on a second graph you define yourself.

```
// Main Program
int main()
{
    /* Create the following weighted graph
            5
        0————————1
        |   \     |
       3|    2\   |7
        |       \ |
        2————————3
            2       */
    int V = 4;  // Number of vertices in graph
    int E = 5;  // Number of edges in graph
    struct Graph* graph = createGraph(V, E);

    // Add edge 0–1
    graph–>edge[0].src = 0;
    graph–>edge[0].dest = 1;
    graph–>edge[0].weight = 5;

    // etc. this is only one beginning
    // implement this however you choose to.

    MST(graph)
}
```

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An example of the desired output appears below.

```
The edges in the minimum spanning tree are:
2 -- 3 == 2
0 -- 3 == 2
0 -- 1 == 5
Total weight is 9.
```

You should submit your solution to the D2L Dropbox for Lab 4. Please name your CPP file according to the scheme lastname_firstname_lab4.cpp.

Here you will replace lastname and firstname with your own name.