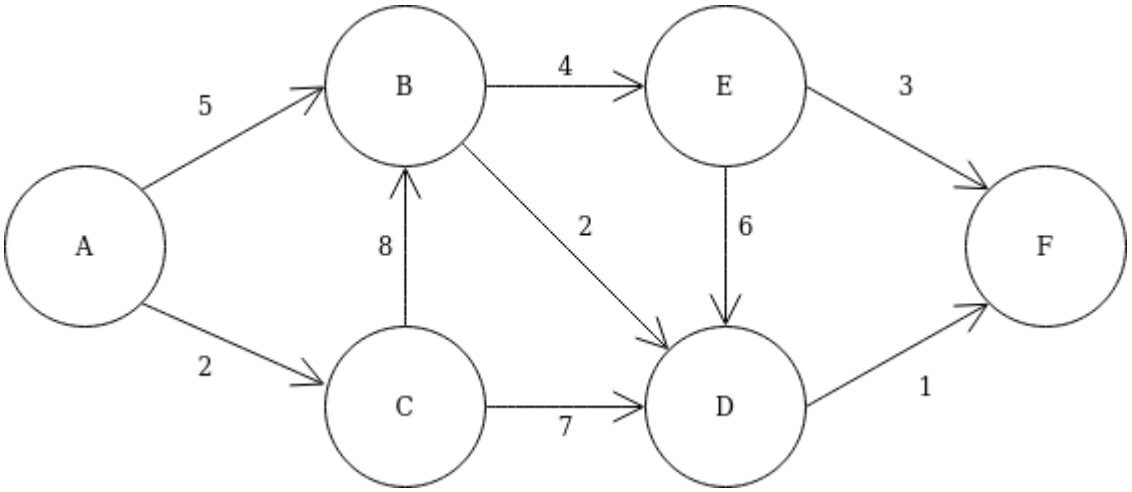
CSCI201A - S5

Provide solutions for the following problems

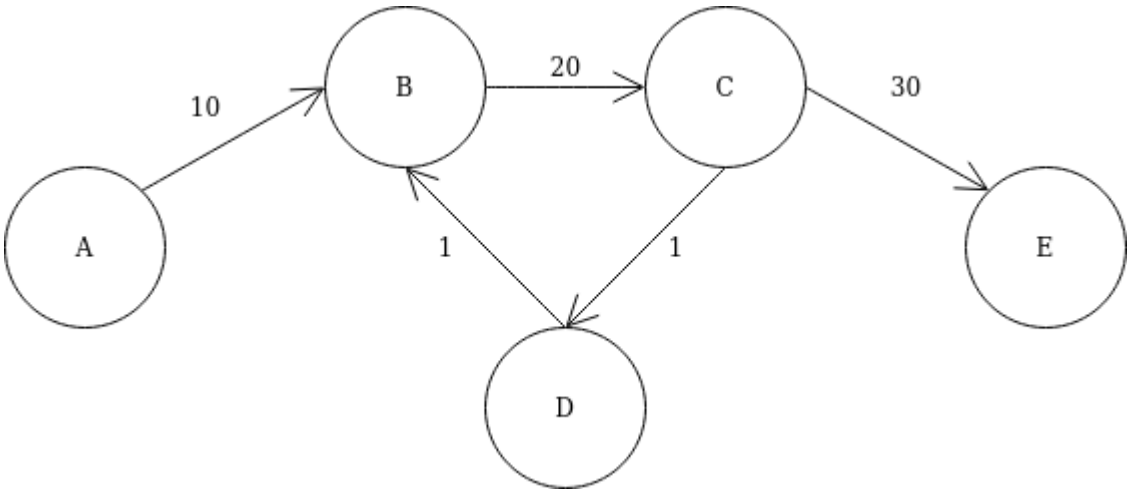
1. Complete Dijkstra's Algorithm (5pts)

For the following graphs, convert it to the necessary partitions and apply dijkstra's algorithm. Complete the algorithm so that it returns two values: the cost of the fastest path (numeric) and the path to take for the fastest path (array). The algorithm should indicate which is the starting node and which is the ending node.

1A



1B



2. My Hash Function (2pts)

Provide your own implementation of a hash function. Include an explanation on why it does or does not satisfy the properties of a good hash function. You may not use the following implementations:

1. Alphabetical order
2. Length of word

3. BFS + Dijkstra (3 pts)

Create an algorithm that implements both BFS and Dijkstra that returns the fastest path and a boolean value if the fastest path is also the shortest path of the graph. You may use the example in this problem set or the one provided in the slides for testing.