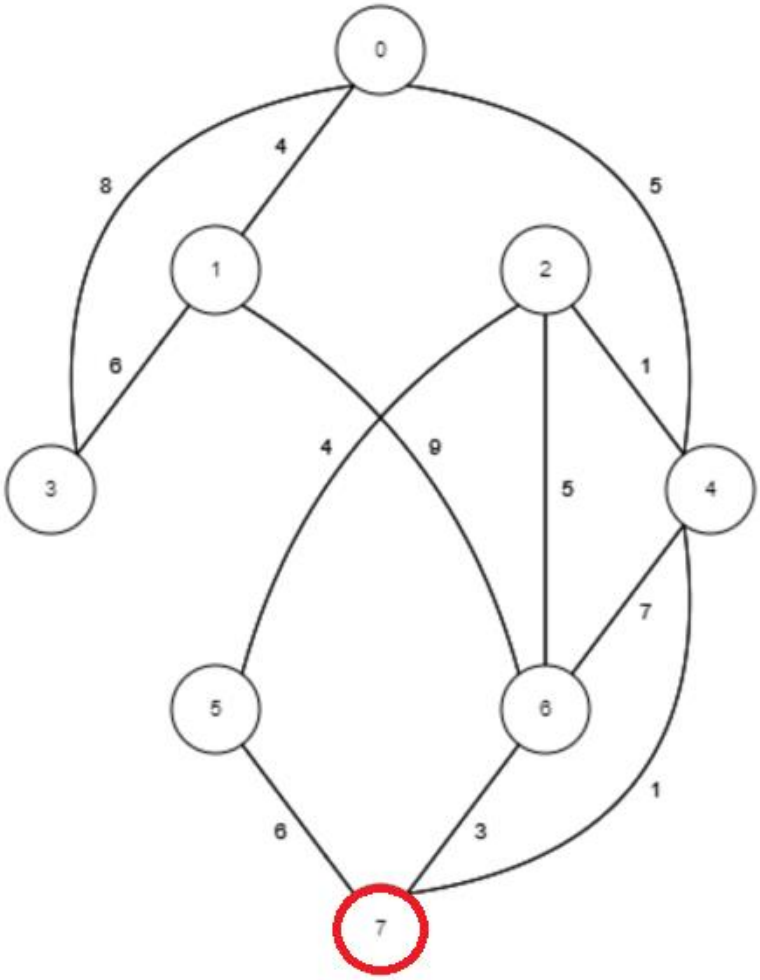
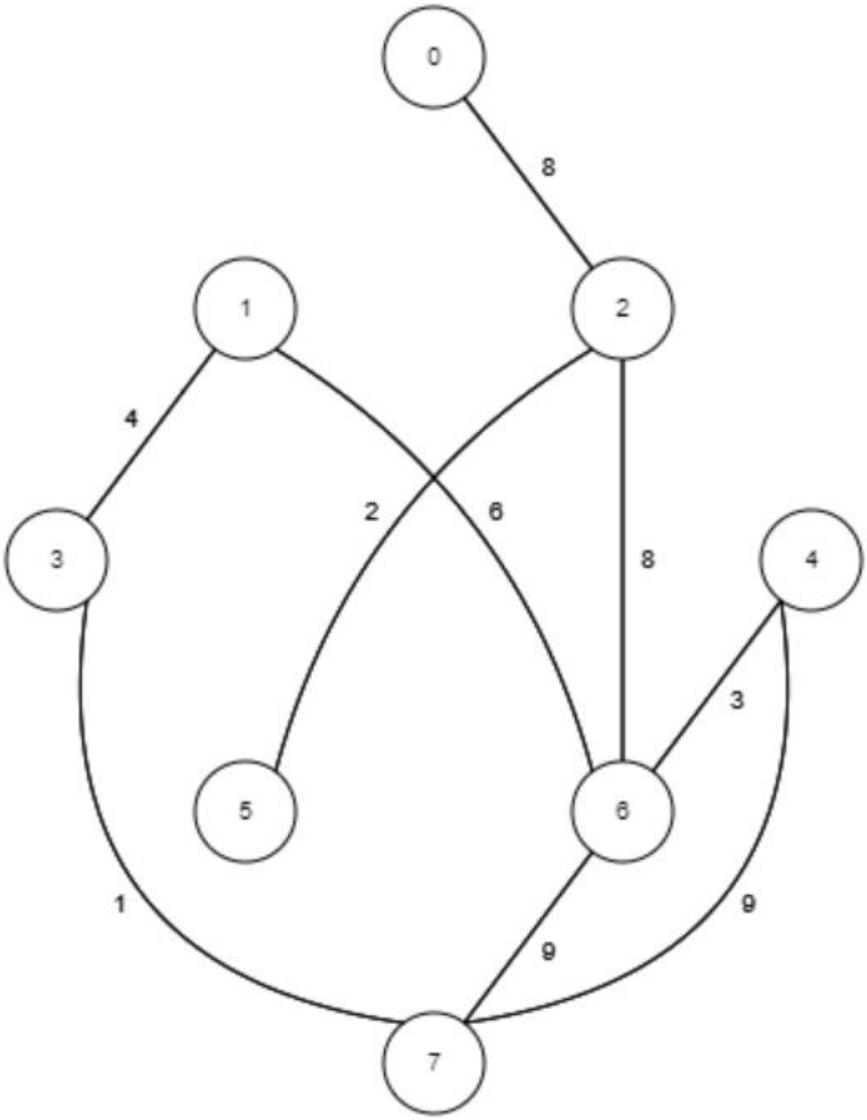
COSC 3304 – Algorithms Design and Analysis
Assignment 11

Due: 11:59pm, 04/30/2024

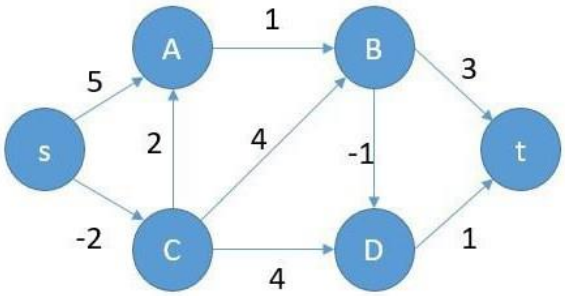
1. Please apply Prim's method to find the Minimum Spanning Tree of the graph below starting from the **vertex 7**. (15 points)



2. Please apply Kruskal method to find the Minimum Spanning Tree of the graph below. (15 points)

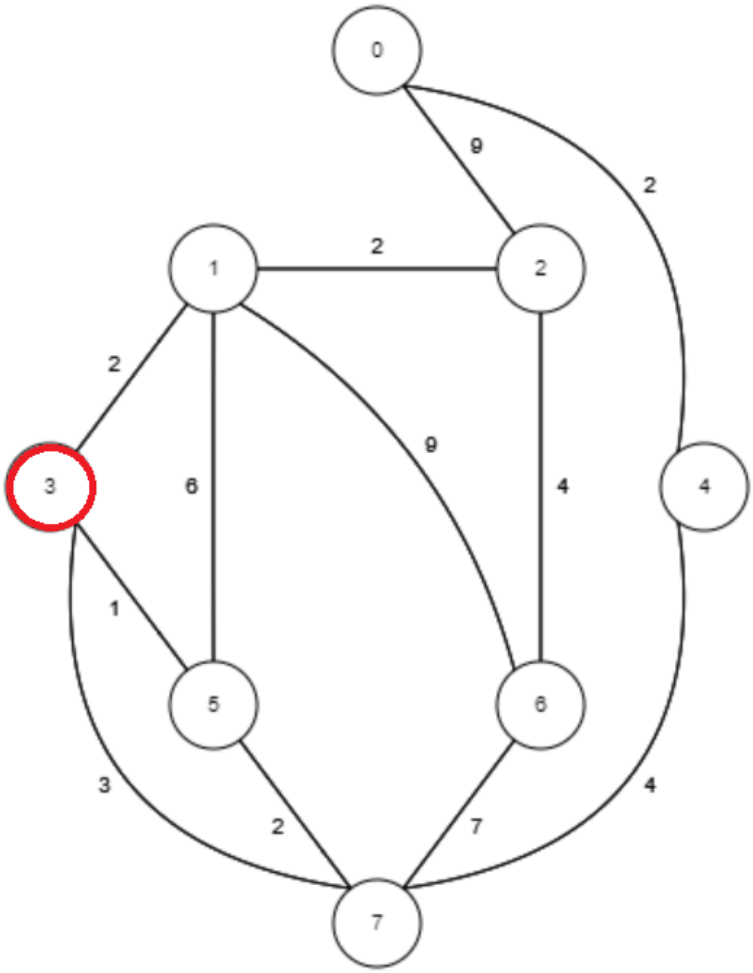


3. Please show the **Bellman-Ford Algorithm** to find the shortest parths from vertex s to other vertices. Assume the each pass relaxs the edges in the order of **sA, AB, Bt, CA, CB, BD, sC, CD,** and **Dt**. Please use the table below to show how the distance to each vertex is updated (You can use as many rows as you need). (20 Points)



s	A	B	C	D	t
0					

4. Please use the **Dijkstra Algorithm** to find the shortest paths starting from vertex 0 to other vertices. You need to show the cost and vertices on each shortest path. (20 points)



5. Please use **Floyd-Warshall** method to compute the all pairs shortest paths of the graph below. Please show the **Distance Matrix** after every iteration $D^{(0)}$ to $D^{(4)}$ (30 points)