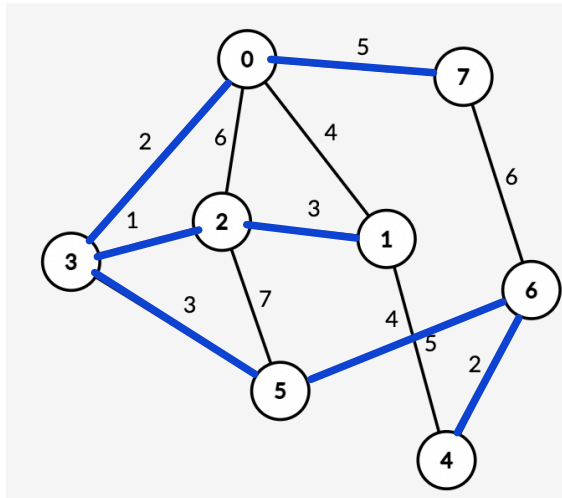


# Assignment 4

Wednesday, 24 May 2023

01:52

Find a minimum spanning tree using Prim's algorithm starting from 2



Step 1: Vertex 2, add to priority queue all the edges that contain 2: cost = 0

Priority queue: (1,3), (3,1), (6,0), (7,5)

Step 2: Vertex 3, add to priority queue all the edges that contain 3: cost = 1

Priority queue: (2,0), (3,1), (3,5), (6,0), (7,5)

Step 3: Vertex 0, add to priority queue all the edges that contain 0: cost = 3

Priority queue: (3,1), (3,5), (4,1), (5,7), (6,0), (7,5)

Step 4: Vertex 1, add to priority queue all the edges that contain 1: cost = 6

Priority queue: (3,5), (4,1), (5,4), (5,7), (6,0), (7,5)

Step 5: Vertex 5, add to priority queue all the edges that contain 5: cost = 9

Priority queue: (4,1), (4,6), (5,4), (5,7), (6,0), (7,5)

Step 6: Skip vertex 1, We'll have vertex 6, add to priority queue all the edges that contain 6: cost = 13

Priority queue: (2,4), (5,4), (5,7), (6,0), (6,7), (7,5)

Step 7: Vertex 4, add to priority queue all the edges that contain 4: cost = 15

Priority queue: (5,4), (5,7), (6,0), (6,7), (7,5)

Step 8: Skip vertex 4, We'll have vertex 7. We stop here, all the vertices have been visited

Total cost of minimum spanning tree: 20