

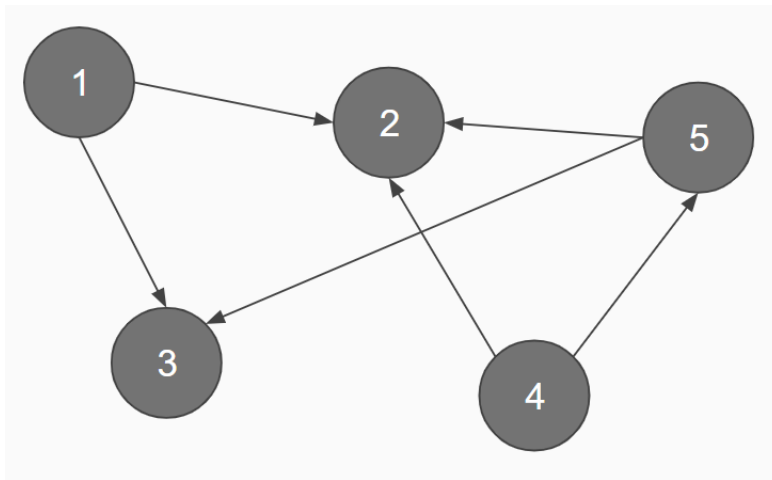
COMP 3270 Introduction to Algorithms

Homework 4

Adjacency Matrix

Represent the follow graph using its adjacency matrix. The number in the circle indicates the corresponding index of the node. all edge weights are 1.

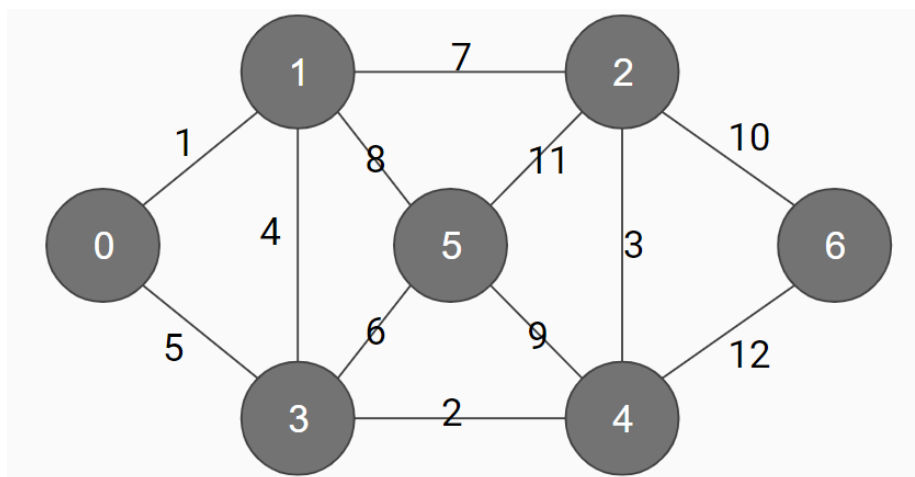
Note that the graph is directed, i.e., the edges only goes from its source node to its target node but not backwards.



Prim's Algorithm / MST

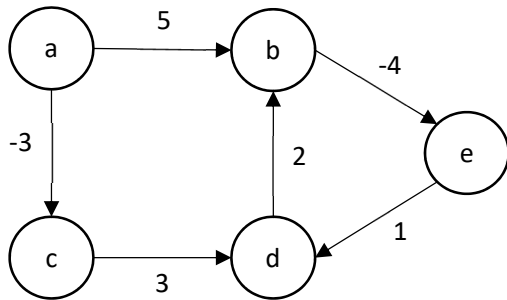
Rule out the MST of the following graph using Prim's algorithm. The number in the circle indicates the corresponding index of the node, while the numbers on the edges are their weights,

Use node 0 as the starting node. You must show your work.



Bellman-Ford Algorithm

Consider the following graph



Run Bellman-Ford algorithm on the graph, using vertex a as the source. In each pass, relax the edges in the order (a, b) , (a, c) , (d, b) , (c, d) , (b, e) , (e, d) .

You must show your work to earn credits.