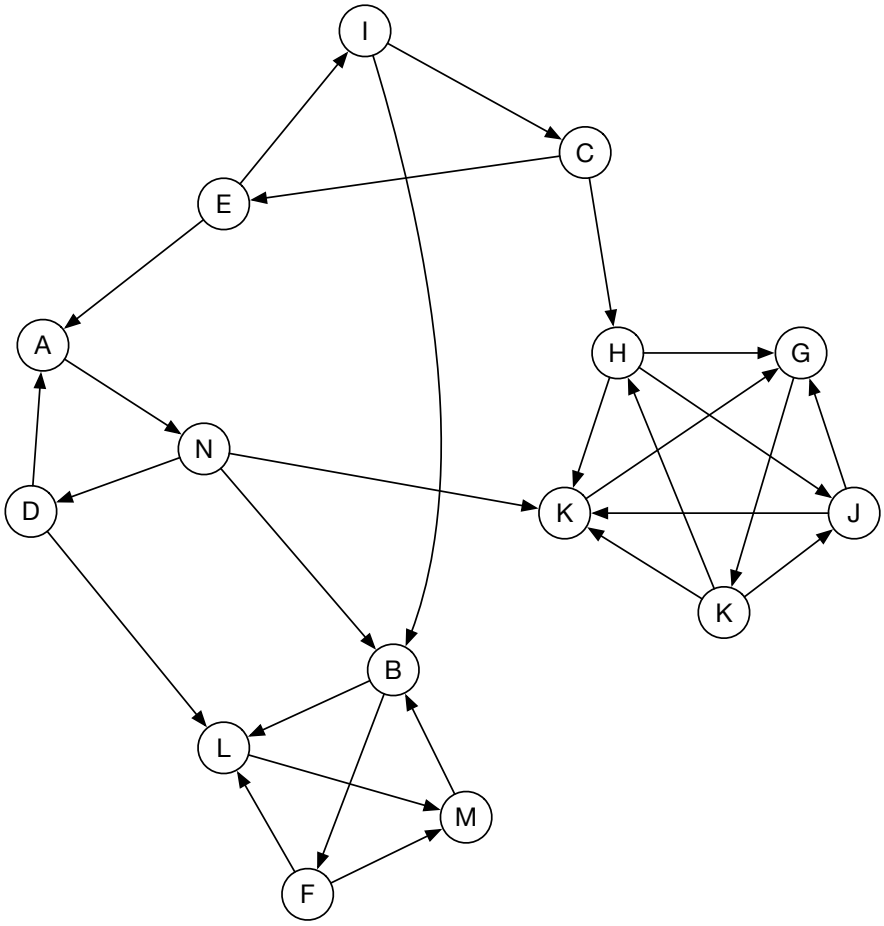
Homework:
Due April 29, 2020

5 pts **Problem 1**

For the following graph:

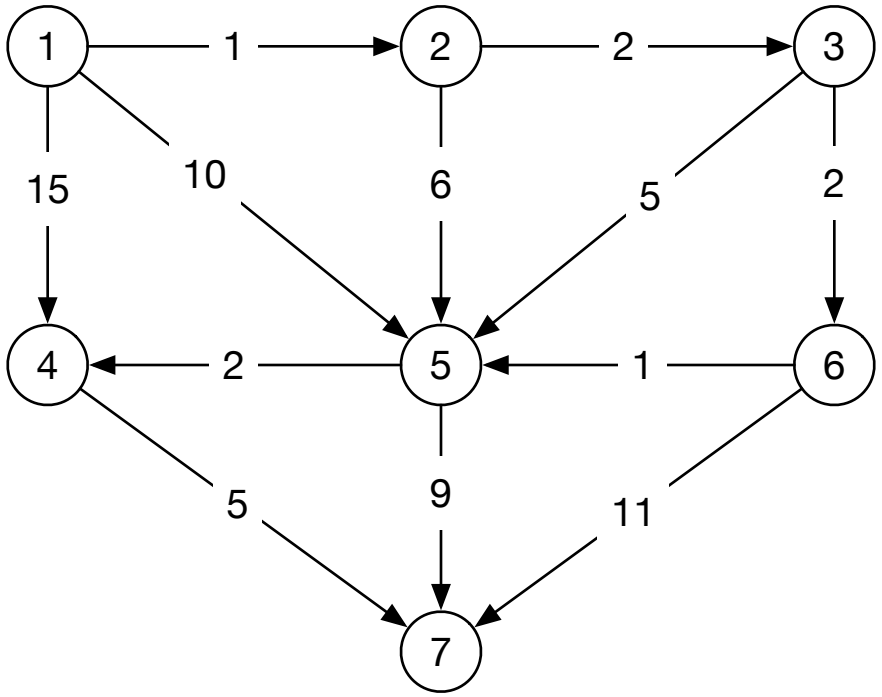
- Create the adjacency list representation of the following graph **ordering** strictly alphabetically. E.g. the adjacency list of N is N: B, D, K.
- Use this alphabetical ordering when selecting nodes in the following task:
- Execute the strongly connected component algorithm (starting in A because A comes alphabetically first.

Show the state of the algorithm after each phase, giving for each node the start and the finishing time.



3 pts **Problem 2:**

Use the Floyd-Warshall algorithm to determine the distance between all the nodes of the following directed graph.



Show the state of the distance matrix after each round. Show how you can use the predecessor matrix Π in order to find the best route betweeen 1 and 7.

2 pts **Problem 3:**

An undirected weighted graph has a unique edge with minimum weight. Show (using e.g. Kruskal's or Prim's algorithm) that this edge is going to be part of all minimum weight spanning trees.