

1. Weighted directed graphs are directed graphs such that there is an integer weight associated with every edge. Consider a weighted directed graph with all edges having positive weight. The length of a path from vertex a to vertex b in this graph is the sum of weight of edges in this path. Consider the problem of computing the shortest path between every pair of vertices. Design an algorithm for solving this problem. It might be easier to first design an algorithm for finding the shortest path length between every pair of vertices and then the shortest paths. Use ideas from the Warshall's algorithm discussed in the class.