

Problem A. Create a graph.

Problem i. Perform BFS and DFS traversal.

Problem ii. Given a directed graph, find the shortest path from vertex s (arbitrary) to vertex t (arbitrary) or else state that such path doesn't exist.

Problem B. Welcome to the Cloud Computing Laboratory! Here, we have n cutting-edge computers, some interconnected by a network of m Ethernet cables. However, there's a fascinating challenge: not all of our computers are connected to each other, and we aim to establish complete connectivity by adding extra Ethernet cables. As a network administrator, your mission is to achieve this connectivity goal with the utmost efficiency. Your task is to determine the minimum number of these additional Ethernet cables needed to make them connected.

Problem C. Implement Prim's algorithm and Kruskal's algorithm.

Problem D. Perform radix sort and shell sort.