

Tutorial 9: CS21003 Algorithms I

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1. Let $G = (V, E)$ be a weighted undirected graph where the edge weights are either 1 or 2. Develop an efficient algorithm for finding the Minimum Spanning Tree of G . Analyze the complexity.
2. Let $G = (V, E)$ be a weighted directed graph that has exactly one negative weight edge. All other edge weights are positive. Present an efficient algorithm to find the shortest cost path from node s to node g .
3. Let $G = (V, E)$ be an unweighted directed graph. Considering the edges to have weight 1, develop an efficient algorithm to find all pair shortest length paths in G .