CSL 356: Analysis and Design of Algorithms
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1. Give an algorithm for finding the *maximum spanning tree* of a given weighted graph. Maximum spanning tree is a spanning tree of maximum total weight.

2. Given a weighted, undirected graph G and a minimum spanning tree T of G. Suppose that we decrease the weight of one of the edges not in T. Give an algorithm for finding the minimum spanning tree in the modified graph.

3. You are given an undirected graph $G = (V, E)$ with unit edge weights and nodes $u, v \in V$. Design an algorithm that outputs the number of distinct shortest paths between u and v.