Chapter 11

Minimum Spanning Tree Recitation.

11.1 The Spanning Tree Problem.

Definition 11.1.1. A spanning tree T of a graph $G = (V, E)$ is an edges subset of E such that T is a tree (having no cycles), and the graph (V, T) is connected.

Problem 11.1.1 (MST). Let $G = (V, E)$ be a weight graph with weight function $w : E \to \mathbb{R}$. Let's extends the weight for E's subsets by defining for the weight of $X \subset E$ to be $w(X) = \sum_{e \in X} w(e)$. The minimum spanning tree of G is the spanning tree of G that has the minimal weight according to w.

Definition 11.1.2. Let $U \subset V$ we will define the cut associated by U as the outer edges of U we use the following $C = (U, \bar{U})$ to denote the cut.