

Prims Algorithm

The following is a general outline of Prims Algorithm. The purpose is for the reader to translate the algorithm into a programming language of their preference. (We denote $\omega(e)$ to be the weight of an edge e in a graph G).

Algorithm:

Input graph $G = (V, E)$

Let $V_T = \emptyset, E_T = \emptyset$ represent the vertex and edge set of the minimum spanning tree.

Preform $x \cup V_T$ for some arbitrary x .

Let $X = E \setminus x$ be the cut induced by V_T While (cut-induced by V_T is not empty) {

 Choose the edge $e \in X$ that has minimum weight, that is $\omega(e) \leq \omega(w), \forall w \in X$

 Add the vertex $x \in e$ to $E(T)$

}