

CPSC 411

Design and Analysis of Algorithms

Set 9: More Graph Algorithms
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Generic MST Algorithm

- input: weighted undirected graph
 $G = (V, E, w)$
- $T :=$ empty set
- while T is not yet a spanning tree of G
 - find an edge e in E s.t. $T \cup \{e\}$ is a subgraph of some MST of G
 - add e to T
- return T (as MST of G)

Kruskal's Algorithm as a Special Case of Generic Alg.

- Consider edges in increasing order of weight
- Add the next edge iff it doesn't cause a cycle
- At any point, T is a forest (set of trees); eventually T is a single tree