Minimum Spanning Trees

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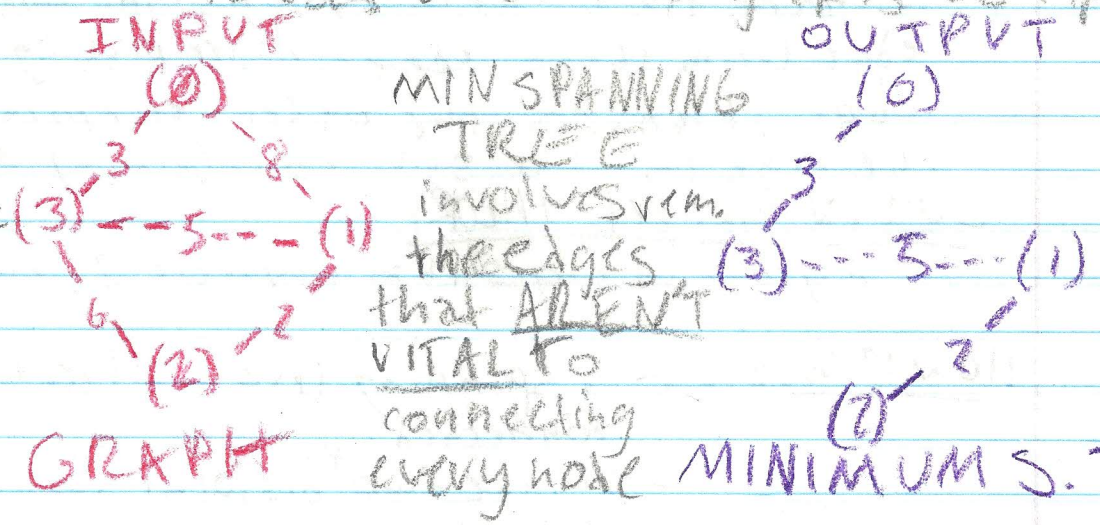
computed using the Kruskal Algorithm
- greedy algo.
- greedy choice is to pick smallest weighted edge that does not cause a cycle in MST so far!

DEF. a graph consisting of the subset of edges which together connect all connected nodes, while minimizing the total sum of weights on the edges

Routine uses undirected graphs as input/output



↓ wasted space ↑ efficiency

- A single graph can have many MSTs
  - "Minimum weight spanning tree" for a weighted, connected, undirected graph has weight <= weight of every other spanning tree (sum of weights given to each edge of spanning tree)
- Has v-1 edges (where v = # of vertices in given graph)
- Steps for Finding MST w/ Kruskal's Algorithm (uses Union-Find algorithm)
  1) Sort all edges in non-decreasing order of their weight
  2) pick smallest edge, check if it forms a cycle w/ spanning tree so far. If cycle is formed include this edge. Else, discard it
  3) Repeat Step #2 until there are (v-1) edges in S.T.