

Assn05 written work

Sources: <https://www.geeksforgeeks.org/difference-between-prim-and-kruskals-algorithm-for-mst/>, <https://www.geeksforgeeks.org/kruskals-minimum-spanning-tree-algorithm-greedy-algo-2/>, <https://www.geeksforgeeks.org/prim-minimum-spanning-tree-mst-greedy-algo-5/>

2. If a graph is connected or has a high number of edges, Prim's algorithm will be better since Kruskal's has to sort the edges. IF the graph in question is sparse or not connected, Kruskal's is the better choice. Kruskal's is also generally simpler to implement.

4. Counterexamples:

4. 0.40 needed, no nickels:

greedy algorithm mandates you take

1 quarter = 0.25, 0.15 left.

1 dime, = 0.10, 0.5 left.

5 pennies = 0.05, 0 left. TOTAL: 7 coins.

HOWEVER, if you go with just dimes instead, you can just use 4 coins

0.55 needed.

2 quarters = 0.5

5 pennies = 0.05, 0 left. TOTAL: 7 coins.

HOWEVER, you can again go with dimes for a total of 5 coins.