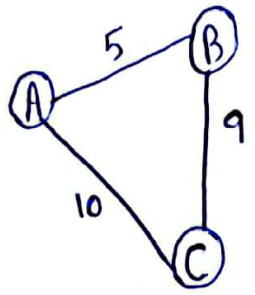
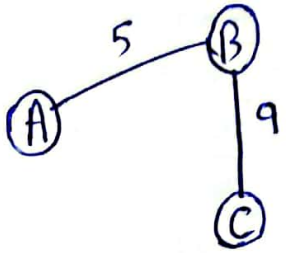
Difference between Minimum spanning tree (MST) and single source shortest path problem (SSSP)

MST is used to connect the entire network in minimum cost
Lets consider the following graph. (Undirected weighted graph)



MST of this graph will be



Total cost = 14

A—B = 5
B—C = 9

Assume that we also want to determine the shortest path to all other vertices of graph from source vertex "A"

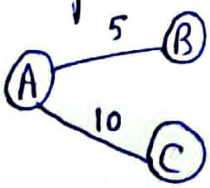
Q: Do you think MST can also be used to determine single source shortest path ?

Consider the MST drawn above

Q: what will be the cost to reach vertex "C" from "A"
Ans: 14 (Path ⟹ A—B—C)

Is this the shortest path to reach "C" from source "A"?
Ans: No

Shortest path to reach "C" from "A" is 10 using the direct edge
So if we draw dijkstra or single source shortest path graph then it will be like



So you can't apply Prim's to determine SSSP.