Design and Analysis of Algorithms

Tutorial-6

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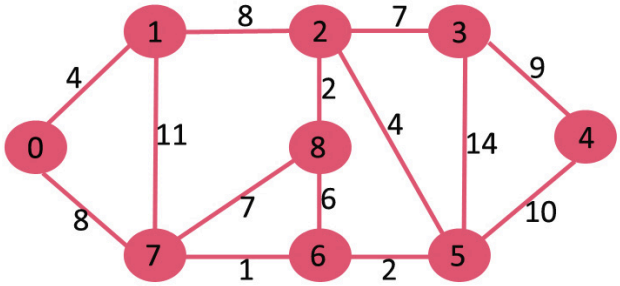
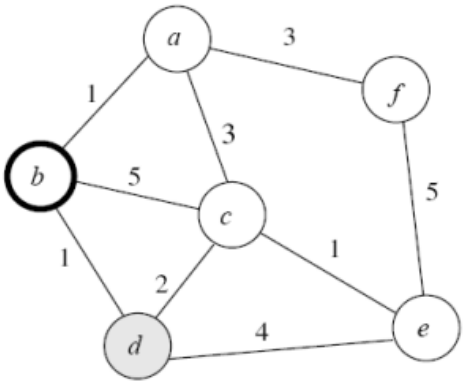
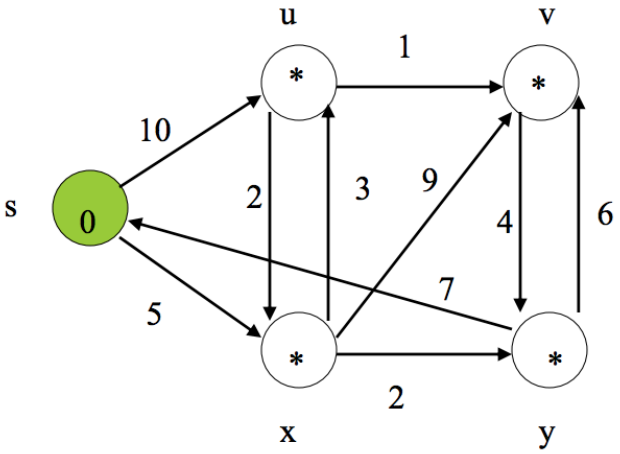
1. What do you mean by minimum spanning tree? What are the applications of MST?



2. Please analyse the time and space complexity of Prim, Kruskal, Dijkstra and Bellman ford algorithm.
3. Apply Kruskal and Prim's algorithm on graph given on right side to compute MST and its weight?



4. Given a directed weighted graph. You are also given the shortest path from a source vertex 's' to a destination vertex 't'. Does the shortest path remain same in the modified graph in following cases?
   - If weight of every edge is increased by 10 units.
   - If weight of every edge is multiplied by 10 units.
5. Apply Dijkstra and Bellman algorithm on graph given on right side to compute shortest path to all nodes from node S.



6. Apply all pair shortest path algorithm - Floyd Warshall on below mentioned graph and also analyse the time and space complexity of algorithm.