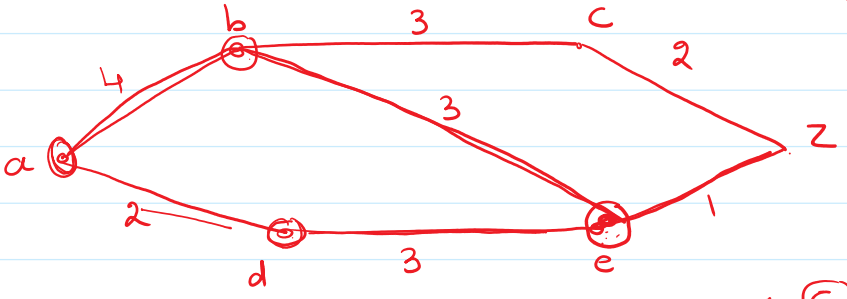
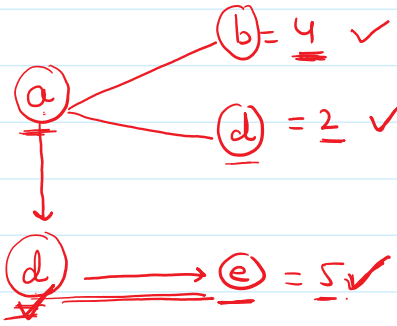
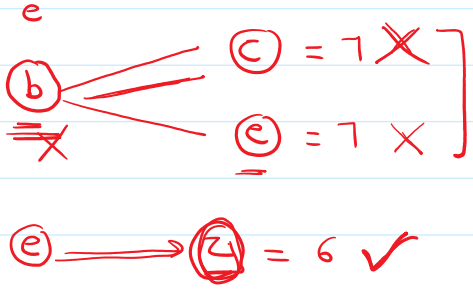
Sunday, October 31, 2021 11:21 PM

Shortest path Problem.
Dijkstra's Algorithm.

Q1) Find the shortest path between (a) and z in the following graph using Dijkstra's Algorithm.



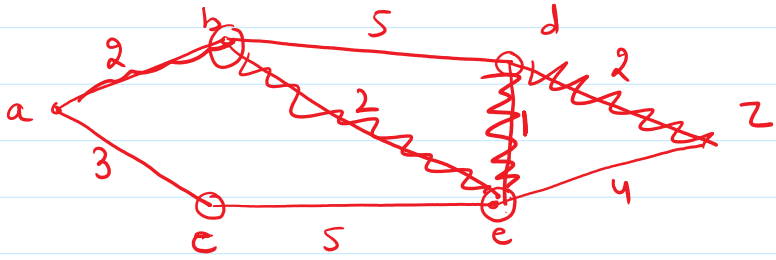




a → d → e → z

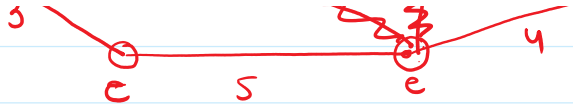
length of path = 2 + 3 + 1 = 6

Q) Find the shortest path from a to z using dijkastra's Algorithm.



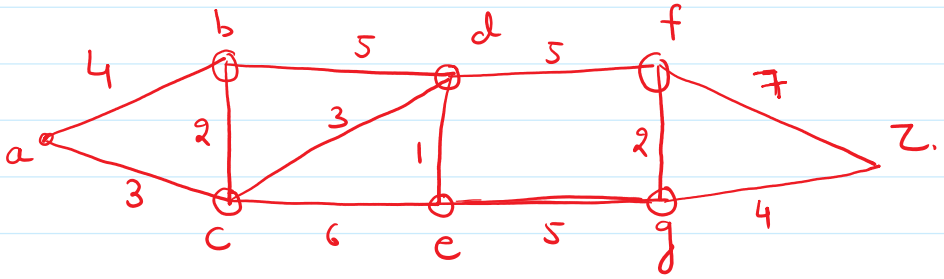
a → b — e — d → z

length of path



(a) → (b) = 2 ✓
(a) → (c) = 3 ✓
(b) → (d) = 7 ✗
(b) → (e) = 4 ✓
(c) → (e) = 8 ✗
(e) → (d) = 5 ✓
(e) → (z) = 8 ✗
(d) → (z) = 7 ✓

length of path
= 2 + 2 + 1 + 2
= 7



(a) → (b) = 4 ✓
(a) → (c) = 3 ✓
(b) → (d) = 9 ✗
(c) → (b) = 5 ✗
(c) → (d) = 6 ✓
(c) → (e) = 9 ✗
(d) → (e) = 7 ✓
(d) → (f) = 11 ✓
(e) → (g) = 12 ✓
(f) → (z) = 18 ✗
(f) → (g) = 13 ✗
(g) → (z) = 16 ✓

a → c → d → e → g → z.
length of the path is = 16 Ans