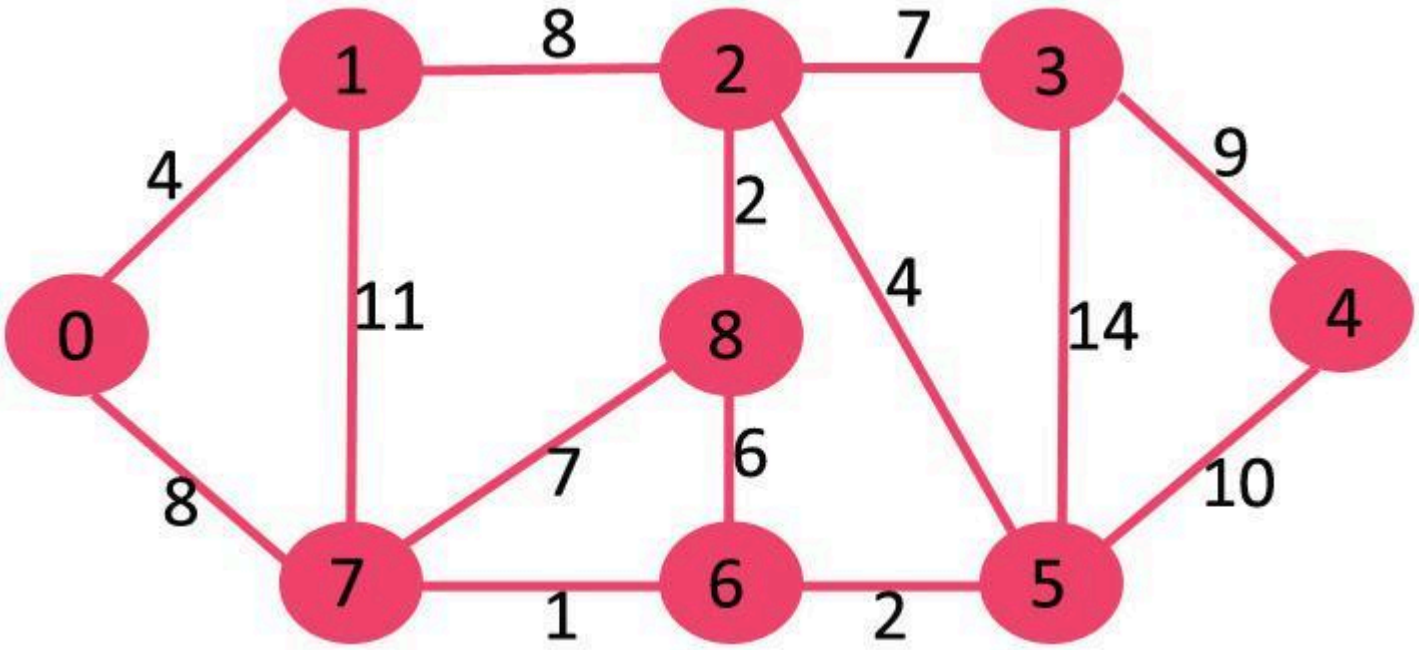
Dijkstra’s Shortest Path Algorithm | Greedy

Given a graph and a source vertex in the graph, find the **shortest paths** from the source to all vertices in the given graph.

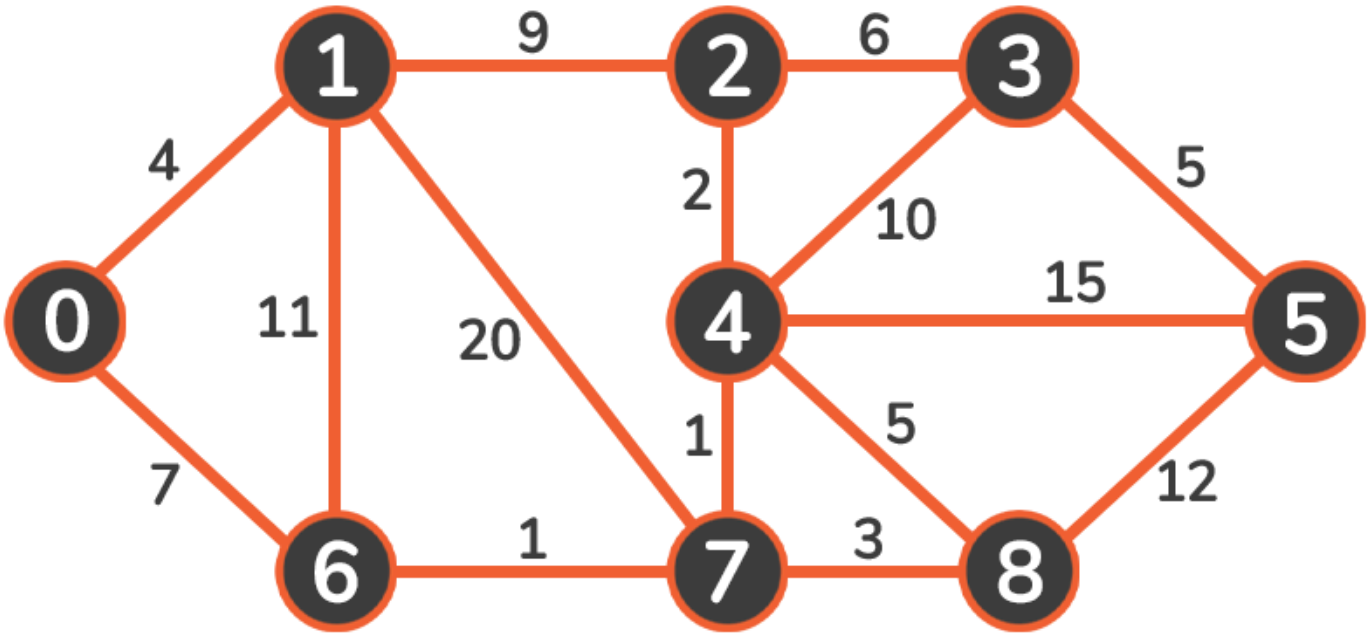
Examples:

Input: *src = 0, the graph is shown below.*

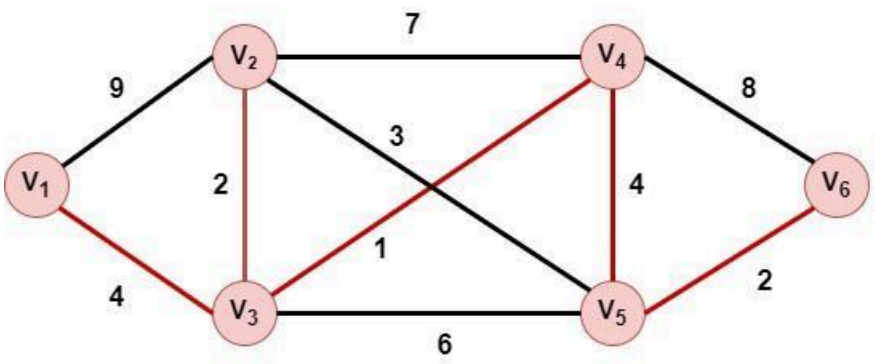


Output: *0 4 12 19 21 11 9 8 14*

Explanation: *The distance from 0 to 1 = 4.*
The minimum distance from 0 to 2 = 12. 0->1->2
The minimum distance from 0 to 3 = 19. 0->1->2->3
The minimum distance from 0 to 4 = 21. 0->7->6->5->4
The minimum distance from 0 to 5 = 11. 0->7->6->5
The minimum distance from 0 to 6 = 9. 0->7->6
The minimum distance from 0 to 7 = 8. 0->7
The minimum distance from 0 to 8 = 14. 0->1->2->8



vertex	cost to get to it from vertex 0
0	0
1	4
2	11
3	17
4	9
5	24
6	7
7	8
8	11



	Distance	Previous Node	Visited
V_1	0	None	True
V_2	6	V3	True
V_3	4	V_1	True
V_4	5	V3	True
V_5	9	V4	True
V6	11	V5	True

Path: V_1 - V_3 - V_4 - V_5 - V_6

Total Cost: 11