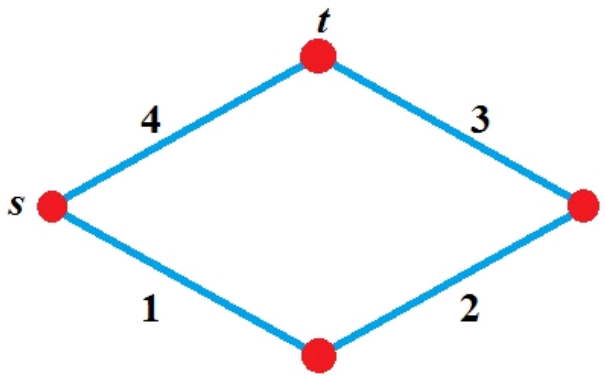
Step-1

(b) Let us consider the following example, which will show that the greedy algorithm may fail, while obtaining the shortest path between two vertices, *s* and *t*.



It is clear that the shortest path between *s* and *t* is of the length 4.

Step-2

Let us apply the greedy algorithm. It will start with the edge 1. Then it will accept 2 and finally 3. The edge 4 will be rejected because inclusion of that edge will create a loop.

Step-3

Thus, we get the shortest path from *s* to *t* as: 1-2-3.

The length of this path is 1 + 2 + 3 = 6. But we know that the shortest path from *s* to *t* is 4. Thus, by this example, we observe that the greedy algorithm may fail to find the shortest path between a pair of vertices.