

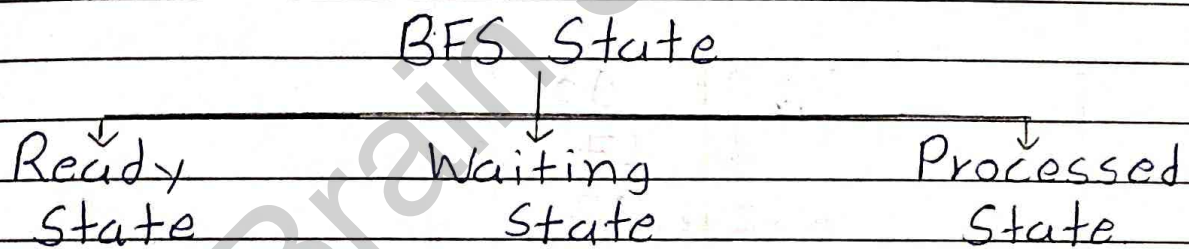
* BFS (Breath First Search):

Breath First Search method is use for searching in a graph.

For BFS searching, we have to use Queue for tracking graph.

In BFS, for tracking the graph we have to start from Root vertex.

In BFS there are three state.

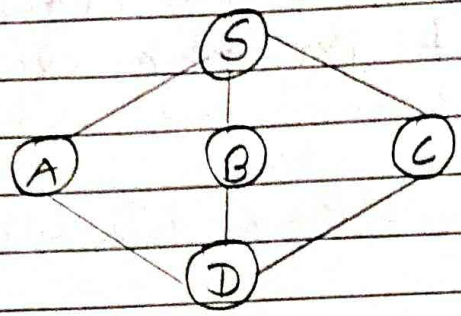


→ Ready State: Element is not in Queue and Processed not start.

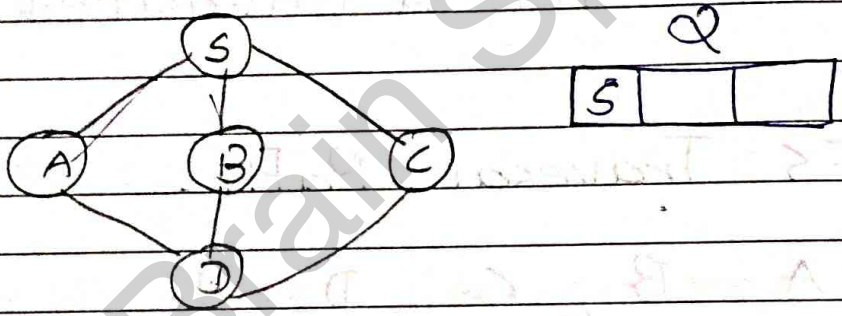
→ Waiting State: Element is in Queue, but Processed not start.

→ Processed state: Processed is start and element is out in the Queue.

Ex. Track the Graph:

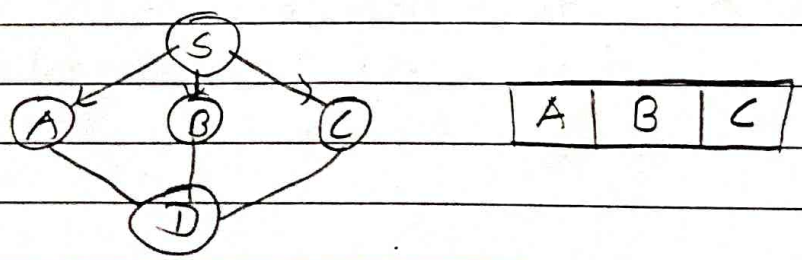


- Step - 1 - In BFS, First we have to select Root vertex and insert root element in the Queue.

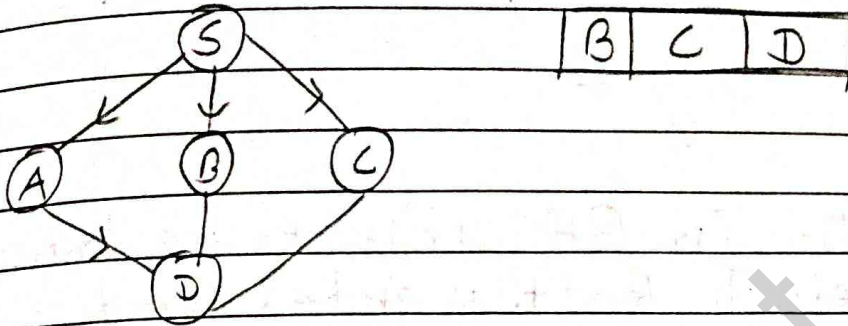


- Step - 2 - After the root element, we have to select adjacent nodes in the graph:

In this graph A, B and C are adjacent node and insert into Queue and delete root element



- step - 3 - After that select First element and insert adjacent node element in the queue



- Step - 4 - After the D element there are no unvisited node.

So, BFS Traversal Path:

S, A, B, C, D

- Algorithm:

1. Initialize all nodes to ready state.
2. Insert the starting node in queue and change its state to waiting state.

3 ~~delete~~ Repeat the 4 and 5 step until Queue is empty.

4 Delete the front node n of queue. Process and change to state to Processed state.

5 Insert n in the queue, all the adjacent node are in ready state and change this state to waiting state.

6 Exit.

* DFS:

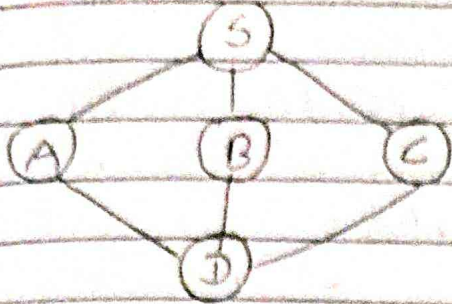
Depth First Search method is use for searching in a graph.

For DFS, we have to use stack for tracking the path.

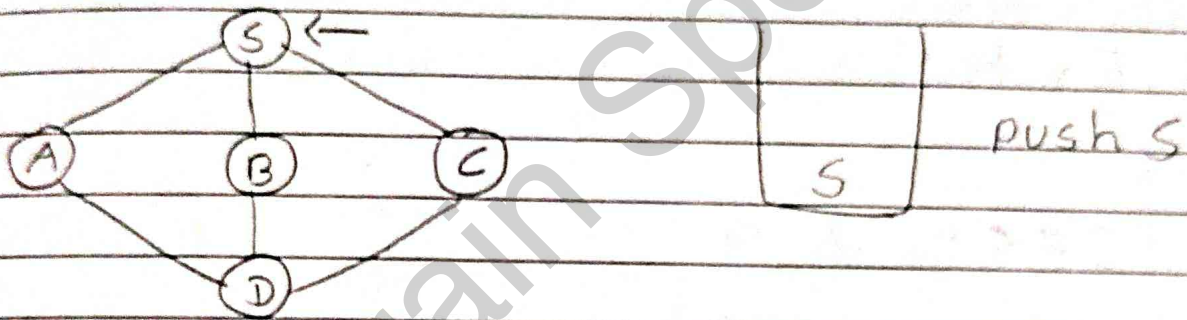
In DFS, we have to start from the root node.

First we have to insert root element in root.

Ex. Track the Grap:

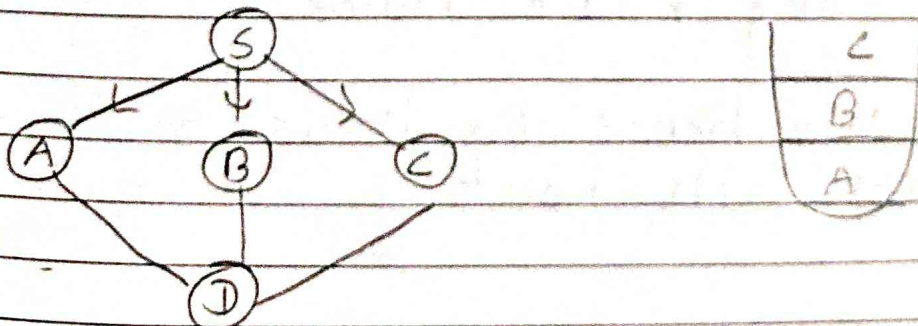


- step-1 - In DFS, First we have to select root element and push root element in the stack.

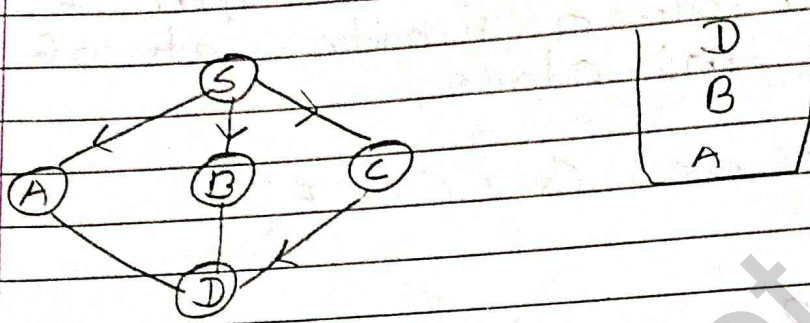


- Step-2 - After the root element, we have to select root element adjacent node.

and pop the A and push A, B and C



- Step-3 - After that take C element and push adjacent element of the C. and pop C.



- Step-4 - After that pop D, pop B and pop A.

So, DFS Traversal Path.

S C D B A