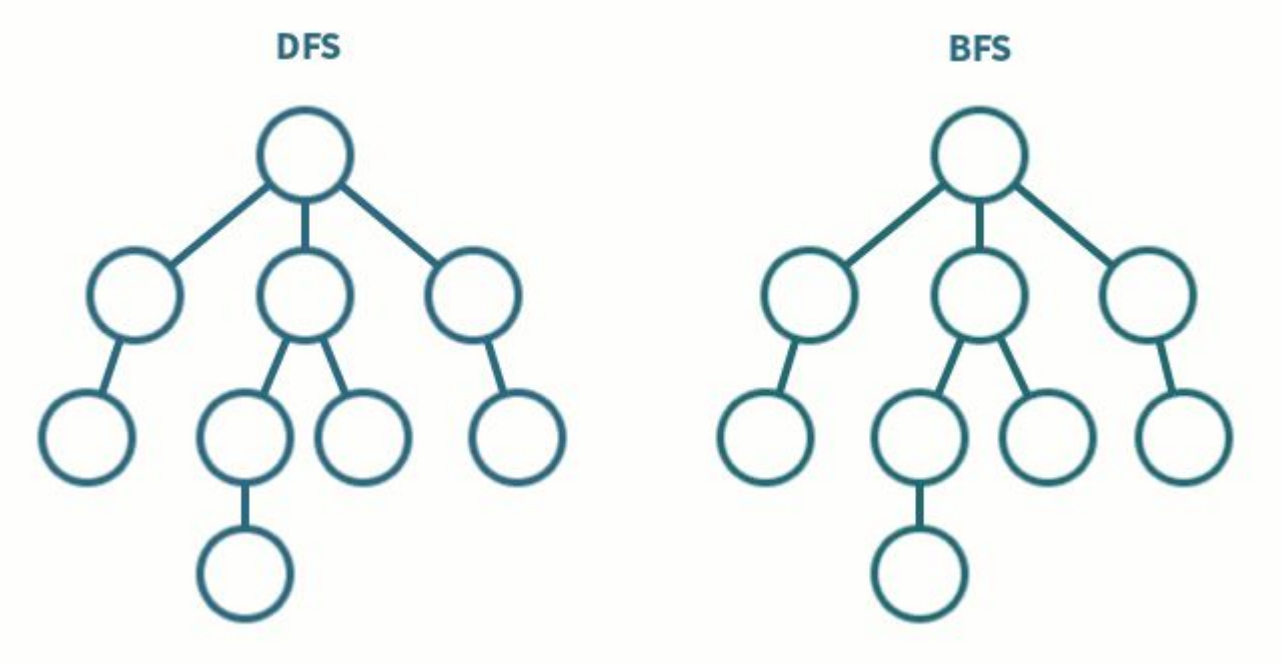
Depth First Search

Graph Traversal

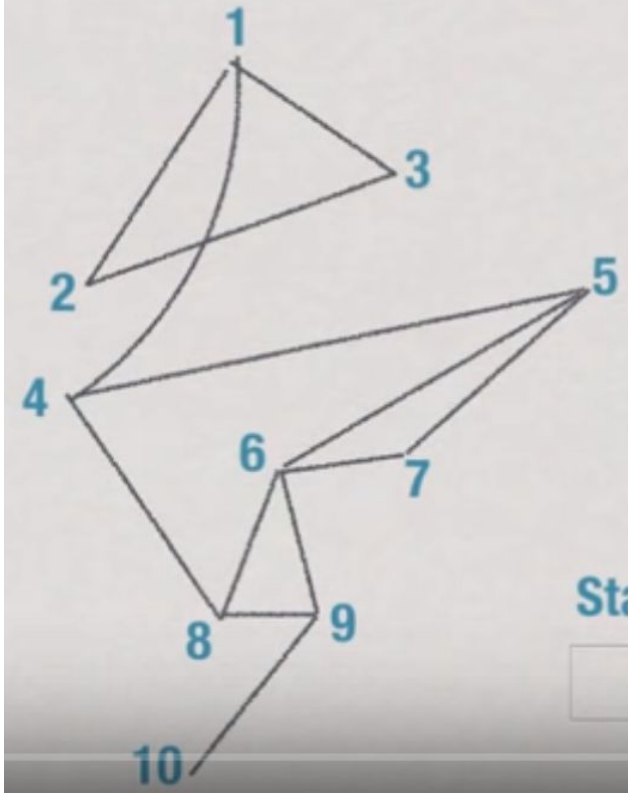

DFS
BFS

Depth first search

- Start from i, visit a neighbour j
- Suspend the exploration of i and explore j instead
- Continue till you reach a vertex with no unexplored neighbours
- Backtrack to nearest suspended vertex that still has an unexplored neighbour
- Suspended vertices are stored in a **stack**
  - Last in, first out: most recently suspended is checked first

Depth first search

Start at 4



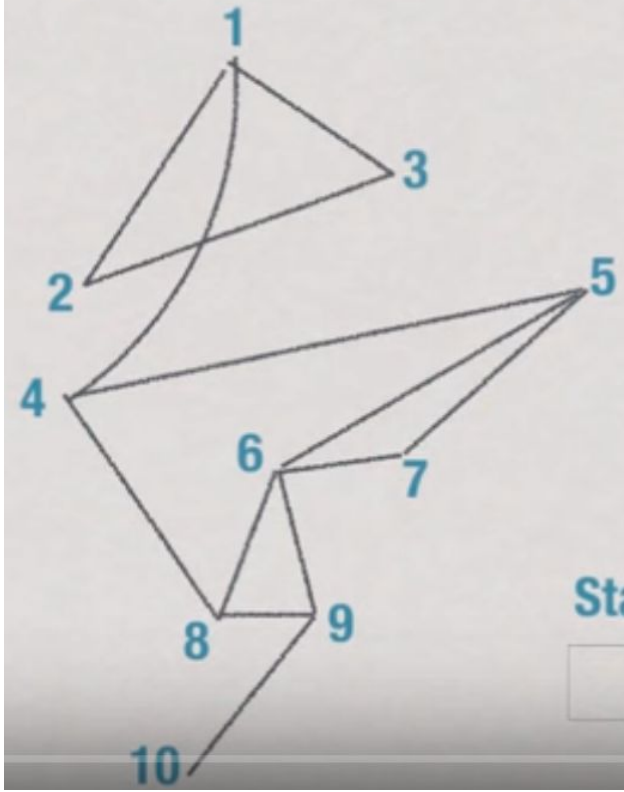
Visited

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Stack of suspended vertices

Depth first search

Start at 4



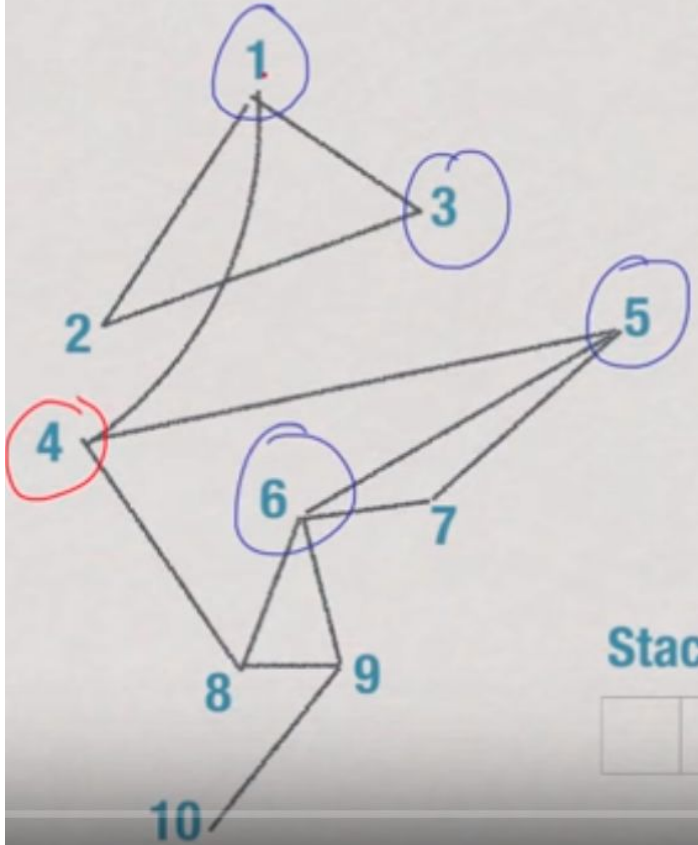
Visited

1	
2	
3	
4	1
5	
6	
7	
8	
9	
10	

Stack of suspended vertices

Depth first search

Start at 4



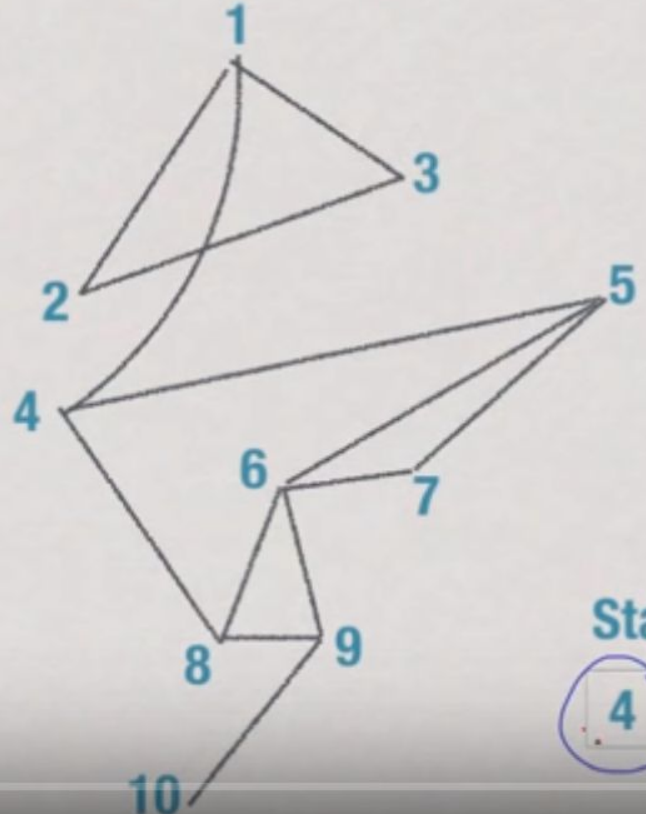
Visited

1	
2	
3	
4	1
5	
6	
7	
8	
9	
10	

Stack of suspended vertices

Depth first search

Start at 4



Visited

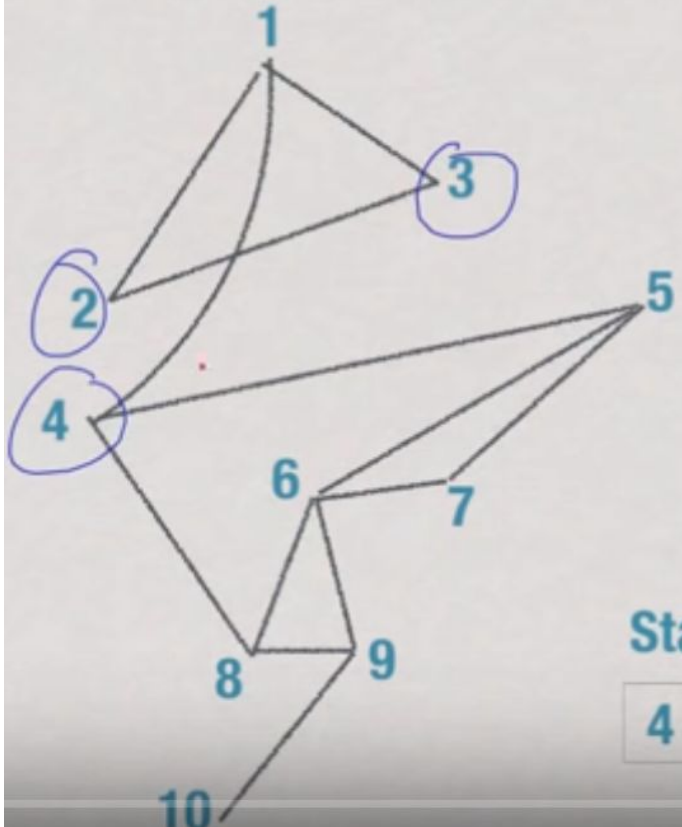
1	1
2	
3	
4	1
5	
6	
7	
8	
9	
10	

Stack of suspended vertices

4									

Depth first search

Start at 4



Visited

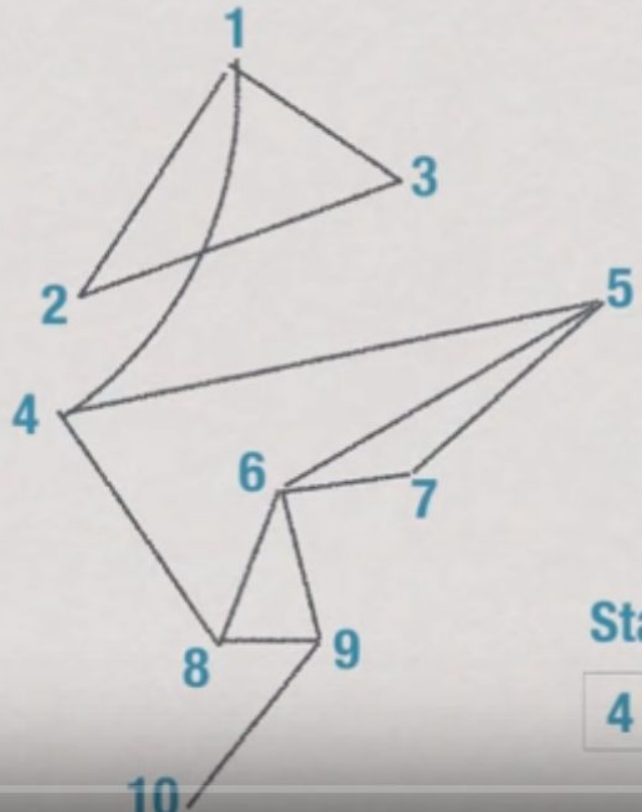
1	1
2	1
3	
4	1
5	
6	
7	
8	
9	
10	

Stack of suspended vertices

4	1								

Depth first search

Start at 4



Visited

1	1
2	1
3	1
4	1
5	
6	
7	
8	
9	
10	

Stack of suspended vertices

4	1	2							

Self ...

Refer to the Class Notes For Further Solution.