



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

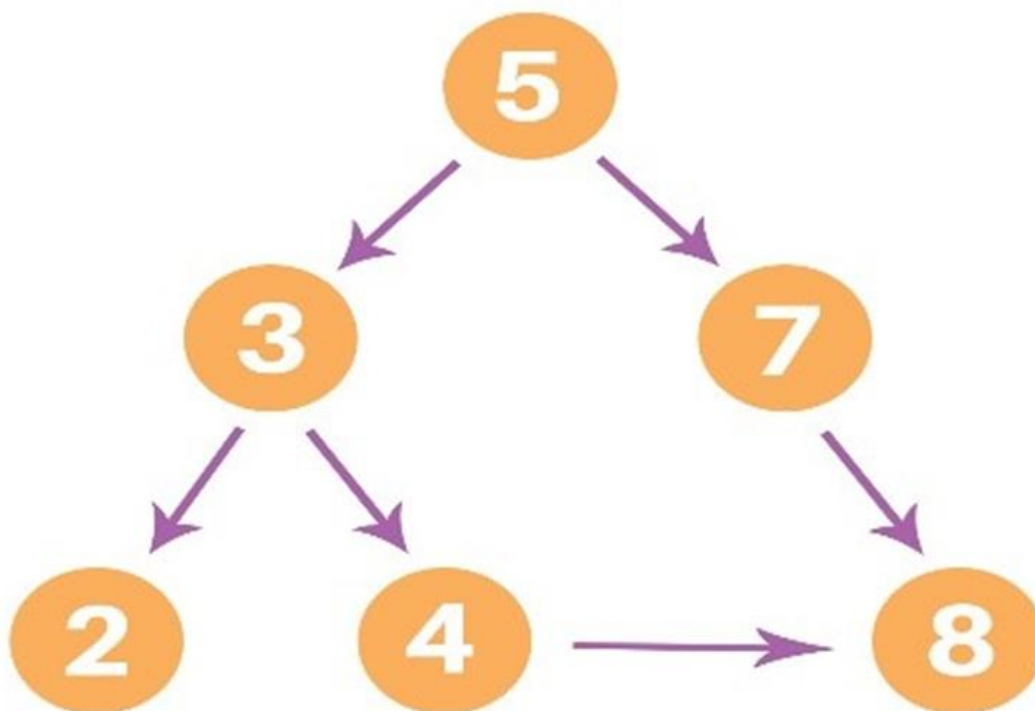
(An ISO – 9001: 2015 Certified & 'A' Grade accredited Institution by NAAC)

Artificial Intelligence Lab

KCA 351: Session 2021-22

Experiment – No-4

Problem Statement : The Depth-First Search is a recursive algorithm that uses the concept of backtracking. It involves thorough searches of all the nodes by going ahead if potential, else by backtracking. Here, the word backtrack means once you are moving forward and there are not any more nodes along the present path, you progress backward on an equivalent path to seek out nodes to traverse. All the nodes are progressing to be visited on the current path until all the unvisited nodes are traversed after which subsequent paths are going to be selected.





KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & 'A' Grade accredited Institution by NAAC)

Artificial Intelligence Lab KCA 351: Session 2021-22

Program:

```
graph = {
    5 : [ 3 , 7 ] ,
    3 : [ 2 , 4 ] ,
    7 : [ 8 ] ,
    2 : [ ] ,
    4 : [ 8 ] ,
    8 : [ ]
}
visited = []
queue = []
def Dfs(visited, graph, node):
    visited.append(node)
    queue.append(node)
    while queue:
        s = queue.pop()
        print(s, end=" ")
        for neighbour in graph[s]:
            if neighbour not in visited:
                visited.append(neighbour)
                queue.append(neighbour)
print("The Traversal is:")
Dfs(visited, graph, 5)
```

Output :

```
print("The Traversal is:")
Dfs(visited, graph,5)
```

```
The Traversal is:
5 7 8 3 4 2
```