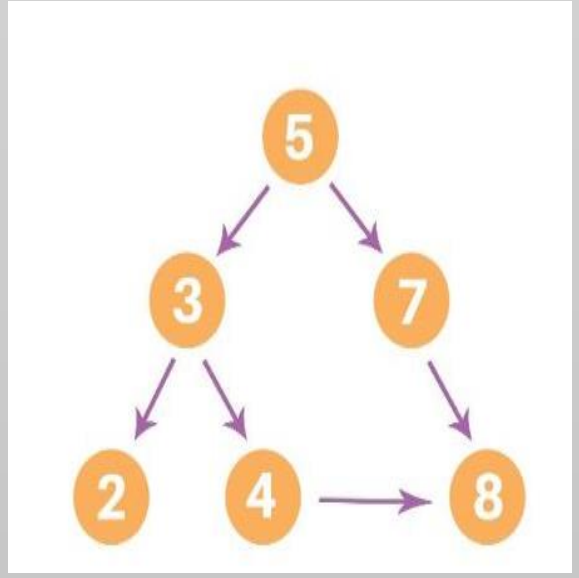
المحاضرة الرابعة

Depth First Search & Breath First Search

depth first search

```
graph = {
'5' : ['3','7'],
'3' : ['2', '4'],
'7' : ['8'],
'2' : [],
'4' : ['8'],
'8' : []
}
Visited=[]
def dfs(visited, graph, node):
    if node not in visited:
        print (node)
```



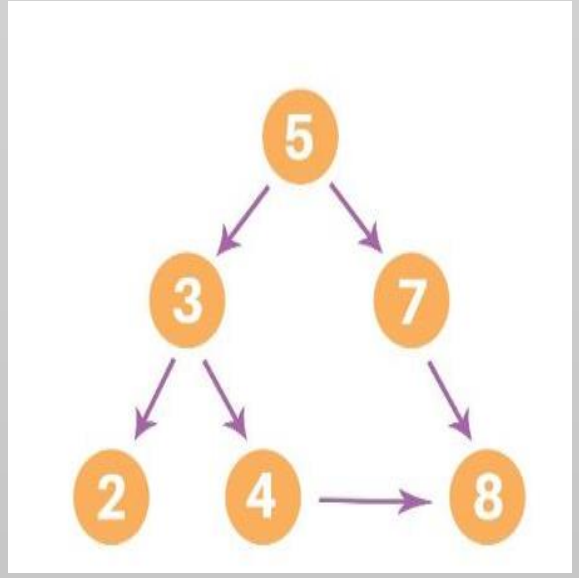

```
  visited.append(node)
for neighbour in graph[node]:
  dfs(visited, graph, neighbour)
print("Following is the Depth-First Search")
dfs(visited, graph, '5')
```

#implementation

Following is the Depth-First Search
5 3 2 4 8 7

Breath first search

```
graph = {
'5' : ['3','7'],
'3' : ['2', '4'],
'7' : ['8'],
'2' : [],
'4' : ['8'],
'8' : []
}
visited = [] # List for visited nodes.
queue = []     #Initialize a queue
def bfs(visited, graph, node):
    visited.append(node)
    queue.append(node)
```




```
    while queue:
    m = queue.pop(0)
    print (m, end = " ")
    for neighbour in graph[m]:
        print("n= ", neighbour)
        if neighbour not in visited:
            visited.append(neighbour)
            queue.append(neighbour)
print("Following is the Breadth-First Search")
bfs(visited, graph, '5')
```