Momin Ejaz Ahmad Riyaz Ahmad

Roll 35

TE, Computer Science

AI Practical 1: BFS

Python Code:

```
graph = {
   "A" : ["B","D"],
   "B" : ["A","C"],
   "C" : ["B"],
   "D" : ["A","E","F"],
   "E" : ["D","F","G"],
   "F" : ["D","E","H"],
   "G" : ["E","H"],
   "H" : ["G","F"],
}
visited = {}
level = {}
parent = {}
traversal_output = []
for node in graph.keys():
   visited[node]=False
   parent[node]=None
   level[node]=-1
from queue import Queue
queue = Queue()
S = "A"
visited[S] = True
level[S] = 0
queue.put(S)
while not queue.empty():
   u = queue.get()
```

```
    traversal_output.append(u)
    for v in graph[u]:
        if not visited [v]:
            visited [v] = True
            parent [v] = u
            level [v] = level [u]+1
            queue.put(v)
print(traversal_output)
```

Output:

```
['A', 'B', 'D', 'C', 'E', 'F', 'G', 'H']
```