***EXPERIMENT 01***

***Program:***

**“””Exp 01: BFS using Queue“””**

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***“””\_\_\_\_B F S T R A V E R S A L\_\_\_\_ “””***  
def bfs(start,tree):  
    visited=[]  
    queue=[start]  
    while queue:  
        node=queue.pop(0)  
        if node not in visited:  
            visited.append(node)  
            for child\_node in tree[node]:  
                if child\_node not in visited:  
                    queue.append(child\_node)  
    print("BFS TRAVERSAL IS : ",visited)

***“””\_\_\_\_B F S S E A R C H \_\_\_\_ “””***  
def bfs\_search(start,goal,tree):  
    visited=[]  
    queue=[start]  
    while queue:  
        node=queue.pop(0)      
        if node not in visited:  
            visited.append(node)  
            if node is goal:  
                  print("Node ",goal," found, the path is: ",visited)  
                  return  
            for child\_node in tree[node]:  
                if child\_node not in visited:  
                    queue.append(child\_node)  
    print("Could not find ",goal)  
***“””\_\_\_\_I N P U T \_\_\_\_ “””***  
tree={  
      'A':['B','C'],  
      'B':['D','E','A'],  
      'C':['F','G','A','E'],  
      'D':['B'],  
      'E':['B','C'],  
      'F':['C'],  
      'G':['C']  
      }  
start,goal=input("Enter the start node and goal node: ").split(" ")

***“””\_\_\_\_F U N C T I O N C A L L S\_\_\_\_ “””***  
bfs(start,tree) #T R A V E R S A  L    
bfs\_search(start, goal, tree) #S E A R C H

***Output:***

***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

Enter the start node and goal node: A G

BFS TRAVERSAL IS : ['A', 'B', 'C', 'D', 'E', 'F', 'G']

Node G found, the path is: ['A', 'B', 'C', 'D', 'E', 'F', 'G']

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