**Artificial Intelligence Lab Assignment 1**

def dfs(adjancecy\_matrix, v, visited):

visited.append(v)

print(v,end=" ")

for i in range(len(adjancecy\_matrix)):

if (i not in visited) and (adjancecy\_matrix[v][i]):

dfs(adjancecy\_matrix,i, visited)

def bfs(adjancecy\_matrix,visited, queue):

if not queue:

return

node = queue[0]

queue = queue[1:]

for i in range(len(adjancecy\_matrix)):

if (adjancecy\_matrix[node][i]) and (i not in visited):

visited.append(i)

queue.append(i)

bfs(adjancecy\_matrix, visited, queue)

node = int(input("ENTER TOTAL NODES = "))

adjancecy\_matrix = [[0 for i in range(node)] for i in range(node)]

for i in range(node):

for j in range(i+1,node):

check = input(f"IS NODE PRESENT BETWEEN {i} and {j} (y/n) = ")

if check=='y' or check=='Y':

adjancecy\_matrix[i][j] = adjancecy\_matrix[j][i] =1

print("DFS = ",end="")

visited = []

dfs(adjancecy\_matrix,0, visited) # 0 is Start vertex

print("")

queue = [0]

visited = [0]

bfs(adjancecy\_matrix,visited, queue) # 0 is Start vertex

print("BFS = ",end="")

[print(i,end=" ") for i in visited]

Output:

PS C:\Users\hp\Desktop\AI> python assi1.py

ENTER TOTAL NODES = 4

IS NODE PRESENT BETWEEN 0 and 1 (y/n) = y

IS NODE PRESENT BETWEEN 0 and 2 (y/n) = y

IS NODE PRESENT BETWEEN 0 and 3 (y/n) = n

IS NODE PRESENT BETWEEN 1 and 2 (y/n) = n

IS NODE PRESENT BETWEEN 1 and 3 (y/n) = y

IS NODE PRESENT BETWEEN 2 and 3 (y/n) = y

DFS = 0 1 3 2

BFS = 0 1 2 3

PS C:\Users\hp\Desktop\AI>