**EX.NO.1(b)-DEPTH FIRST SEARCH - S.ARUNAGIRI-9062**

def dfs(tree, start, target):

temp = False

visited = set()

stack = [start]

while stack:

node = stack.pop()

if node not in visited:

print(node, end=' ')

visited.add(node)

if node == target:

print("\nTarget Node Found")

temp = True

break

for neighbor in tree[node][::-1]:

if neighbor not in visited:

stack.append(neighbor)

if not temp:

print("\nTarget Node Not Found")

tree = {

'S': ['A', 'H'],

'A': ['B', 'C'],

'H': ['I', 'J'],

'B': ['D', 'E'],

'C': ['G'],

'I': ['K'],

'J': [],

'D': [],

'E': [],

'G': [],

'K': []

}

start\_node = 'S'

target = input("Enter Target Node:")

print("DFS traversal starting from node", start\_node, ":")

dfs(tree, start\_node, target)

**OUTPUT:**

Enter Target Node:J

DFS traversal starting from node S :

S A B D E C G H I K J

Target Node Found