**Program:**

def expand(node):

if node not in graph: return []

return graph[node]

def iddfs(root, goal, maxDepth): depth = 0 while depth <= maxDepth:

result, path = dls(root, goal, depth, []) if result == goal:

return path

depth += 1

def dls(node, goal, depth, path):

path.append(node) if node == goal:

return node, path

elif depth > 0:

for child in expand(node):

result, new\_path = dls(child, goal, depth - 1, path.copy()) if result == goal:

return result, new\_path

return None, path[:-1]

graph = {} print("Enter -1 to stop adding nodes") while True:

parent = input("Enter parent node : ") if parent == "-1": break c = input("Enter childern nodes separated by comma : ") children = c.split(",") graph[parent] = children

root = input("Enter the root node : ") goal = input("Enter the goal node : ") result = iddfs(root, goal, 5)

if result == None:

print("\nTarget not found within the depth limit")

else:

print("\nTarget found !\nPath is : ") print(result)

**Output:**

