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**Assignment No. 1**

**DFS**

class Node:

def \_\_init\_\_(self, name):

self.name = name

self.adjacency\_list = []

self.visited = False

def depth\_first\_search(start\_node):

stack = [start\_node]

# iterate till stack becomes empty

while stack:

actual\_node = stack.pop()

actual\_node.visited = True

print(actual\_node.name)

for n in actual\_node.adjacency\_list:

if not n.visited:

stack.append(n)

if \_\_name\_\_ == '\_\_main\_\_':

node1 = Node("A")

node2 = Node("B")

node3 = Node("C")

node4 = Node("D")

node5 = Node("E")

node1.adjacency\_list.append(node2)

node1.adjacency\_list.append(node3)

node3.adjacency\_list.append(node5)

node5.adjacency\_list.append(node4)

depth\_first\_search(node1)

**Output:**

