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**Assignment No. 1**

**BFS**

```
class Node:
    def __init__(self, name):
        self.name = name
        self.adjacency_list = []
        self.visited = False



def breadth_first_search(start_node):
    queue = [start_node]

    # keep iterating until the queue becomes empty
    while queue:

        # remove and return the first item we have inserted
        actual_node = queue.pop(0)
        actual_node.visited = True
        print(actual_node.name)

        # consider the neighbors of actual node
        for n in actual_node.adjacency_list:
            if not n.visited:
                queue.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)

    breadth_first_search(node1)
```

**output**