W2D3

A. Implement a recursive algorithm to count the number of nodes.

To count the number of nodes we have to traverse through all the nodes and we have different kind of traverse, some of them are

- In order Traverse
- Pre order Traverse
- Post order Traverse

For this question I will count based on in order Traverse since this is one of the common traverse.

But this is only single linked list so the algorithm will be

```
TraverseTree (Node focusNode)
                if (focusNode! = null)
    TraverseTree (focusNode.next);
            count++;
```

```
if our Node algorithm is
       Node
       Next<-Node
      Data<-Object
```

B. Implement a recursive algorithm to reverse the list

- To Reverse in single linked list, mark the last node to head if available
- And the next node to the previous.
- Call the recursive method

The algorithms for this will be

Input: two parameters one which holds the current node and the other the previous node.

Output: reverse the list

```
Node reverseNode (current , previous )
    if (current. next =null)
        head = current
        current. next<-previous
        return head
    Node next1<- current. next
    Current. next = previous
    reverseNode (next1, current)
    return head
```