Lab W2D4

Question 4. Write a recursive function to

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.

Node
    Key<-Integer
        Left Child<-Node
        Right Child<-Node

(a) *count the nodes of a BST*

```
inOrderTraverseTree (Node focusNode)
    if (focusNode! = null)
          inOrderTraverseTree (focusNode.leftChild)
             increment count node
       inOrderTraverseTree (focusNode.rightChild)
```

(b) *count the leaves of a BST*

```
inOrderTraverseTree (Node focusNode)
 if (focusNode! = null)
      inOrderTraverseTree (focusNode.leftChild)
 if (focusNode.leftChild==null && focusNode.rightChild==null)
                 increment count leaf
    inOrderTraverseTree (focusNode.rightChild)
```

(c) *create a mirror image of the BST*

```
mirrorBST (Node root)
if (root = null || (root. leftChild = null && root. rightChild = null))
             return
  Node temp = root. leftChild
 root. leftChild = root. rightChild
 root. rightChild= temp
 mirrorBST (root. leftChild)
 mirrorBST (root. rightChild)
```