**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

1. ***count the nodes of a BST***

**inOrderTraverseTree (Node focusNode)**

**if (focusNode! = null)**

**inOrderTraverseTree (focusNode.leftChild)**

**increment count node**

**inOrderTraverseTree (focusNode.rightChild)**

1. ***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)**

1. ***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)**