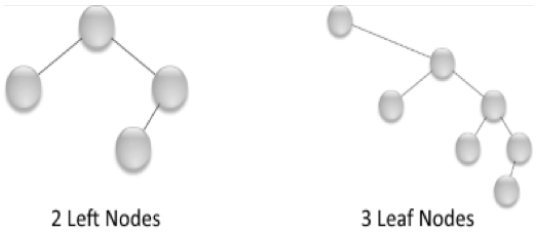
CSC 212 Tutorial
Binary Trees

Problem 1

Write the method *countLeafs* that should return the number of leaf nodes in the tree. A leaf node is a node that has no children.

- part of the *Binary Tree ADT*, The method signature is: **public int** `countLeafs()`.
- as a user of the *Binary Tree ADT*, assume the following method exists in the ADT: isLeaf (boolean flag): **requires**: Binary tree is not empty. **input**: None. **results**: if the current node of the binary tree is a leaf then flag is set to true otherwise it is set to false. **output**: flag.



Problem 2

Write the member method *countNodesIn* member of the class *BST* that returns the number of nodes in the subtree rooted at the node with key k. Assume that k exists. You are not allowed to call any of the *BST* methods. The method signature is **public int** `countNodesIn(int k)`.

Problem 3

1. Insert the following keys into an empty binary search tree: 37, 23, 18, 65, 25, 62, 20, 59, 63, 90, 18.
2. Remove the following keys from the final tree in part 1: 18, 90, 37.
3. If we wish to print the keys in increasing order, which traversal method should we use?