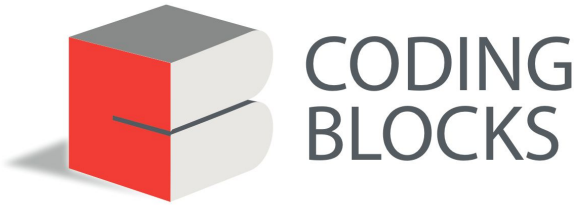
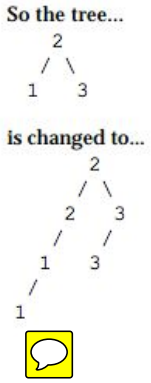


Crux Assignment (Trees)

1. Implement Binary Search tree class. It should have the following functions.
    a. insert
    b. remove
    c. search
    d. size
    e. isEmpty
2. For each node in a binary search tree, create a new duplicate node, and insert the duplice as the left child of the original node.



3. Given a binary tree, check whether there are two nodes in it whose sum equals a given value.
4. Find LCA(Lowest Common Ancestor) of two elements in a Binary Tree. Read about LCA if you are having doubts about the definition.
5. Find LCA of two elements in a BST.
6. Given a Binary tree find the largest BST subtree.
7. Replace each node with the sum of all greater nodes in a given BST?

8. Given a tree and a node of tree, print all nodes which are at distance k from the given node.
9. Given a binary tree and a number k, print out all root to leaf paths where the sum of all nodes value is same as the given number.
10. Given a binary search tree and a int s, find pair of nodes in the BST which sum to s.
    a. Find a solution for which time complexity is O(n)
    b. Find a solution which uses maximum O(logn) extra space.