

Project 3: Binary Search Tree

Project Deadline: 11:55 PM, Oct. 23, 2017

No Late Submission

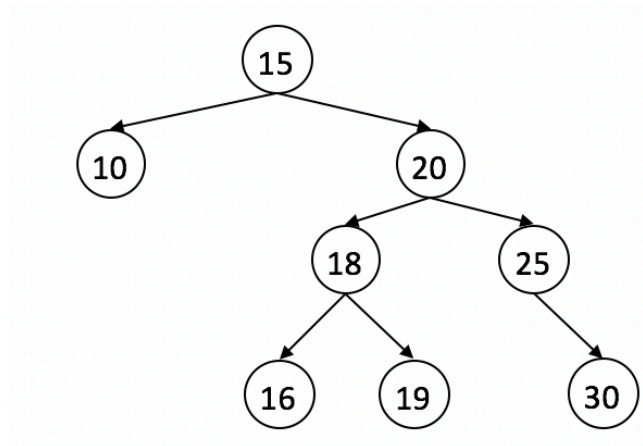
1. Check if given binary search tree is Height Balanced or not

In a height balanced tree, the absolute difference between height of left subtree and right subtree for every node is 0 or 1.

For example,

Input: arr_key = [15, 10, 20, 18, 25, 16, 19, 30]

The binary search tree should be:



Output: The binary search tree is not height balanced.

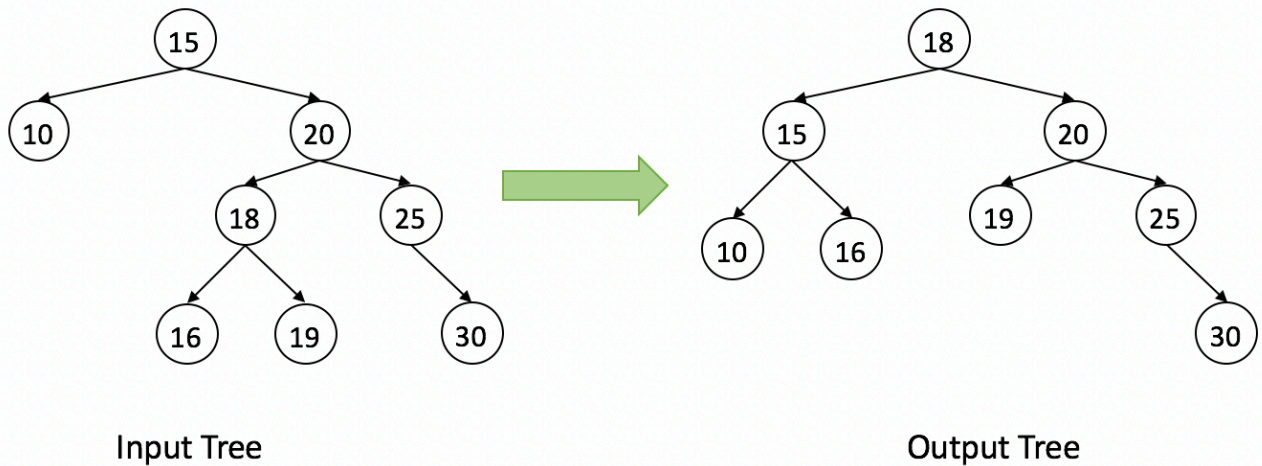
2. Convert an unbalanced binary search tree into a balanced tree

Given a binary search tree, if it is an unbalanced tree, convert it into a balanced one. After conversion, output the post-order traversal of the tree.

For example,

Input: arr_key = [15, 10, 20, 18, 25, 16, 19, 30]

The conversion should look like:



Output: Post-order traversal of the tree is 10 16 15 19 30 25 20 18.

Please note that it is just one possible solution. Your output result could be different as long as it is a balanced BST.

Note: You may discuss the general concepts in this project with other students, but you must finish your program on your own. NO SHARING OF CODE OR REPORT IS ALLOWED. Violation of this policy can result in grade penalty.

What to submit

Please submit a .zip file containing (1) a working program written in C++, (2) a report with the pseudo code of your program. Before submit your project, please make sure to test your program (at least) on the given example.