

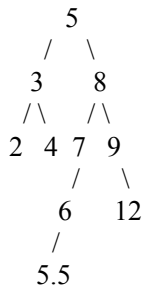
EL9343 Homework 7

(Due April 1st, 2022)

No late submission accepted

All problem/exercise numbers are for the third edition of CLRS text book

1. True or False questions
 - a. BST Operations (Search, Predecessor, Successor, Minimum, Insert, Delete) are $O(h)$, where h is tree height.
 - b. Height of a binary search tree with n elements is $\theta(\log(n))$.
 - c. A new node is always inserted as a leaf node in BST.
 - d. Inorder tree walk of a binary search tree outputs an unsorted sequence.
 - e. When deleting node z with 2 children, we cannot replace z by its predecessor.
 - f. In an AVL tree, the right subtree and the left subtree of any node have the same height.
2. Write pseudocode for RIGHT-ROTATE. (Exercise 13.2-1 in CLRS Textbook, page 313)
3. Build an AVL Tree out of the Binary Search Tree according to the rotation operations in the lecture with one rotation operation. Also answer the type of this rotation (Single or Double).



4. Build an AVL tree: keys are inserted in the order of:

40->30->20->29->24->27,

Please plot the AVL tree after each key is inserted, and mark the type of rotation taken, if any, at each step.