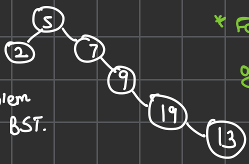
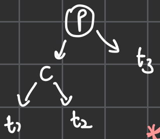
AVL Trees.



Problem with BST.

* For every node in the tree, the difference in height of left and right subtree of that node, ≤ 1 ⇒ Balanced tree., solution to this is self-balancing binary tree

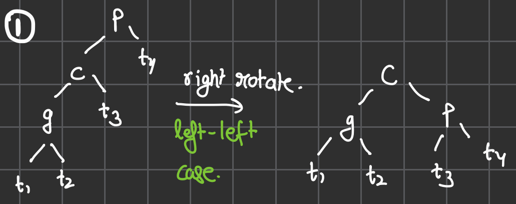


* Insert normally node ⓝ

* Start from node ⓝ & find the node that makes the tree unbalanced.

* Using 1 of the 4 method just rotate the tree.

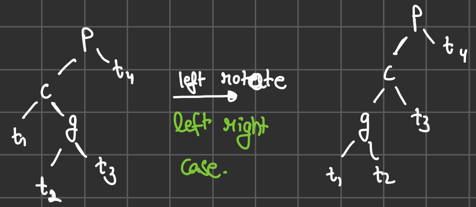
①



right rotate.

left-left case.

②

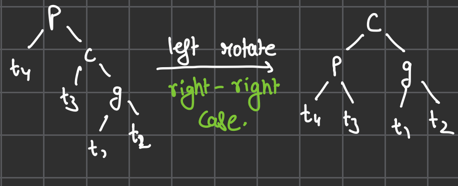


left rotate

left right case.

Same as case 1.

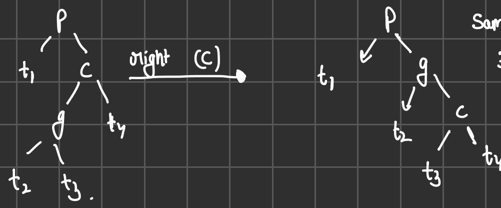
③



left rotate

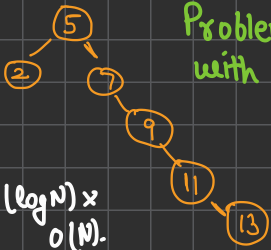
right-right case.

④



right (C)

Same as 3.



Problem with BST.

O(log N) ✗
O(N).

AVL Tree.

$O(\log N) + O(1)$

↳ for rotation.