

HOW TO DRAW AN AVL TREE ?

1. We start creating the AVL tree exactly same as BST.
2. That is , the first value is considered to be the ROOT node and every other value if GREATER than root , then goes towards the RIGHT and if smaller than the root then goes towards the LEFT of root.
3. Also after adding any node we check the BALANCE FACTOR of each node .
4. If the BALANCE FACTOR is in the ranhe -1,0 and +1 , then we continue adding new node.
5. But if the BALANCE FACTOR is outside the above range then we need to perform **ROTATION** before adding new node.

HOW TO PERFORM ROTATION ?

Rotation means bending the TREE in opposite direction of its HEAVINESS and rotation itself is of 2 types:

1. Single Rotation

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- a. LL rotation
- b. RR rotation

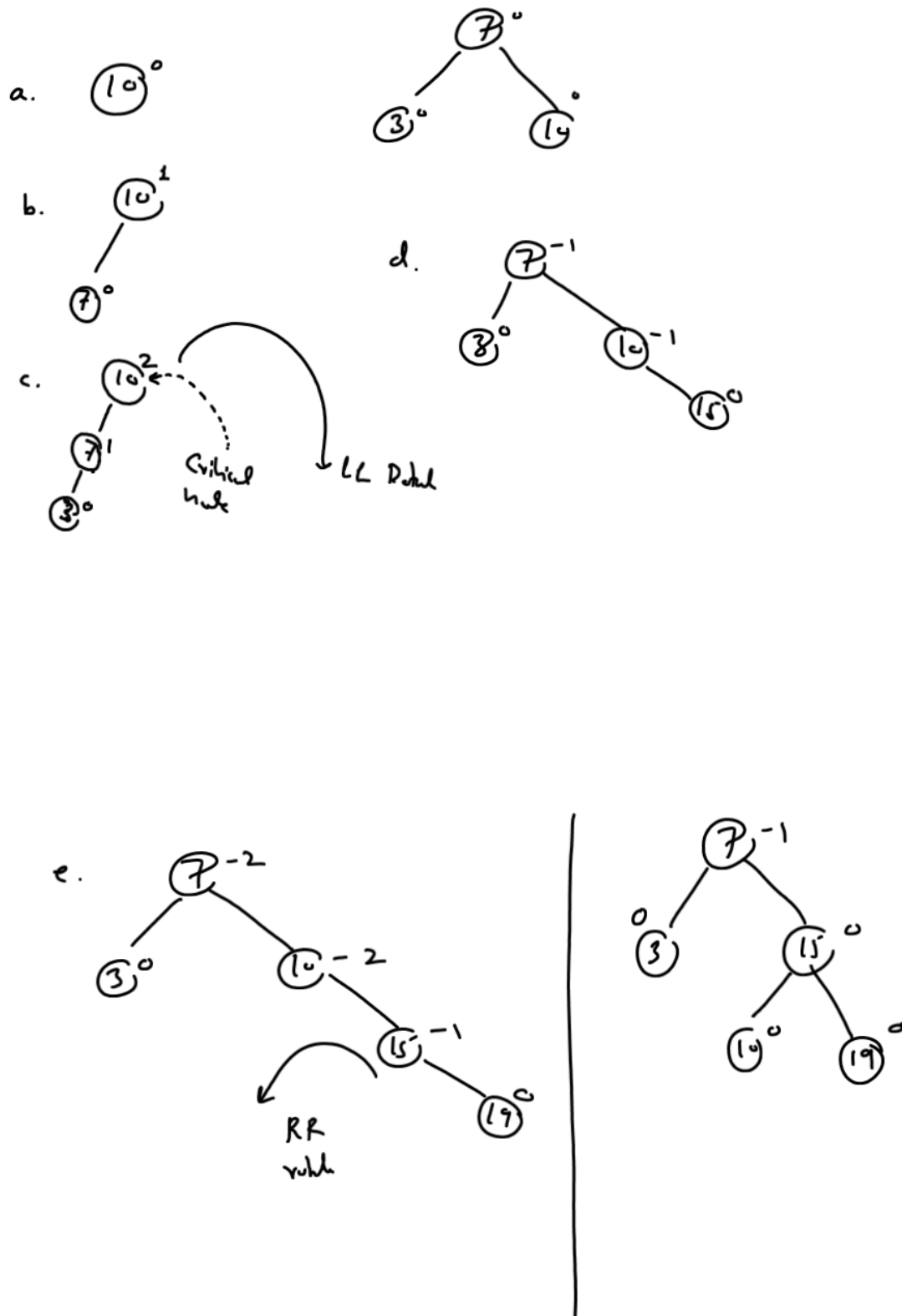
2. Double Rotation

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- a. LR rotation
- b. RL rotation

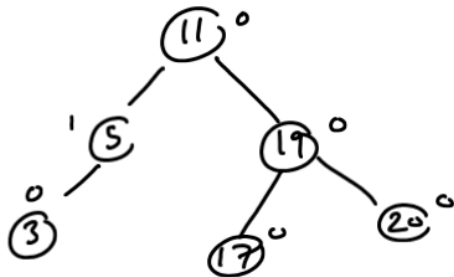
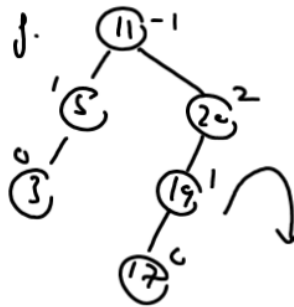
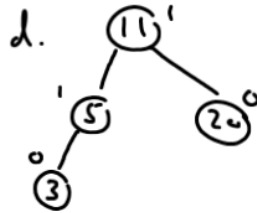
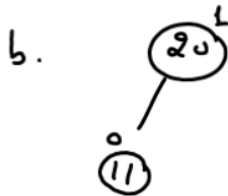
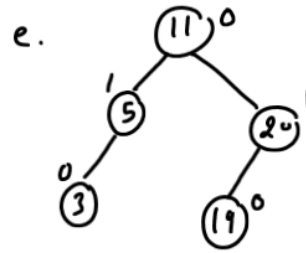
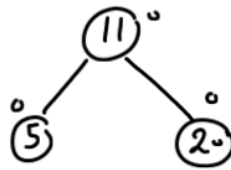
Draw an AVL tree for the following SET of values:

10,7,3,15,19



Draw an AVL tree for the following SET of values:

20, 11, 5, 3, 19, 17



DOUBLE ROTATION

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Double Rotation means we have to rotate the TREE twice inorder to set the BALANCE FACTOR of critical nodes in the VALID RANGE.

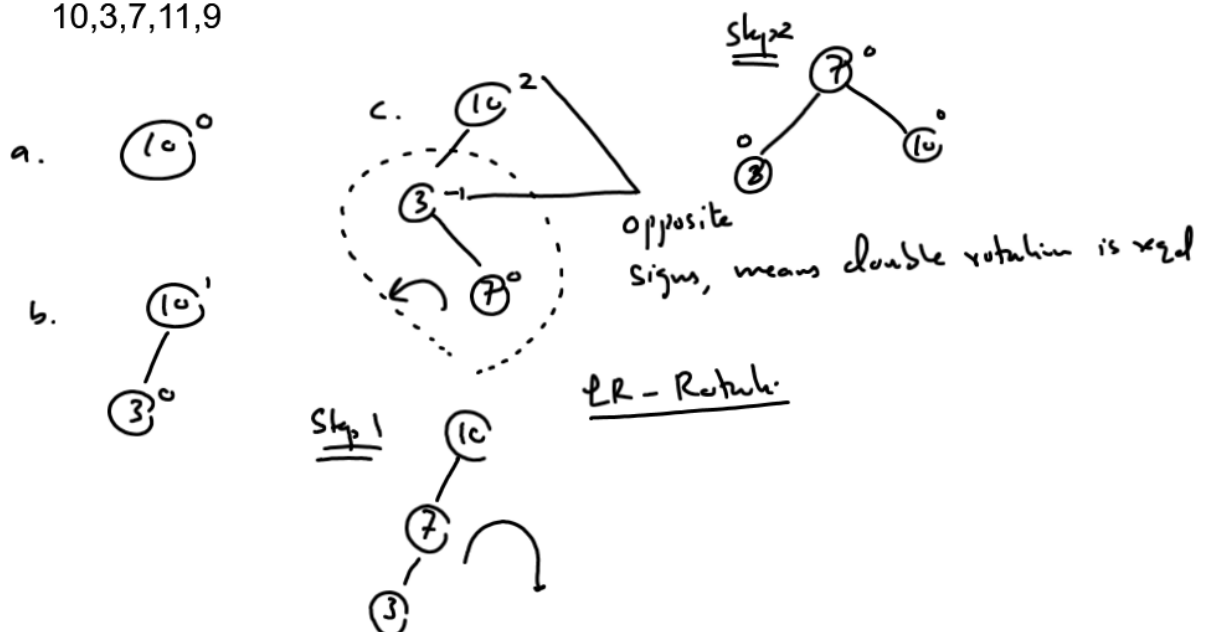
HOW WE WILL COME TO KNOW THAT DOUBLE ROTATION IS REQD ?

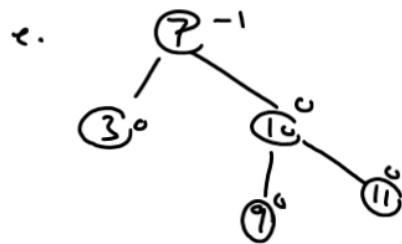
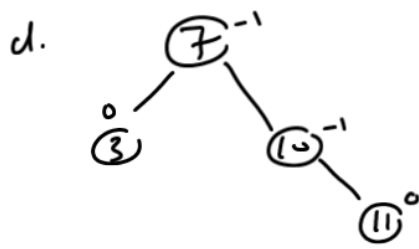
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If the SIGN of BALANCE FACTOR of CRITICAL NODE and the SIGN of BALANCE FACTOR of child node of CRITICAL NODE are same the rotation reqd will be SINGLE otherwise rotation reqd will be DOUBLE

Draw an AVL tree for the following SET of values:

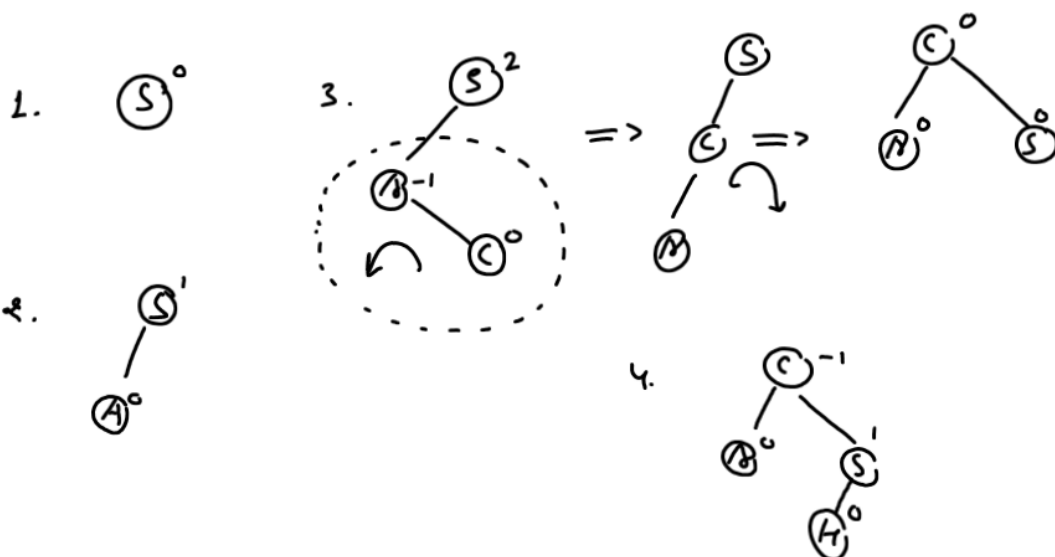
10,3,7,11,9

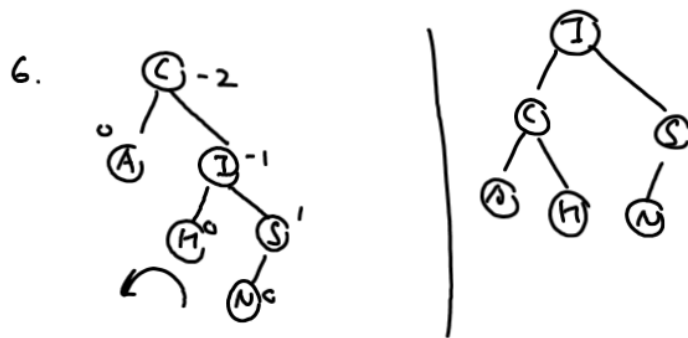
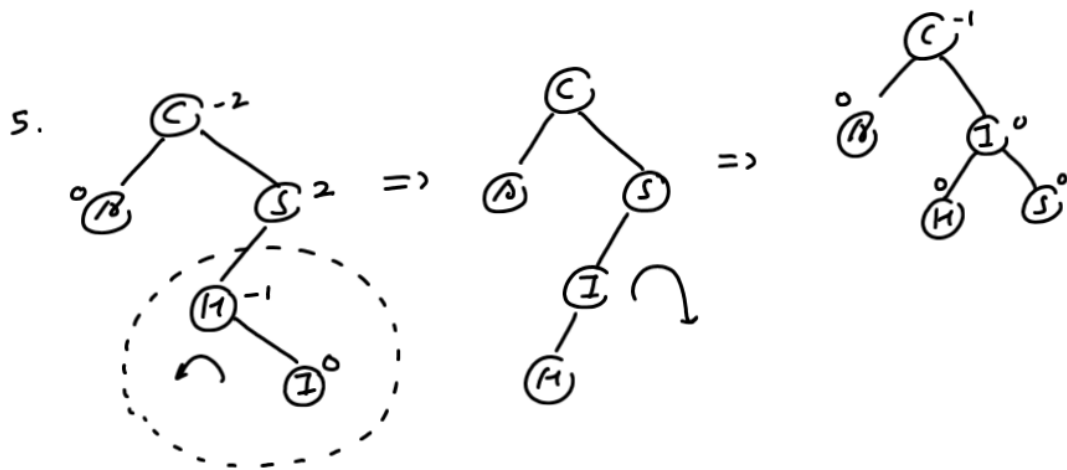




Draw an AVL tree for the following SET of values:

'S','A','C','H','I','N'





Draw an AVL tree for the following SET of values:

10, 8, 15, 6, 9, 7

