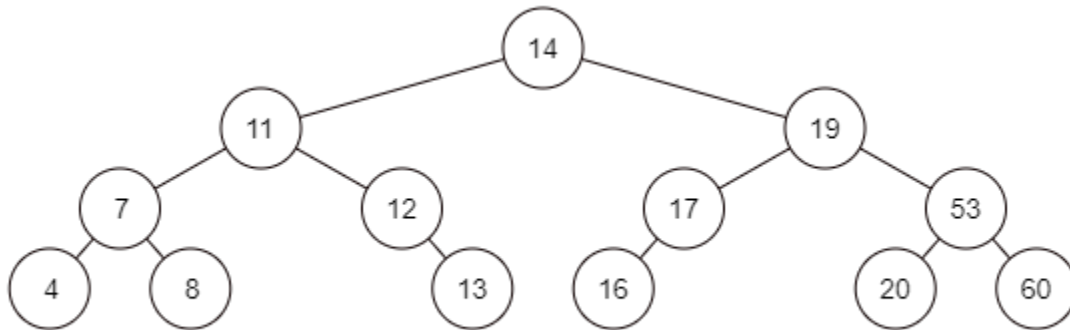


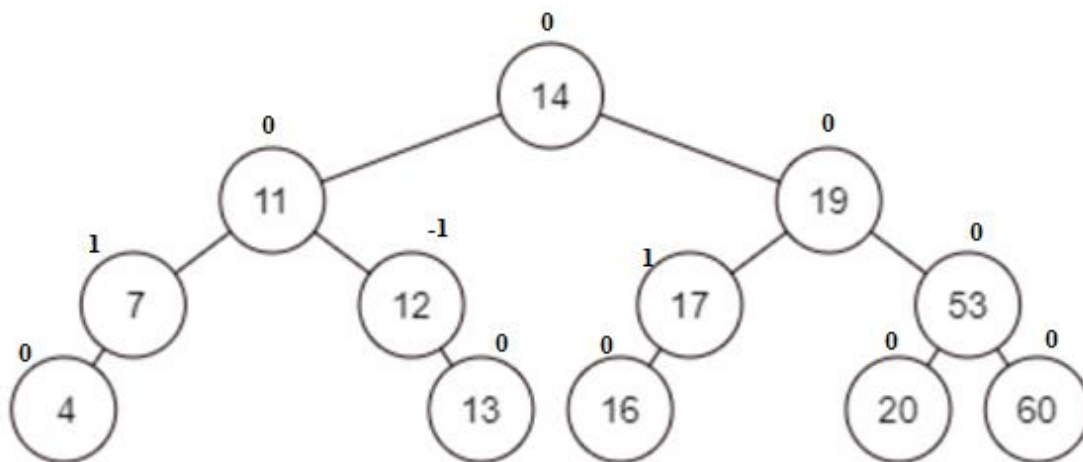
## Lab 09: Learn to delete nodes from AVL with the help of rotations

Delete the node 8, 7, 11, 14, 17 from given AVL tree and perform necessary rotation(s) to balance the tree after deletion of each node. Show final tree after each deletion.

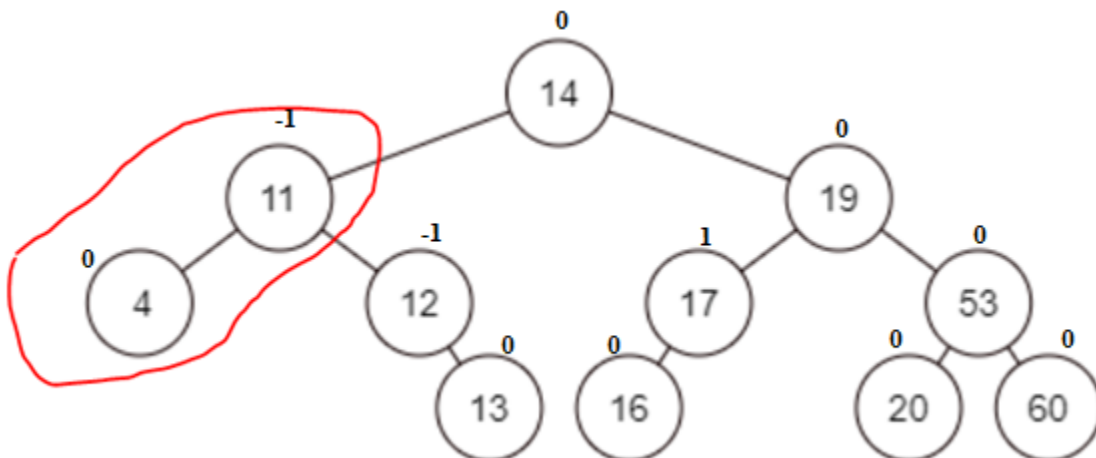


### Solution:

First we delete node 8 from the AVL Tree

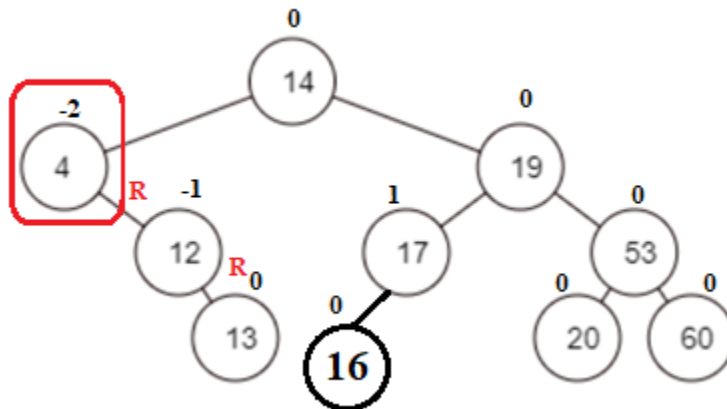


As we can see there is No effect on tree after Node 8 deletion, the tree is balanced. Now we have to delete Node 7

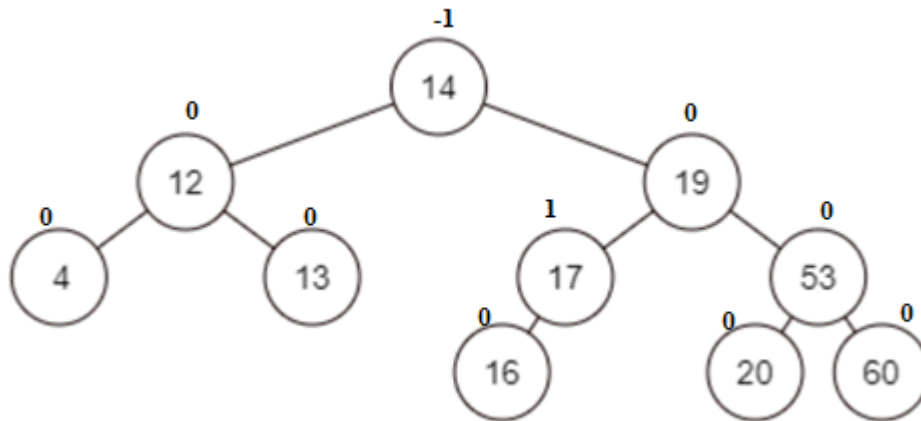


After deleting node 7 the node 4 becomes left child of node 11 and tree is still balanced after deletion.

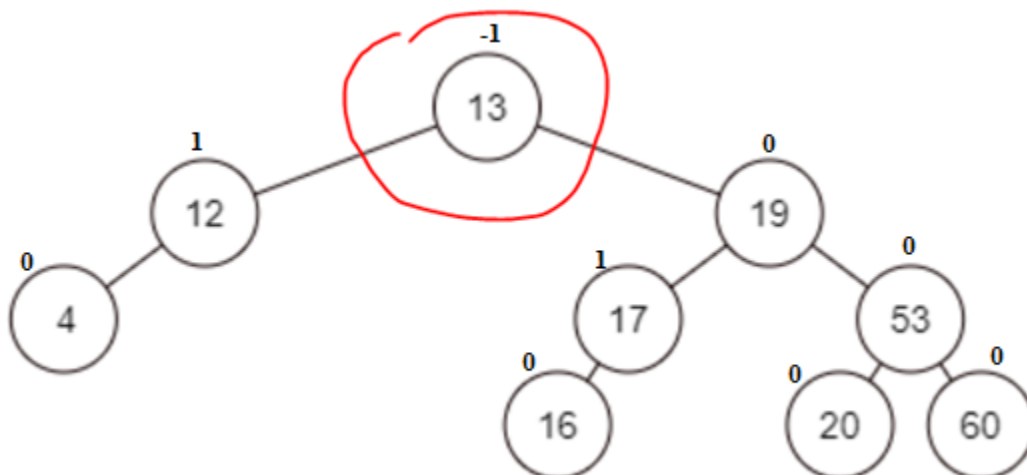
Now we have to delete node 11. The following will be the resultant tree after node 11 Deletion, Node 4 has replaced the node 11. But we can see that now our tree is Unbalanced.



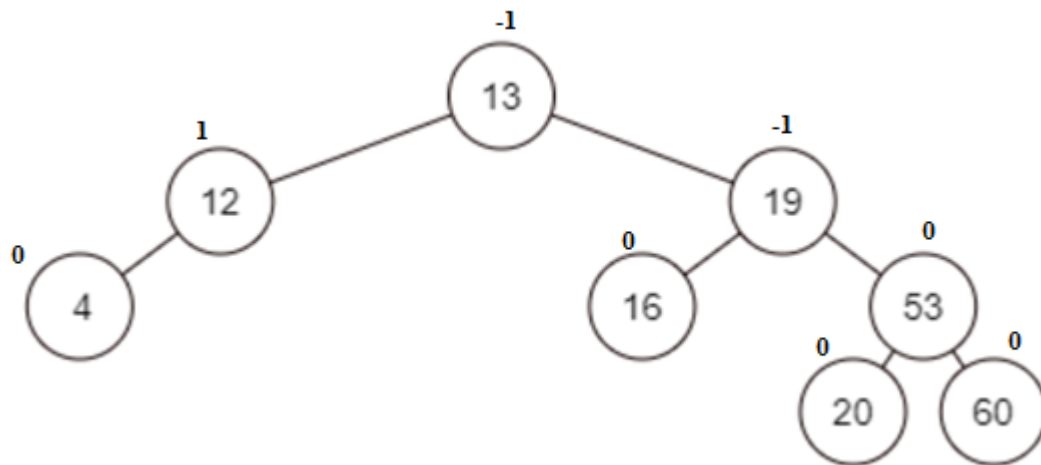
Now we apply Left or anti-clockwise rotation to balance the tree.



As we can see our tree is balance, so now we delete node 14. After deleting Node 14 it will be replaced by node 13. Node 13 will now be the parent node. The tree is balanced after deletion of Node 14



Now we have to make the final deletion I.e. Node 17. After deletion of Node 17 it will be replaced by Node 16. This is our final tree



By: Javaid Iqbal  
| GitHub: [JavaidIqbal786](#)  
| LinkedIn: [JavaidIqbalAwan](#)