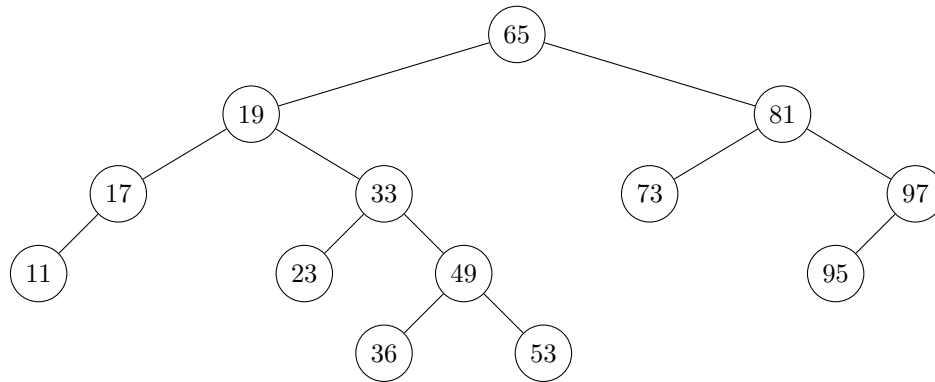


## Tutorial 5: June 13

1. Consider the AVL Tree shown below and perform the following operations: insert 61, delete 73, delete 49.



2. Insert the numbers 12, 11, 13, 10, 20 into an empty skip-list using the coin flips HHTHTHTTHHHT. Then delete the keys 13 and 20.
3. We consider a modified version of AVL trees where the height difference between the right and left subtrees of any node is in the range  $[-2, 2]$  instead of  $[-1, 1]$ . These are called AVL-2 trees. Prove that the height of an AVL-2 tree on  $n$  nodes is in  $O(\log n)$ .