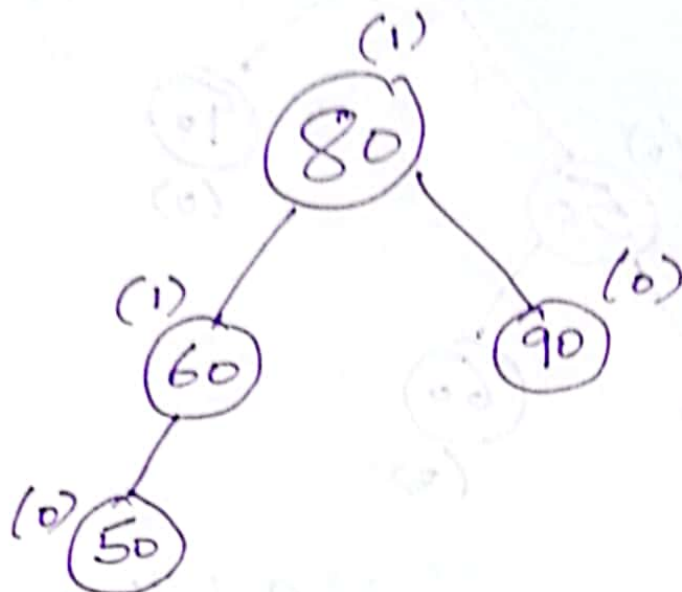
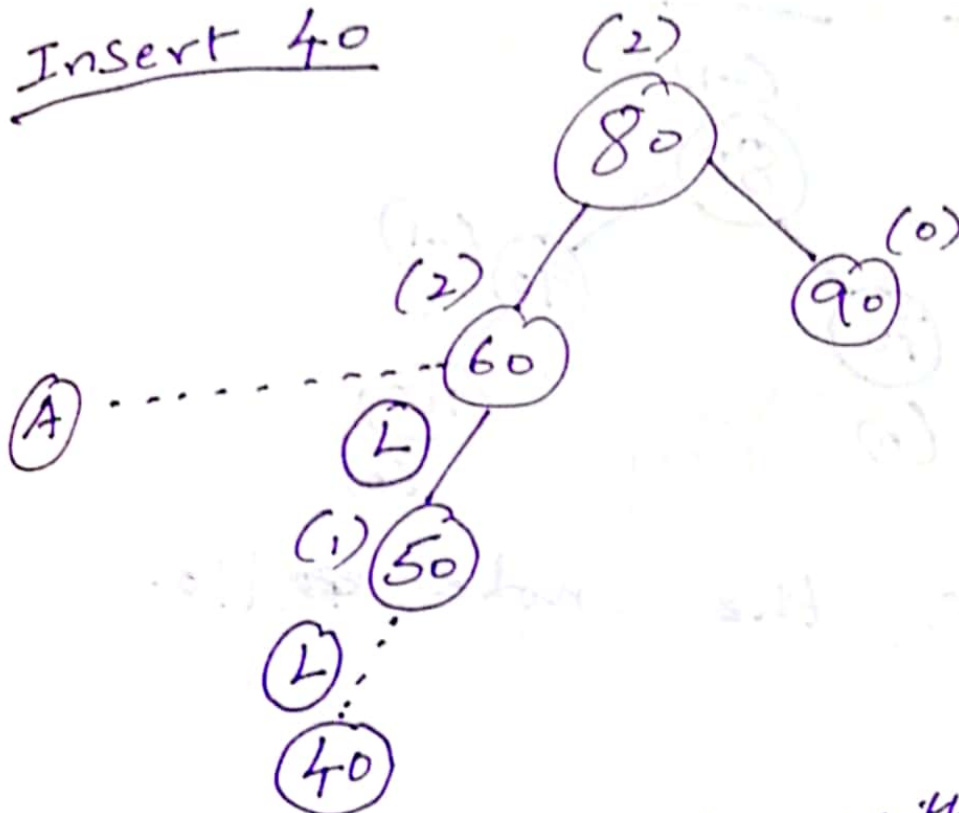


AVL Insertion

Case (i) LL

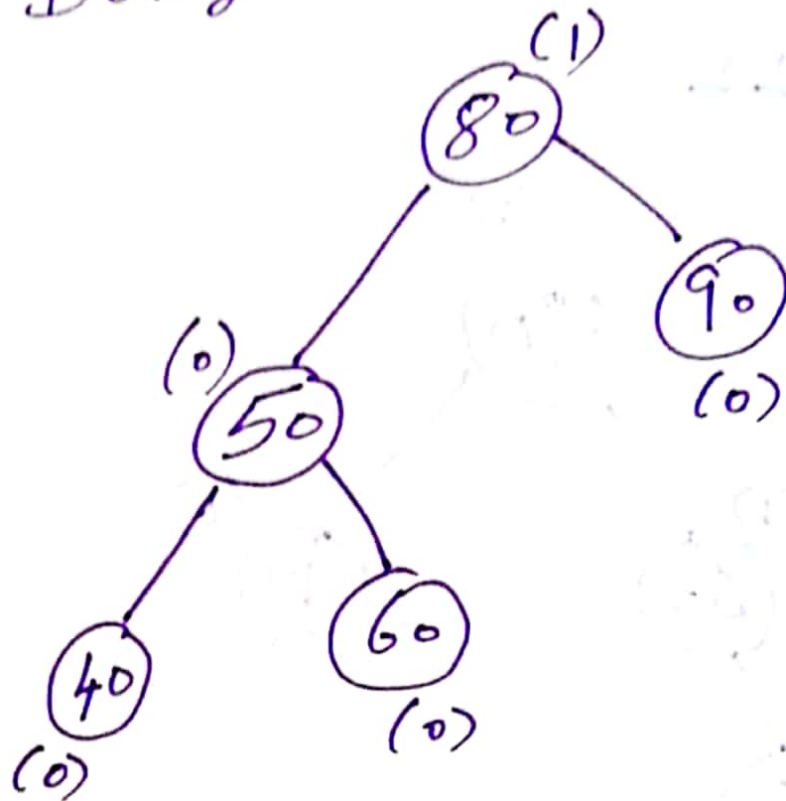


Insert 40



40's closest ancestor with bf +2 is called A. 40 is inserted to the left of Left of A.
Hence LL Imbalance.

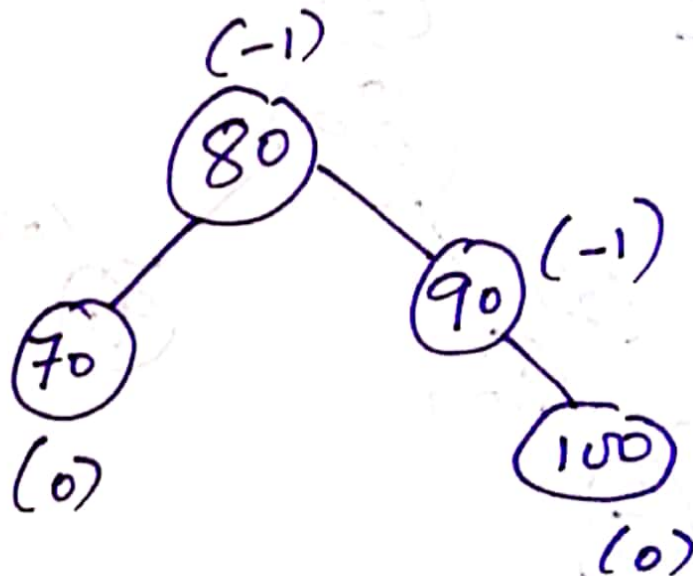
Doing LL Rotation



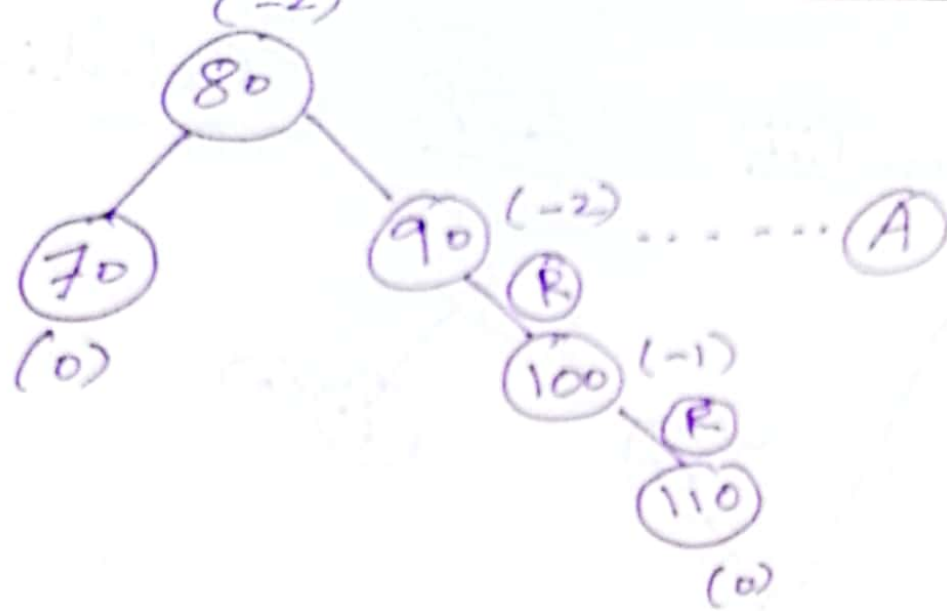
Case (ii)

RR

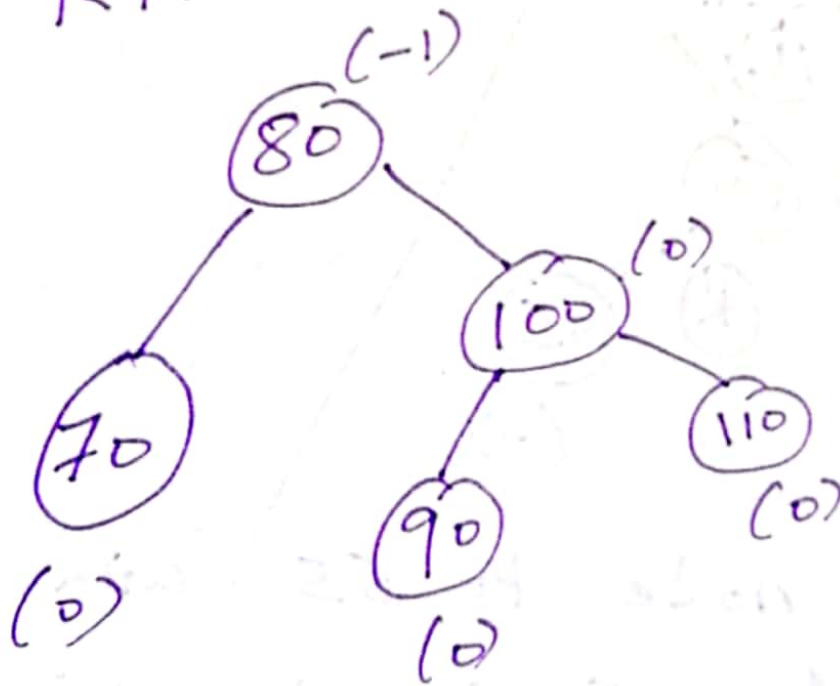
Rotation



Insert the node ~~100~~ 110.



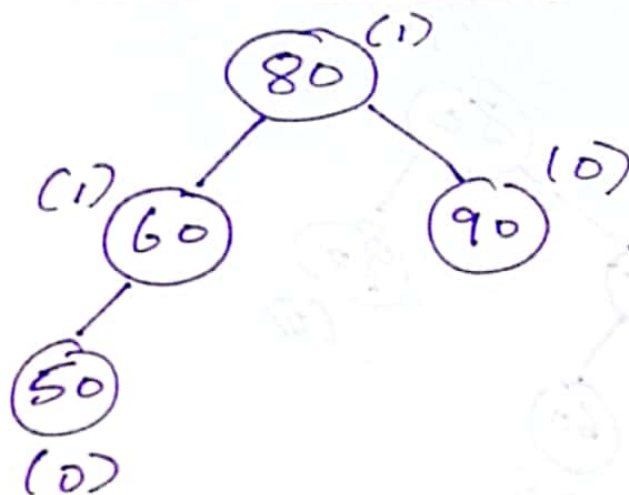
110's closest ancestor node is called A. 110 is inserted to right (R) of right (R) of A. Hence RR Imbalance. Doing RR Rotation.



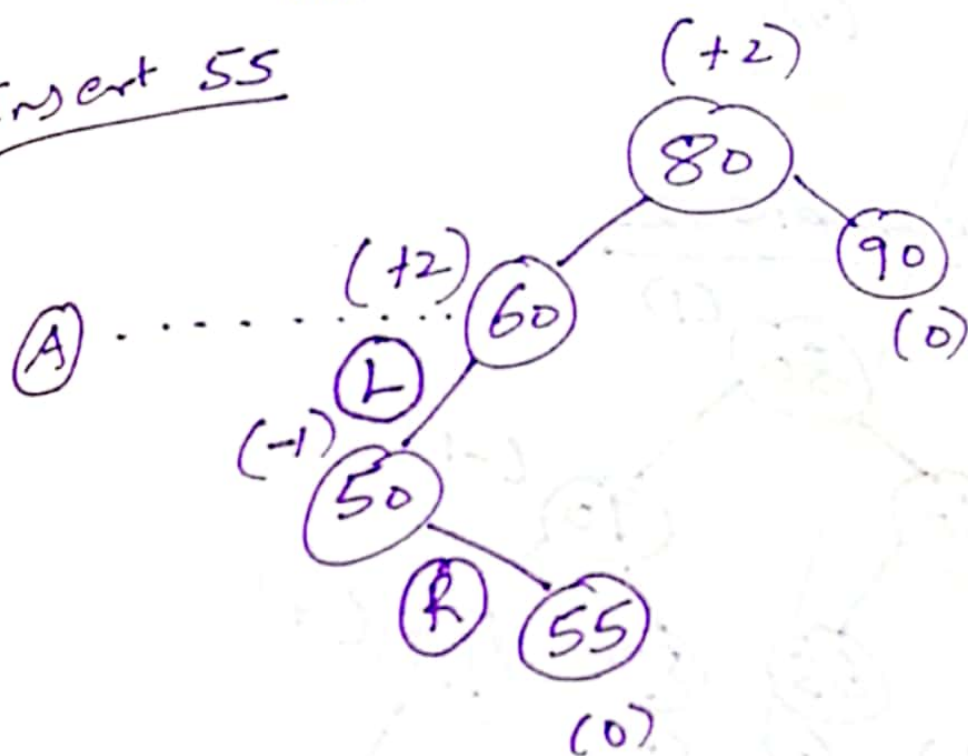
Case (iii)

L R

Rotation



Insert 55

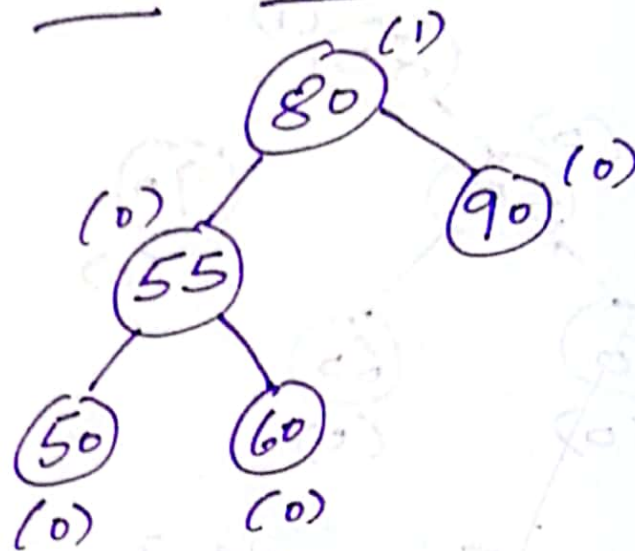


Closest node to 55 with bf +2
is called A. 55 is inserted to
~~left of A~~ Right subtree (R) of left
child(L) of A.
∴ LR Imbalance.

Doing

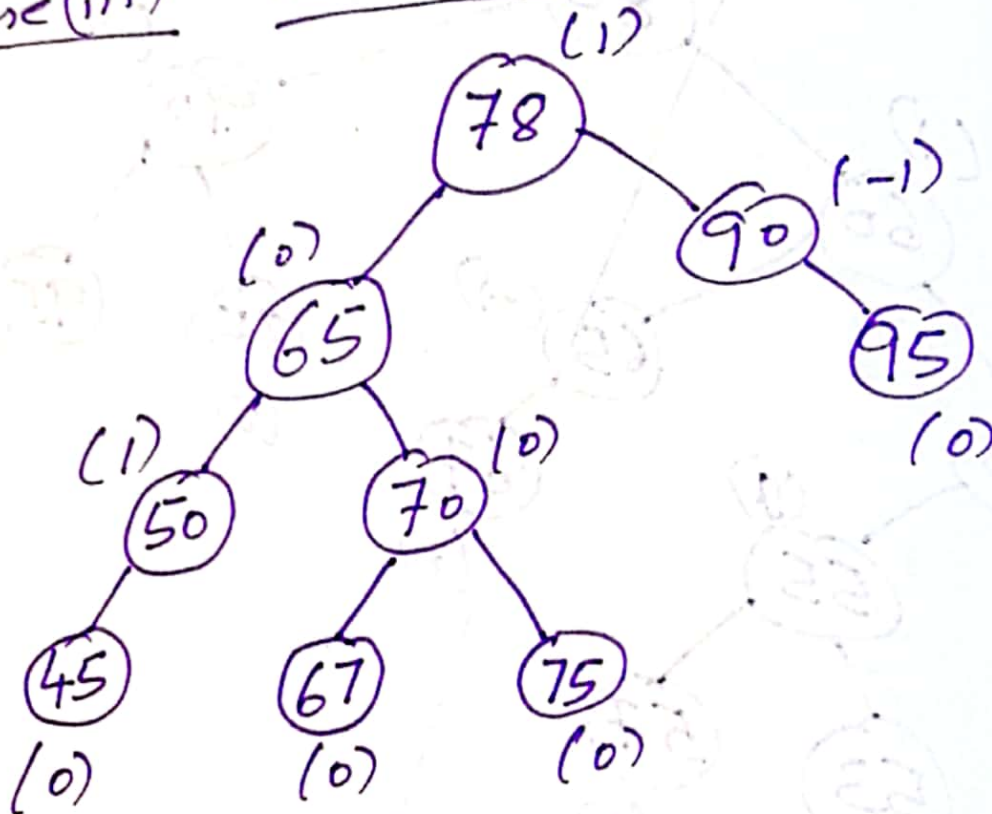
LR

Rotation

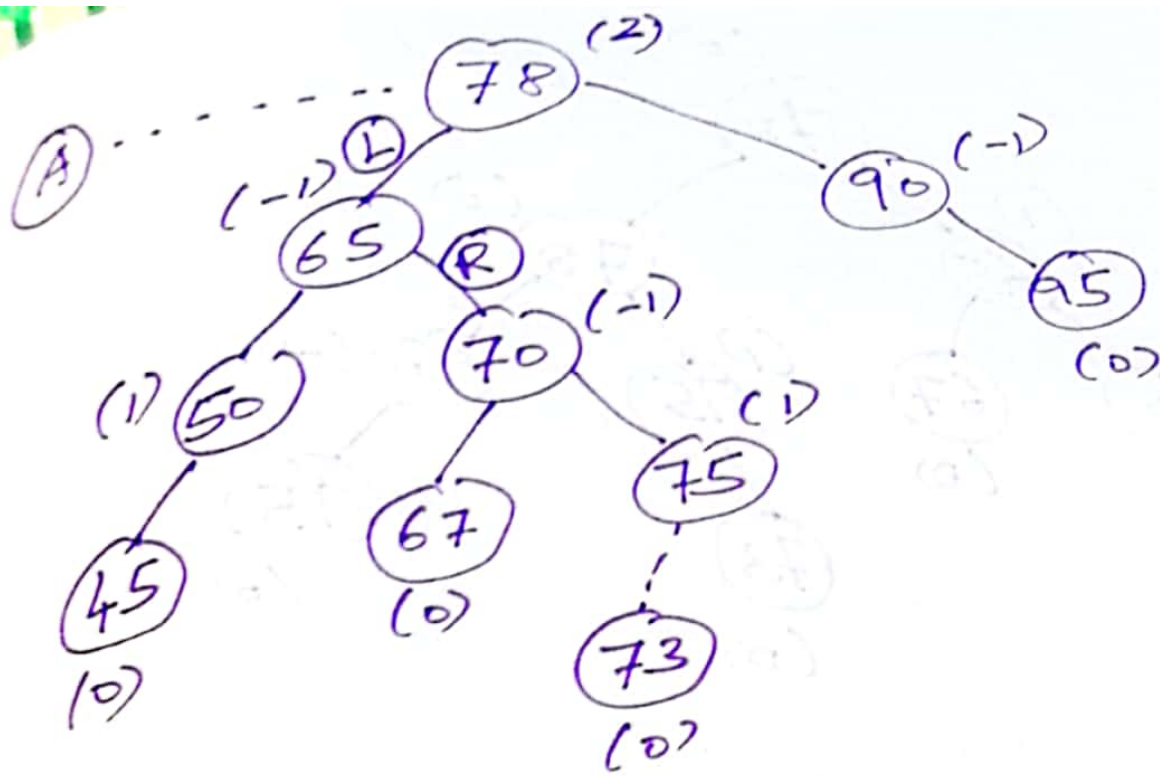


Case (iii)

Example 2



Insert 73



the inserted node 73,
 ancestor node with bf 2 is
 A.

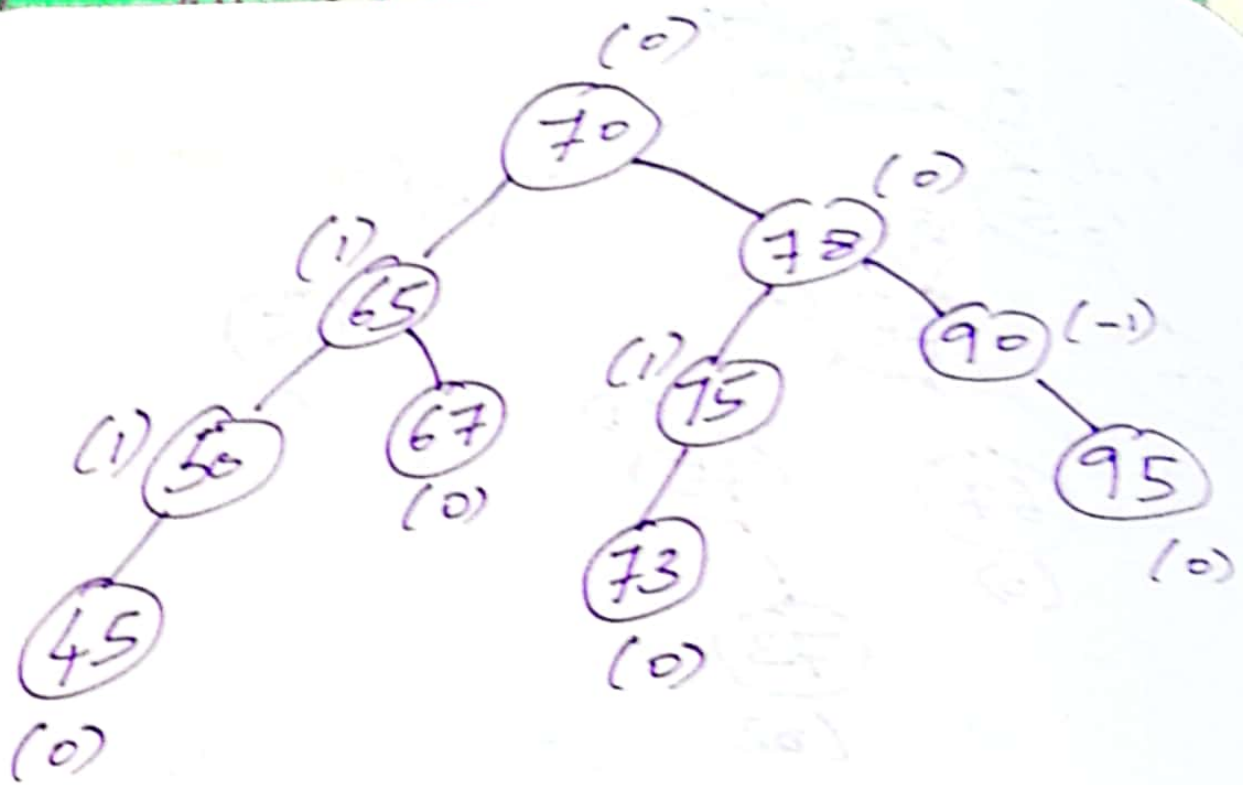
For
 closest
 called

73 is
 of left

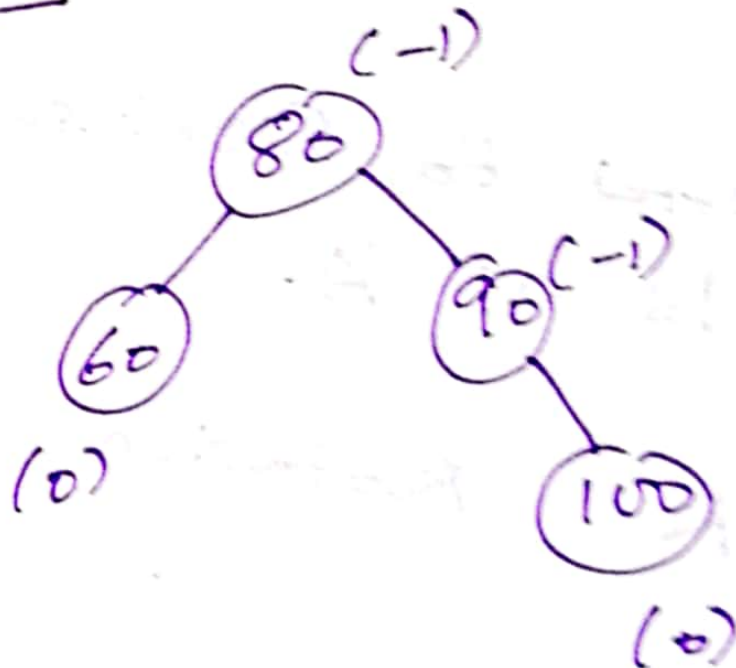
Doing

inserted to Right subtree (R)
 child of A.

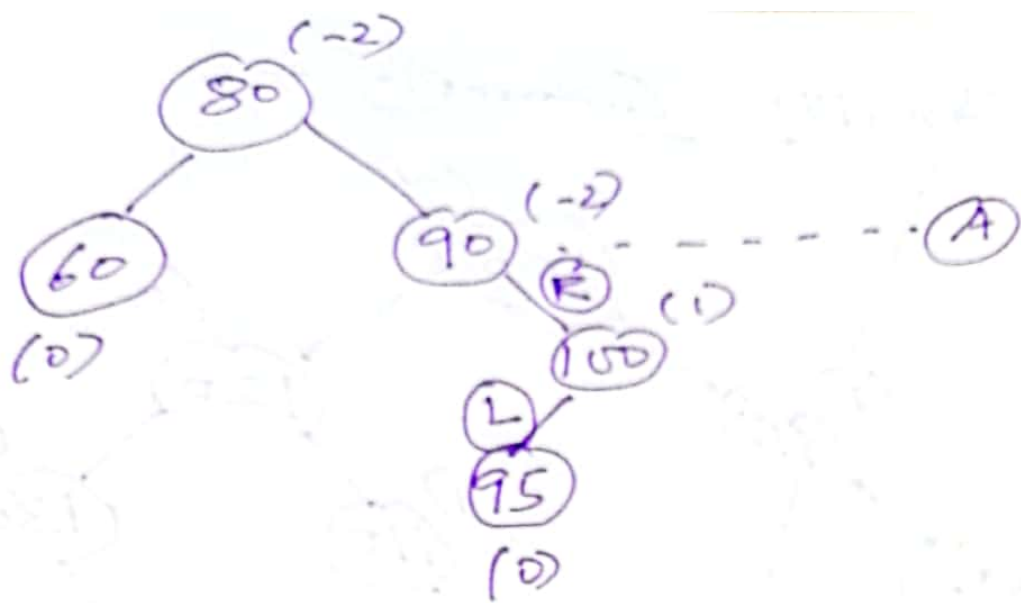
LR
 Rotation,



Case iv RL Rotation



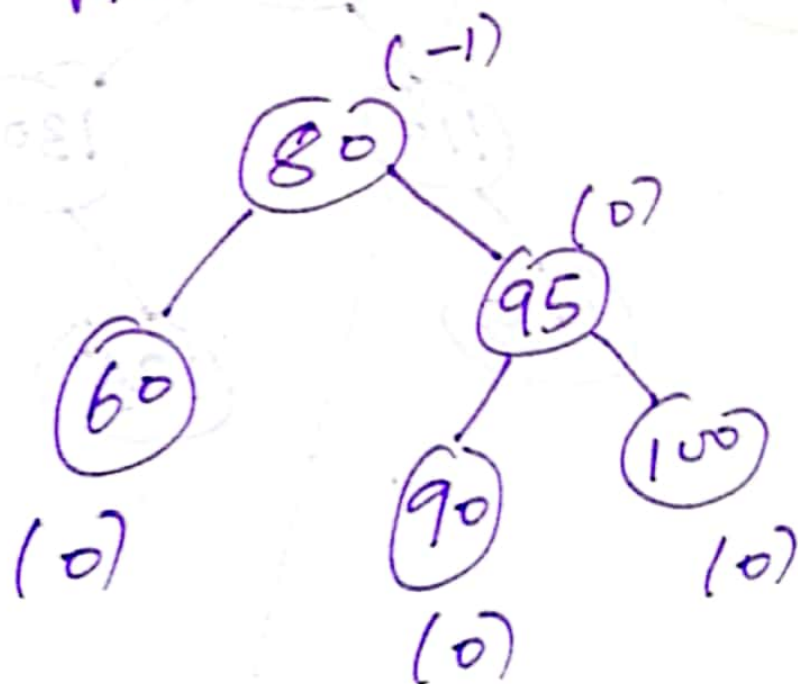
Insert 95



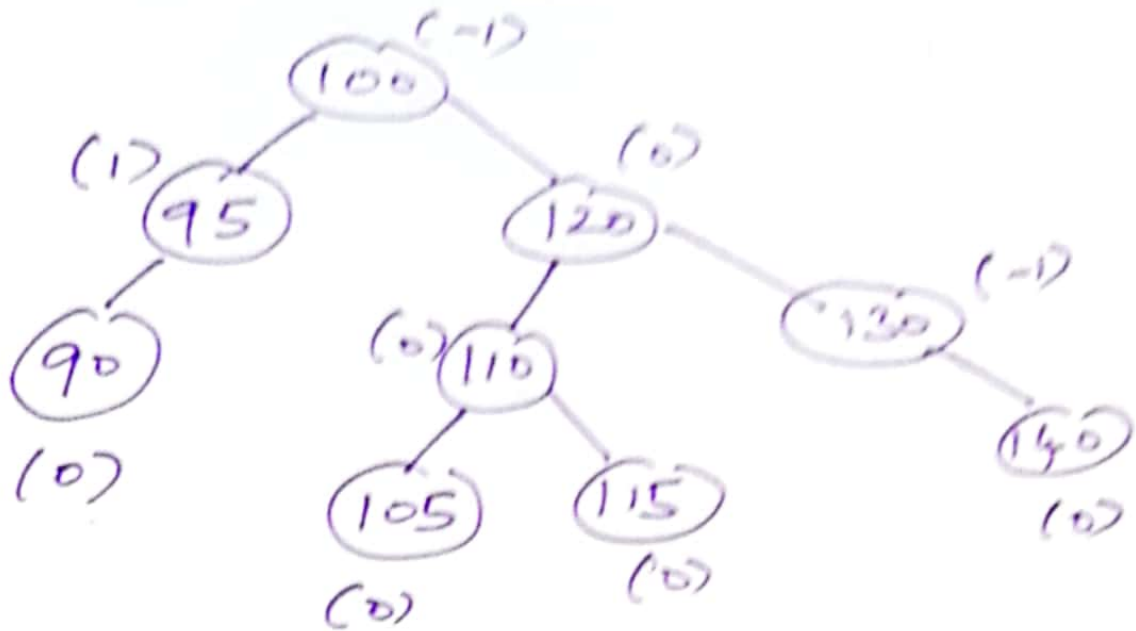
95 is inserted to left subtree (L) of Right child (R) of A.

∴ RL Imbalance

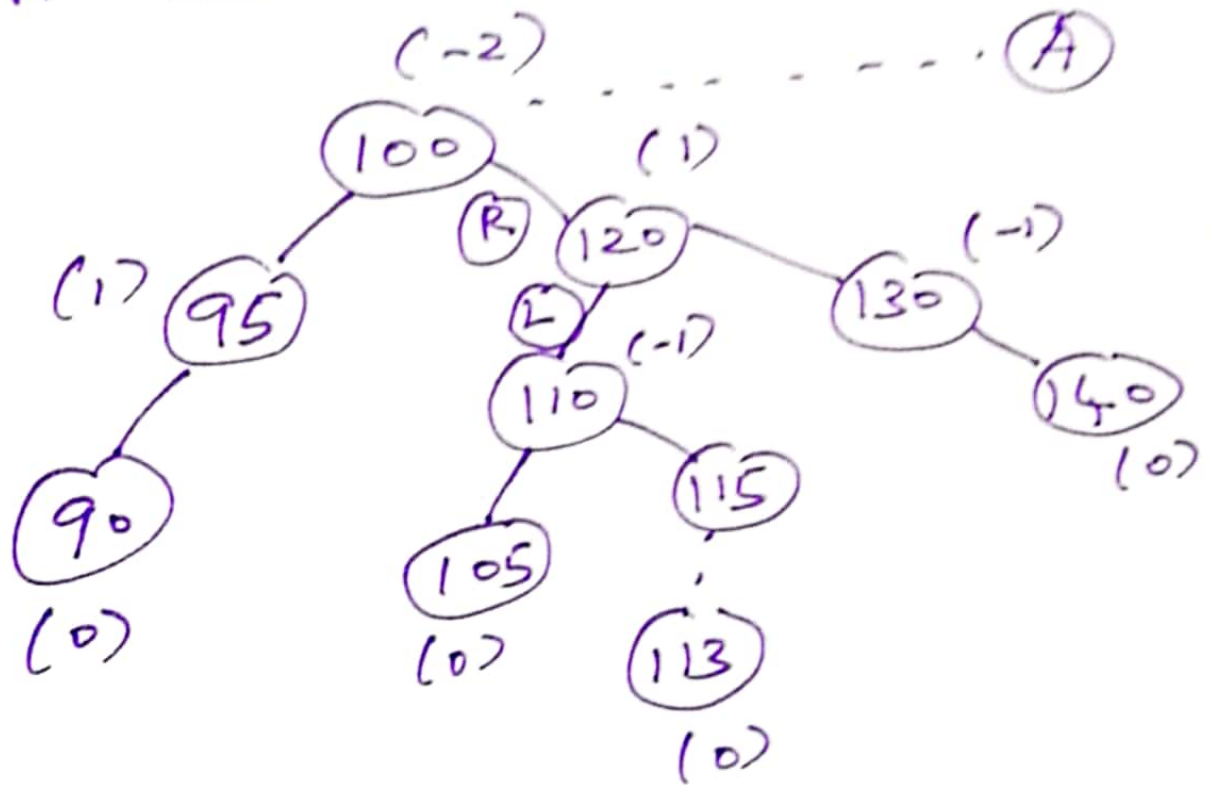
Doing RL Rotation.



Case (iv) Example 2



Insert 113



Closest node to 113 with bf -2 is called (A). 113 is inserted to left subtree L of Right child of 100.