

M. Awaiz

SP22-BCS-041

SEC (A)

AVL TREE

✱

Insertion $\text{insert}(\text{Node}, \text{key})$

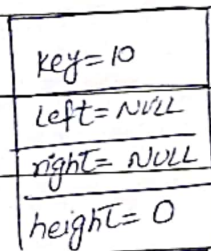
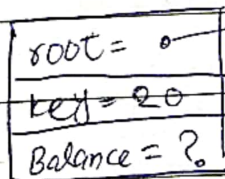
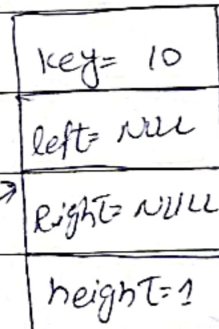
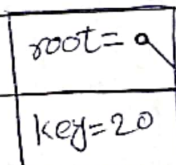
root | NULL



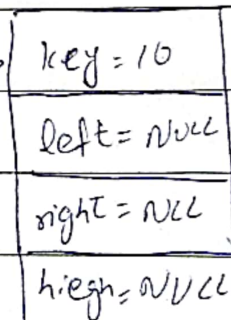
stack

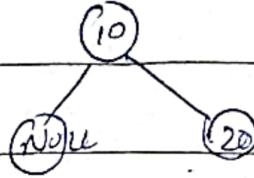
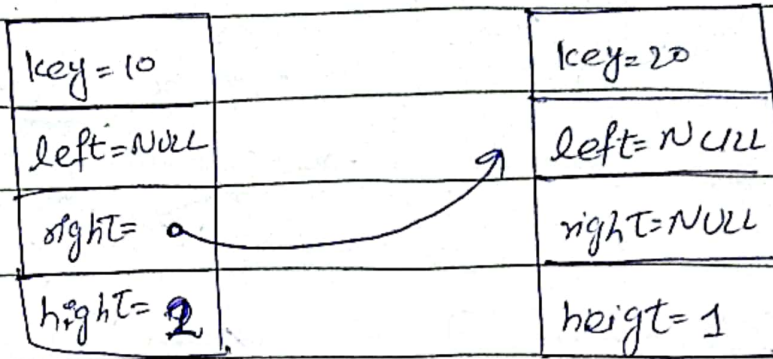
 $\text{insert}(\text{root}, 10)$

root | 0

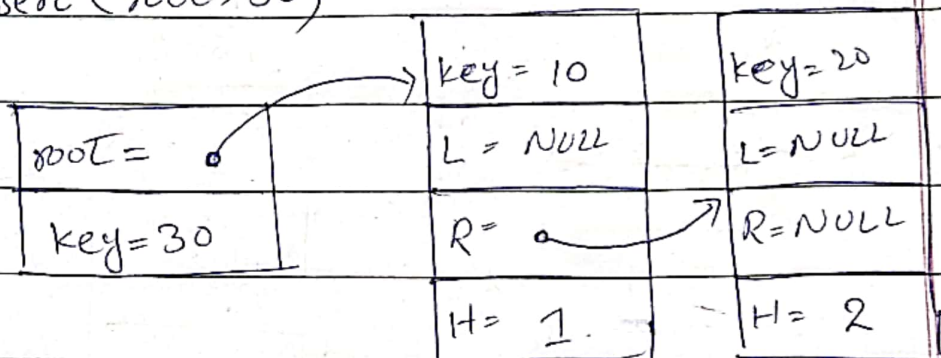
 $\text{insert}(\text{root}, 20)$ 

Check-Balance



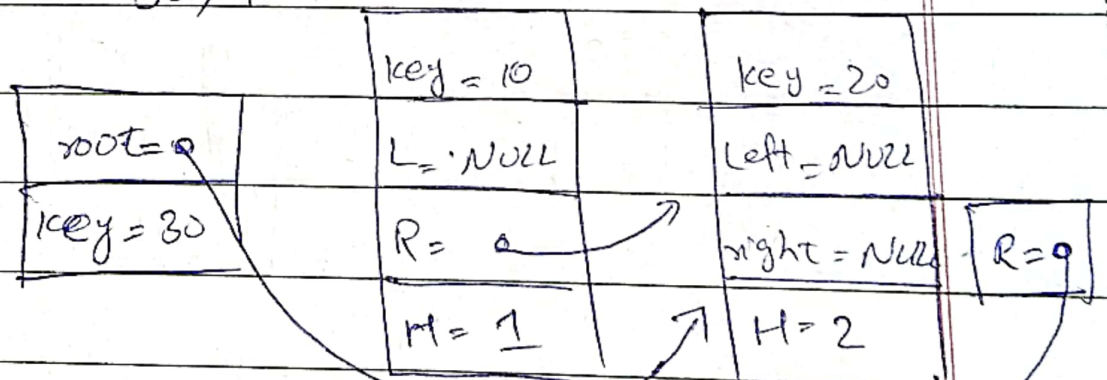


insert (root, 30)

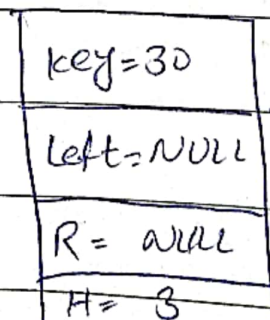


make the root to point right

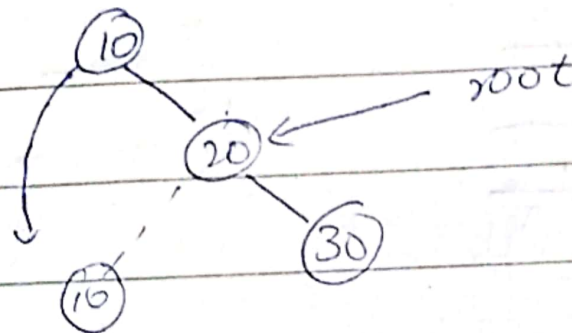
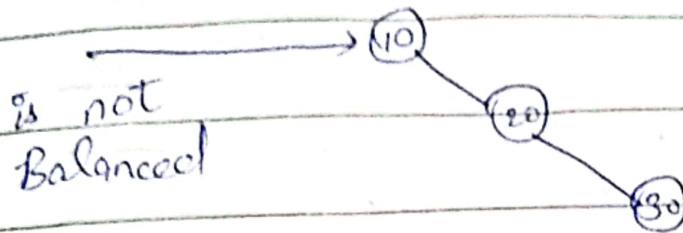
as $30 > 10$



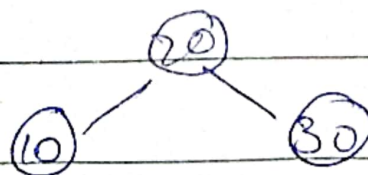
$30 > 20$

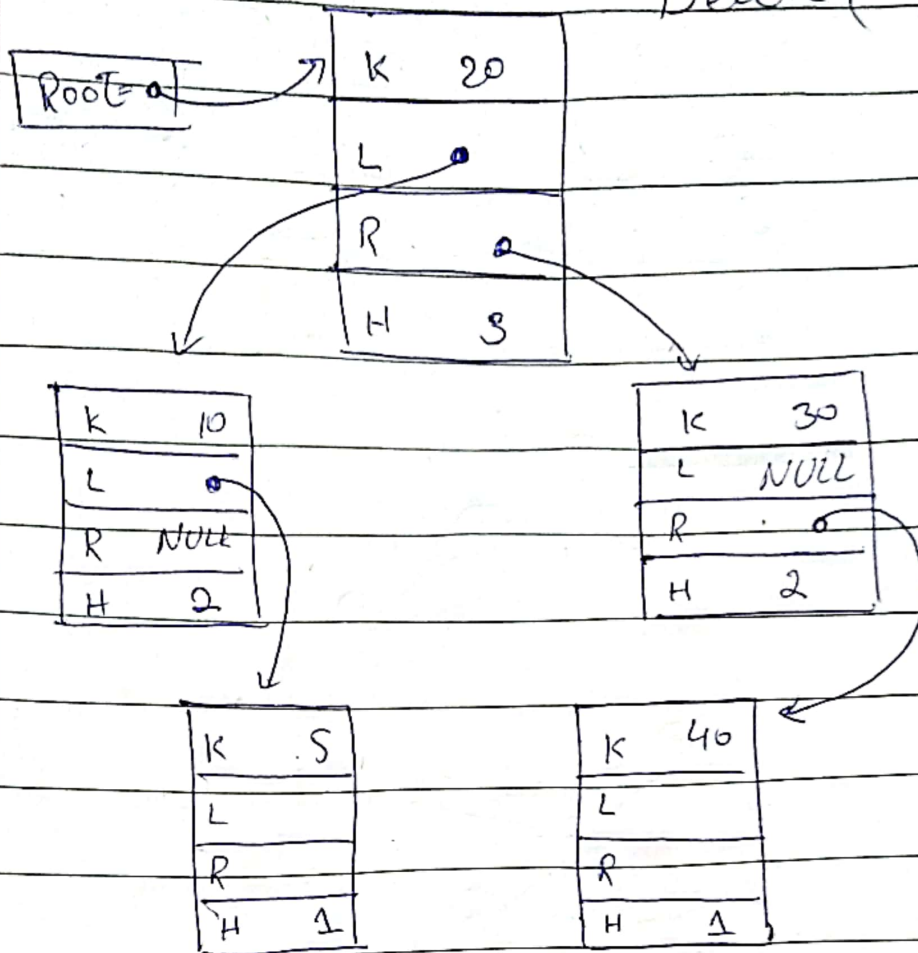


key = 10	key = 20	key = 30
k = NULL	L = NULL	L = NULL
R = a	R = a	R = NULL
H = 1	H = 2	H = 3



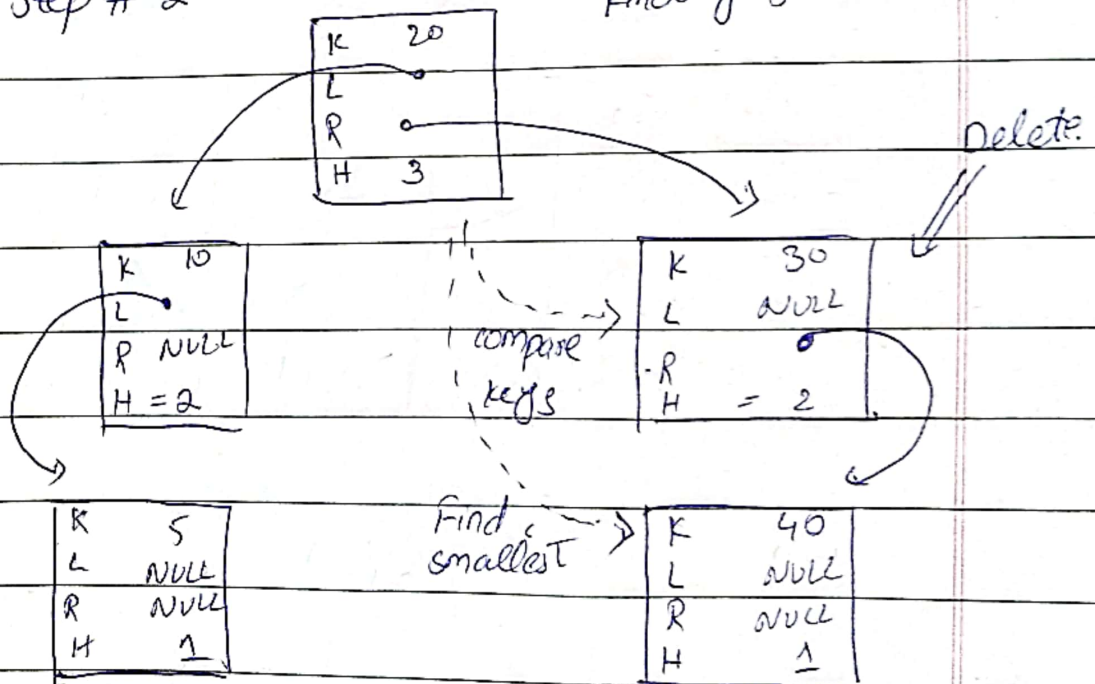
K = 10	K = 20	K = 30
L = NULL	L = a	L = NULL
R = NULL	R = a	R = NULL
H = 2	H = 1	H = 2



Delete**Delete (20)**

Step # 2

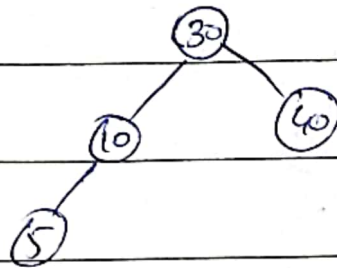
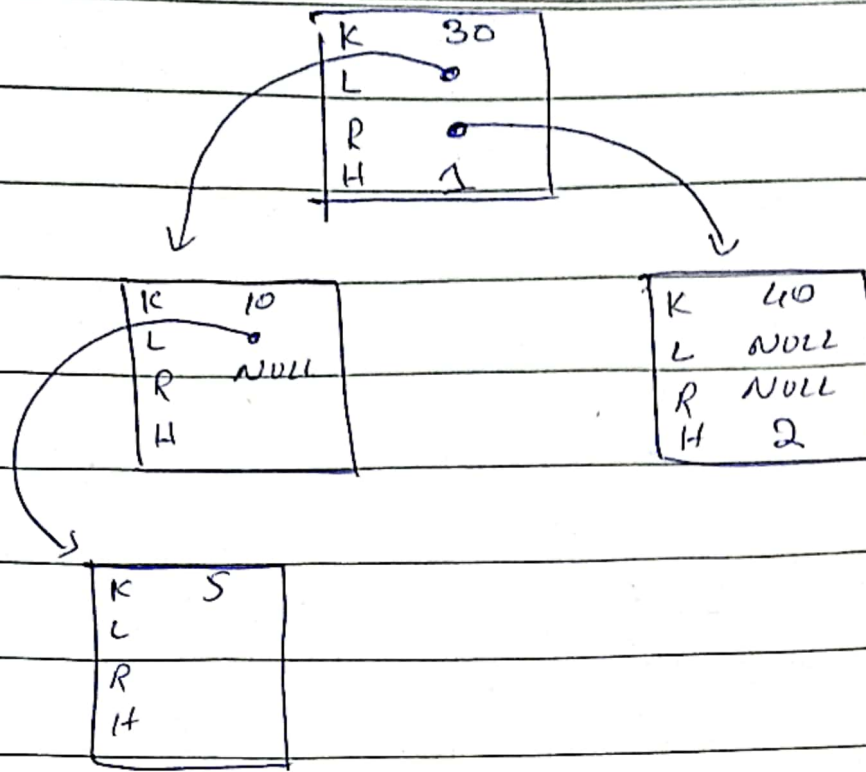
Finding small val



root \rightarrow key $<$ ^{right} root ~~left~~ key

where

^{right}
root \cdot ~~left~~ key



$\text{isBalanced}() \Rightarrow \text{true}.$

no further condition will run.