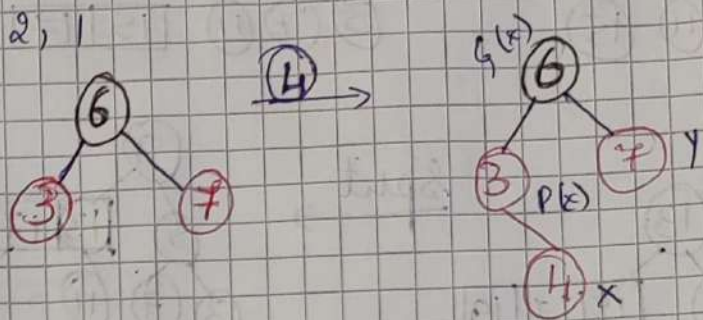


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# Red-Black Trees

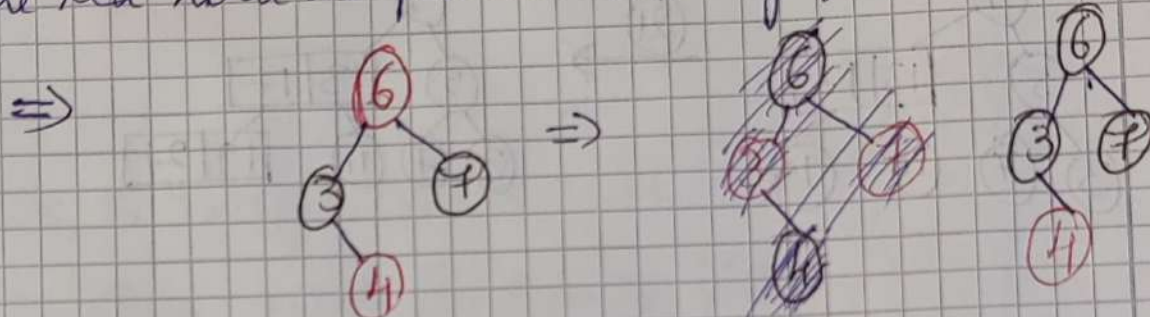
1. 6, 7, 3, 4, 2, 1

Step 1:

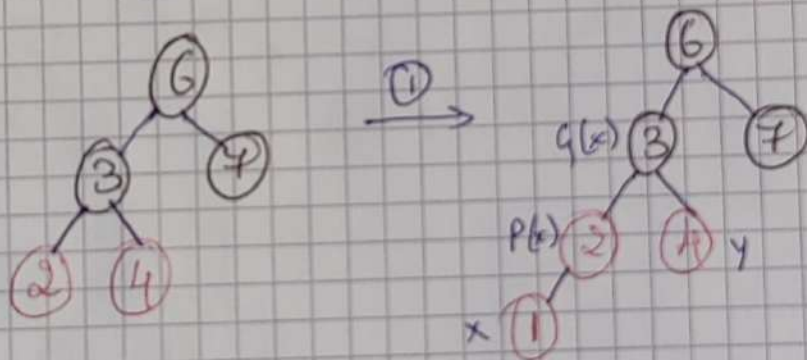


Step 2:

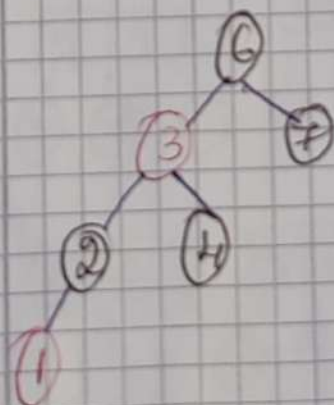
Now both the child node  $x$  and the parent node  $P(x)$  are red and the parent's sibling  $y$  is also red



Step 3: Insert 2



Step 4:



4. AVL tree from - 6, 7, 3, 4, 2, 1

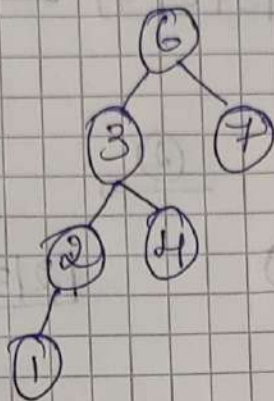
Step 1:

bal = 2

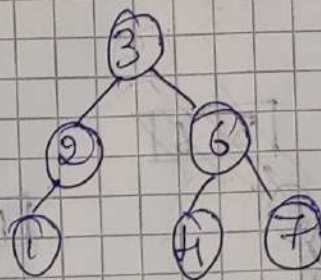
bal = 1

bal = 1

bal = 0



Step 2:

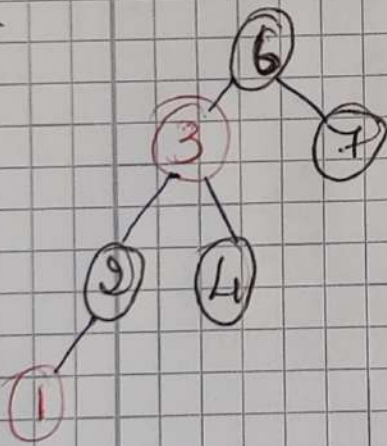


The difference b/w the Red-Black and the AVL tree is that we have to rebalance the entire tree in AVL tree (Step 2) by checking the balance.



2-3-4 trees for 6, 7, 3, 4, 2, 1

6.



$\Rightarrow$

