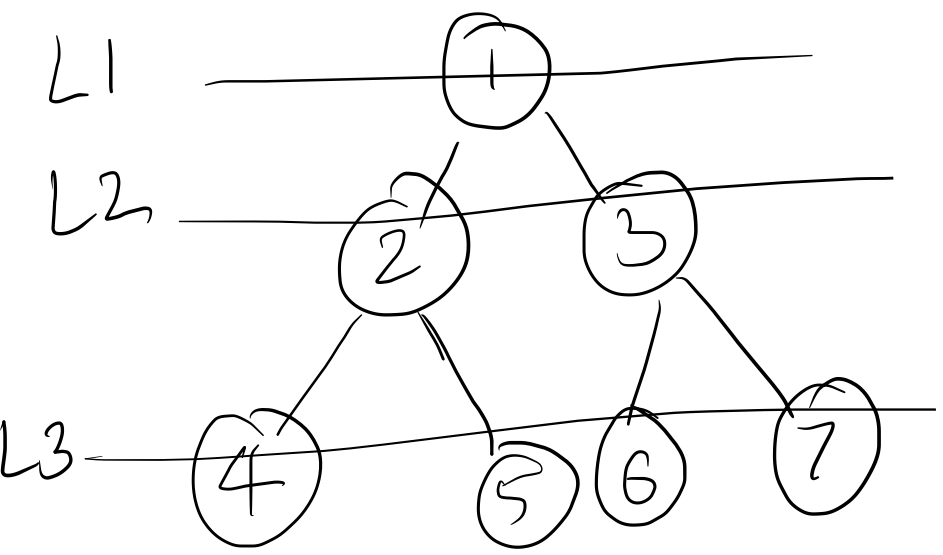
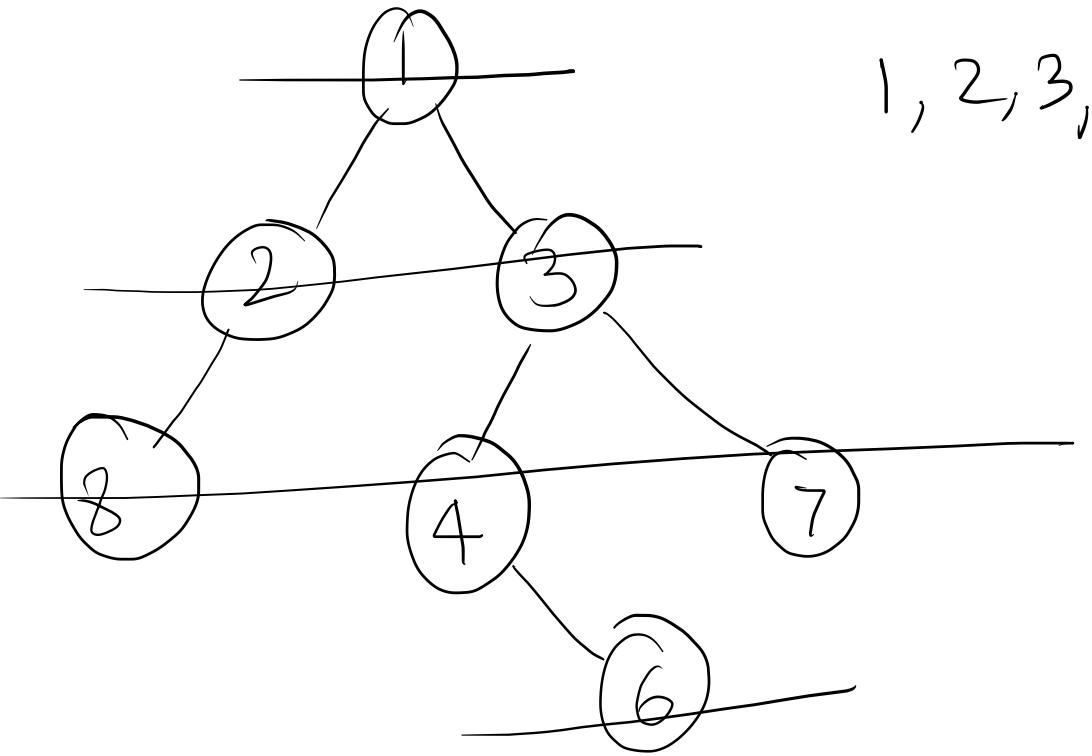
Level Order Traversal

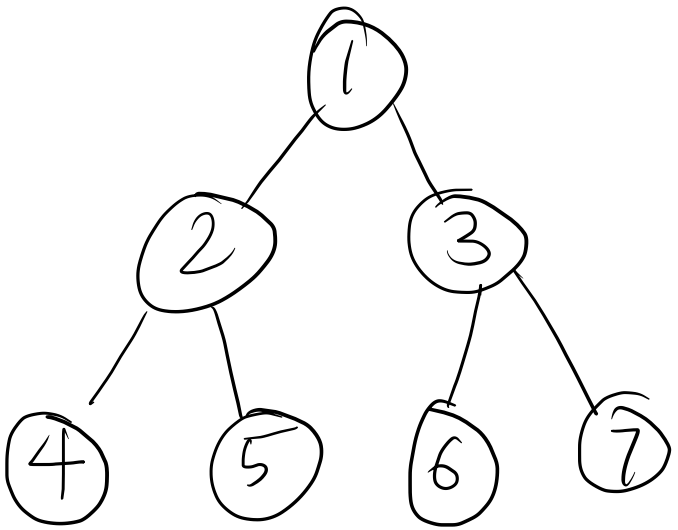


1 2 3 4 5 6 7

Level Order

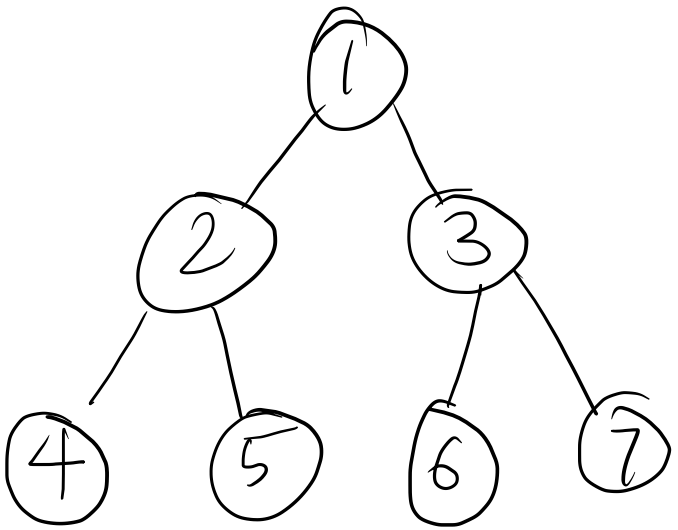


1, 2, 3, 8, 4, 7, 6



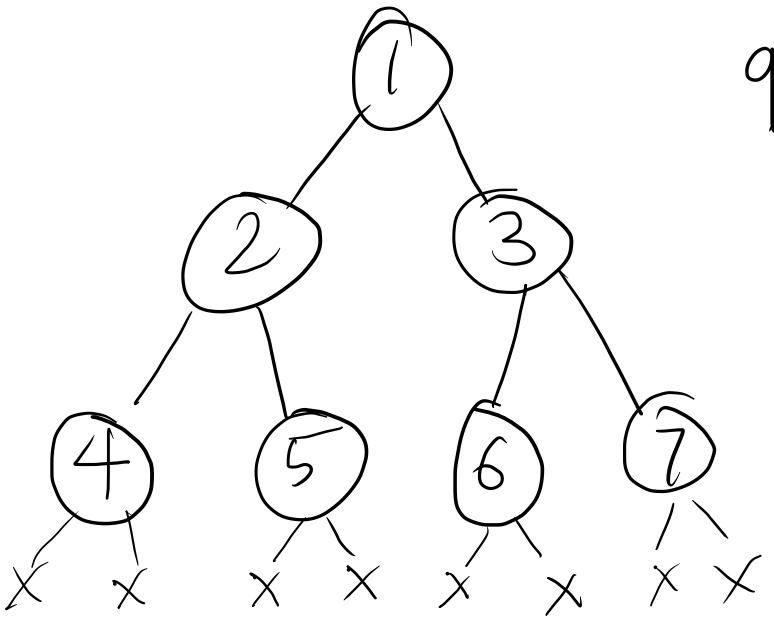
Queue

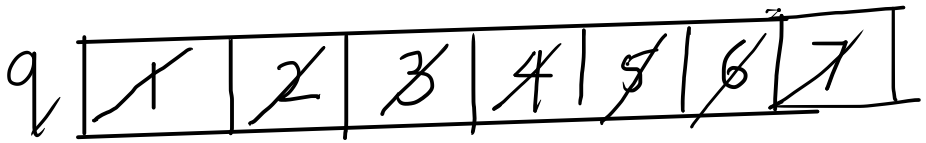
First come, first serve



Queue

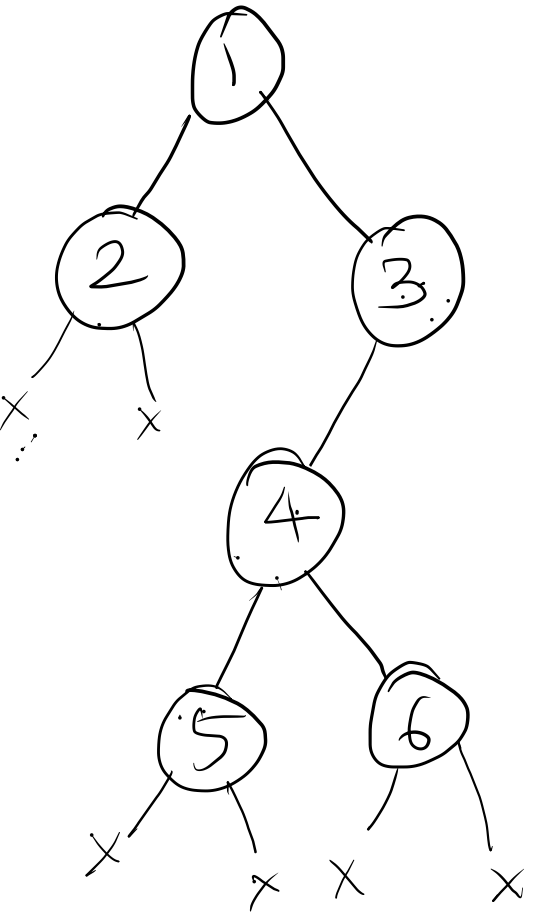
First come, first serve





{1, 2, 3, 4, 5, 6, 7}

First In, First Out (FIFO)



q | 1 | 2 | 3 | 4 | 5 | 6 |

ans - { 1, 2, 3, 4, 5, 6 }

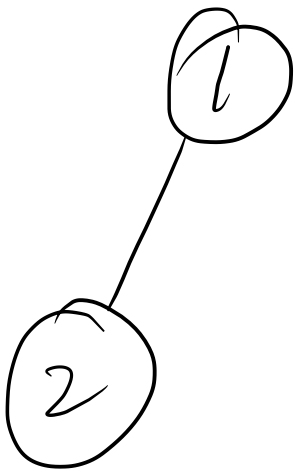
1. remove from q
2. add in the list
3. add its left
4. add its right

T.C = O(n)

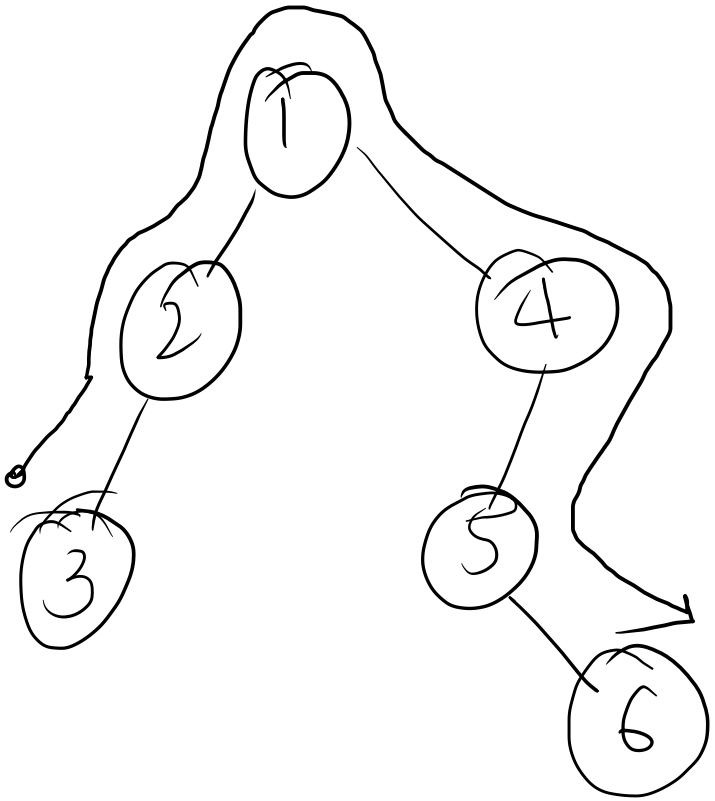
S.C = O(n)

(q, + list)

Diameter of Tree

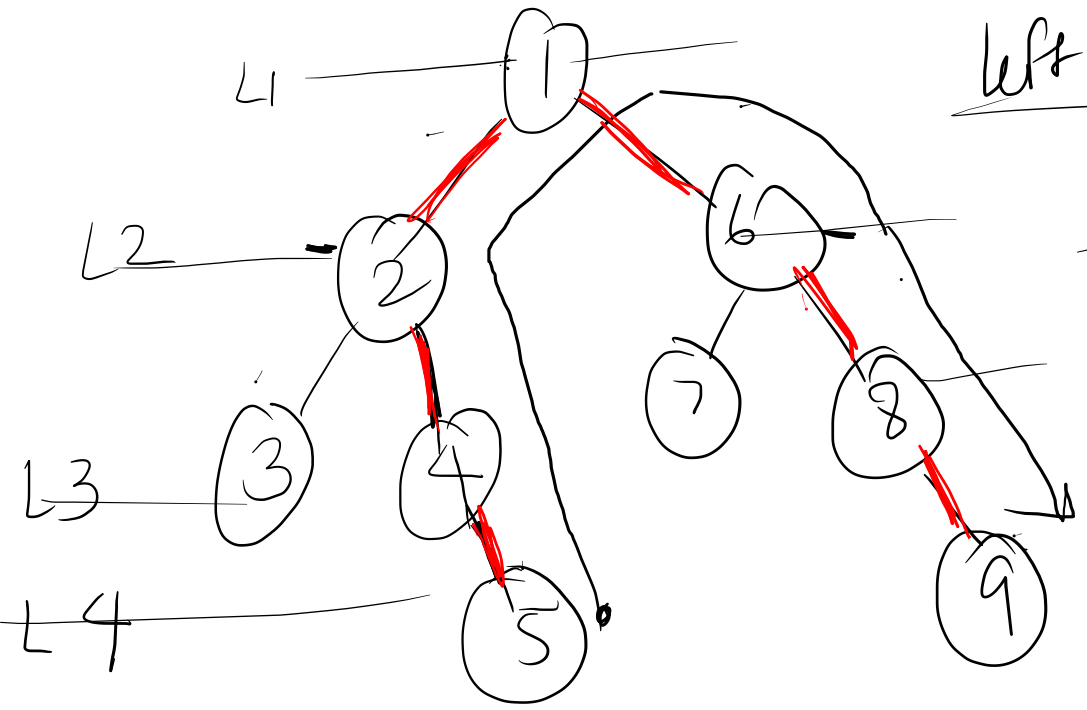


ans = 1



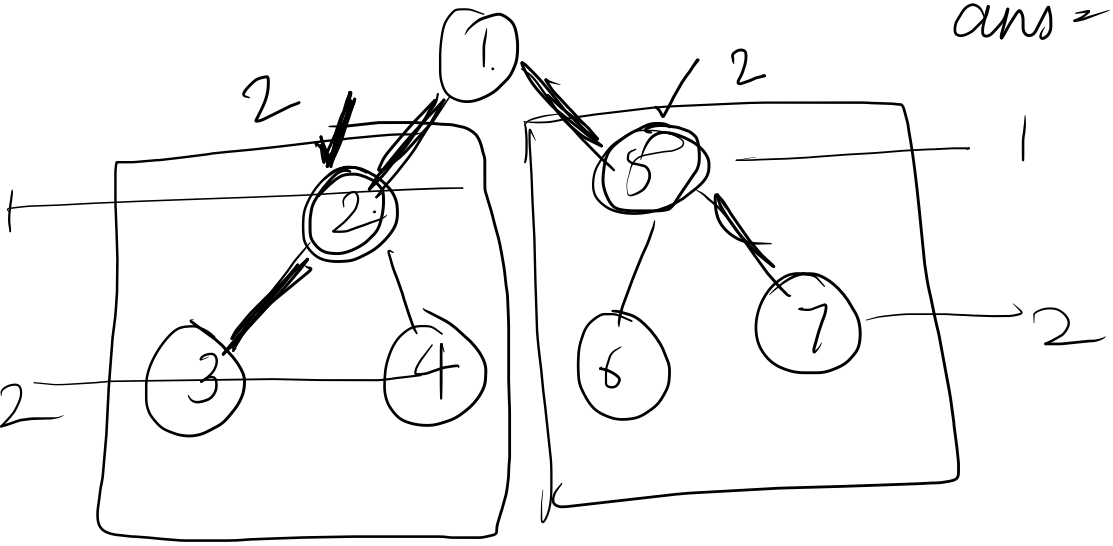
3 to 6

ans = 5



left height + right height

4 + 4

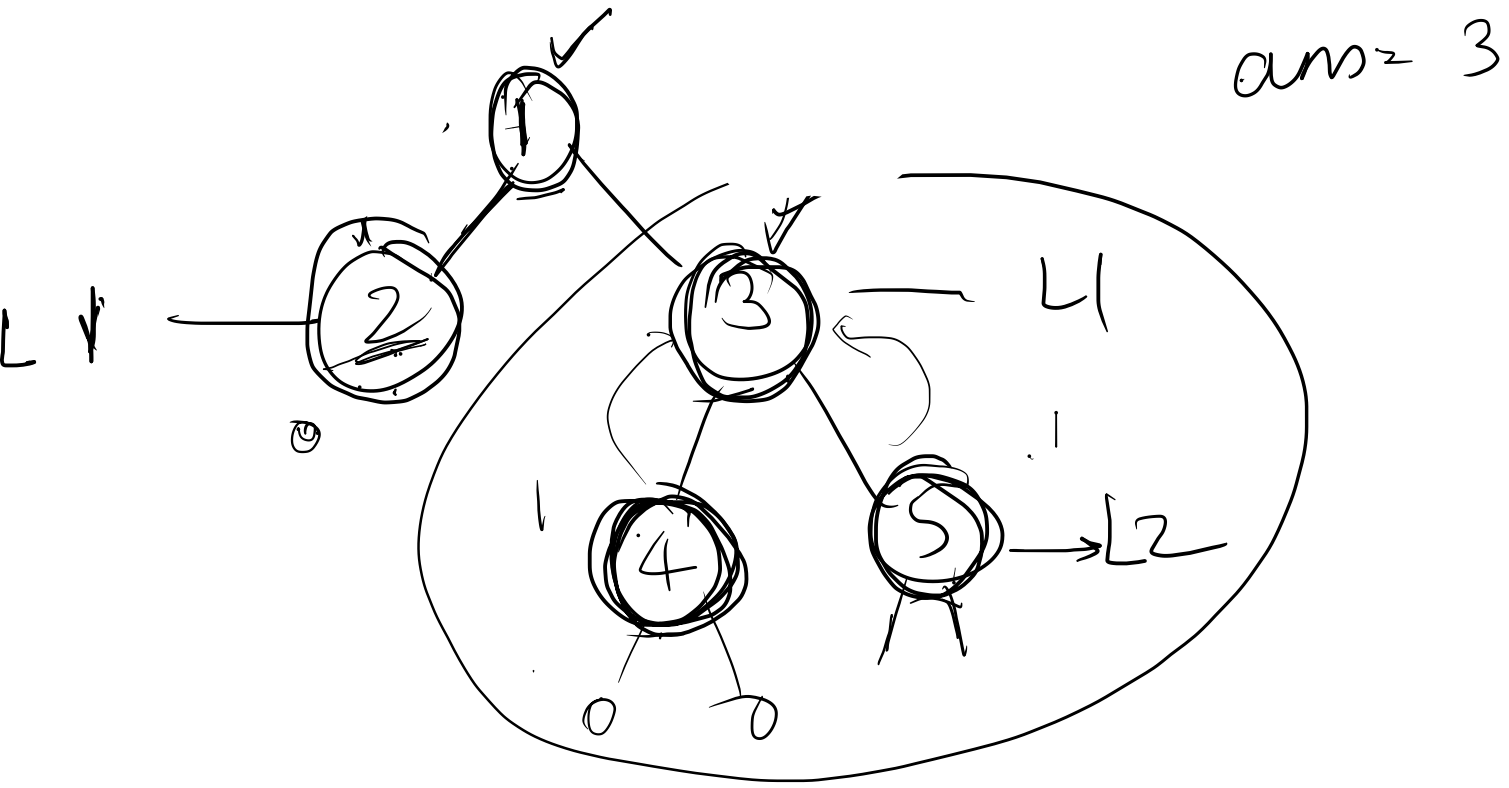


ans = left height + right height

= 2 + 2

= 4

$$height = 1 + \max(Lht + Rht)$$


ans= 3
1
2
3
4
5
L1
L2
0
0
1
1

$$height = 1 + \max(lh, rh)$$

$$diameter = lh + rh$$

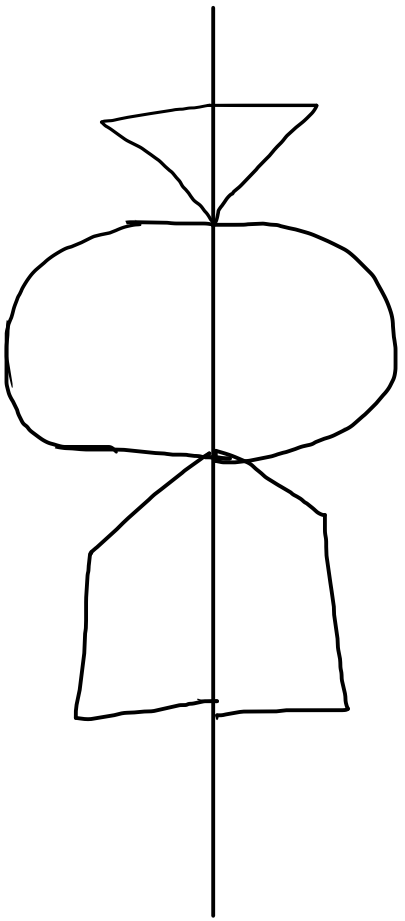
$T.C = O(n)$

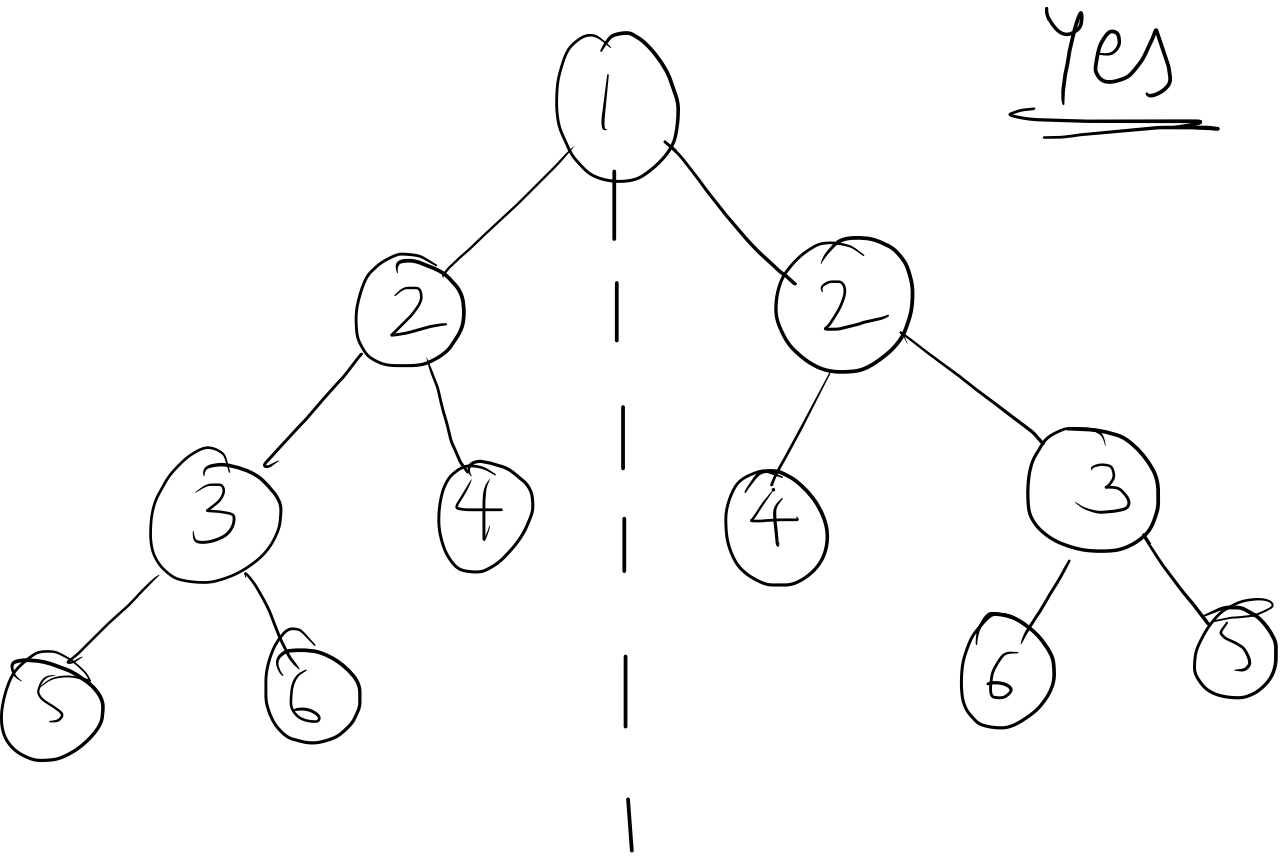
$S.C = O(h)$

T.C = O(n)

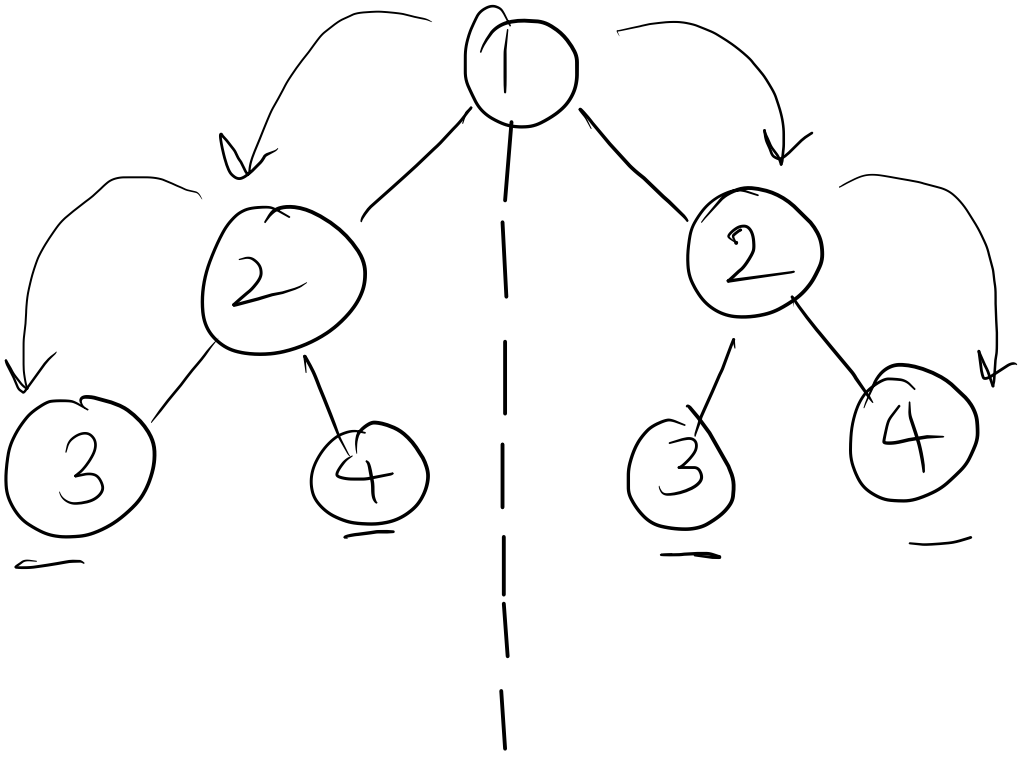
S.C = O(h)

Mirror Image

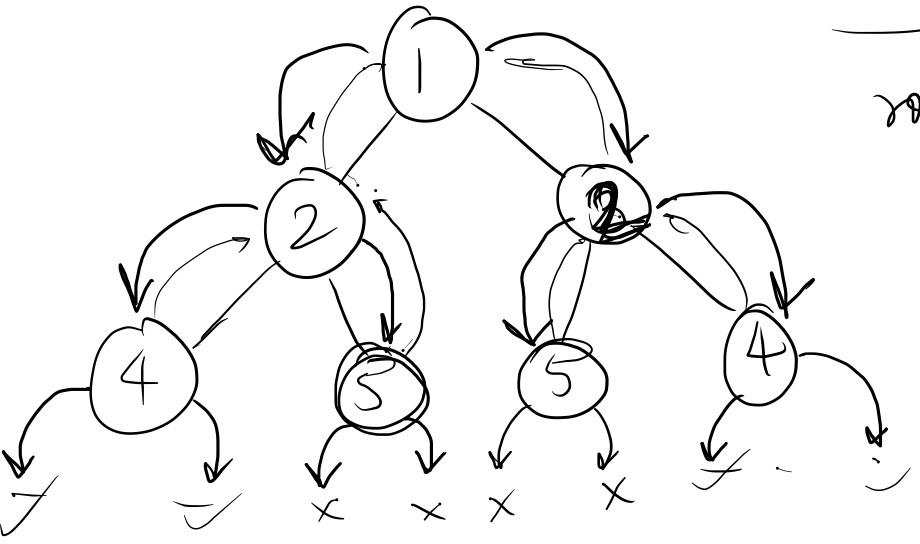




Yes

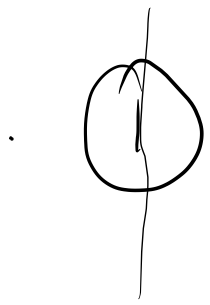


Not a mirror image



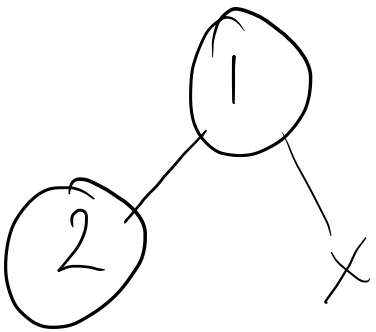
root.left.val = root.right.val

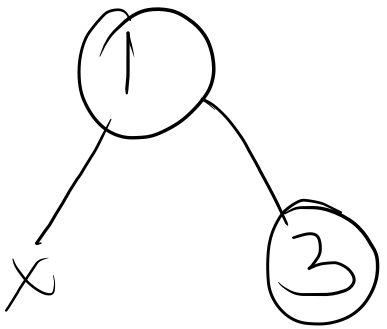
root.right.val = root.left.val



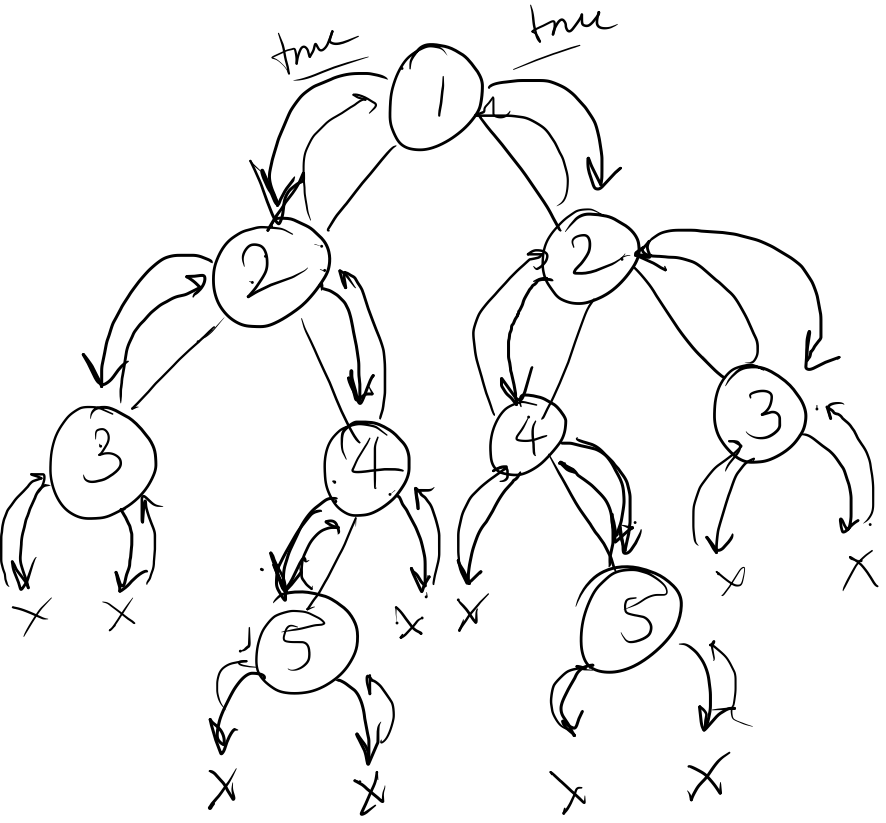
if (root.left == null && root.right == null)

return true



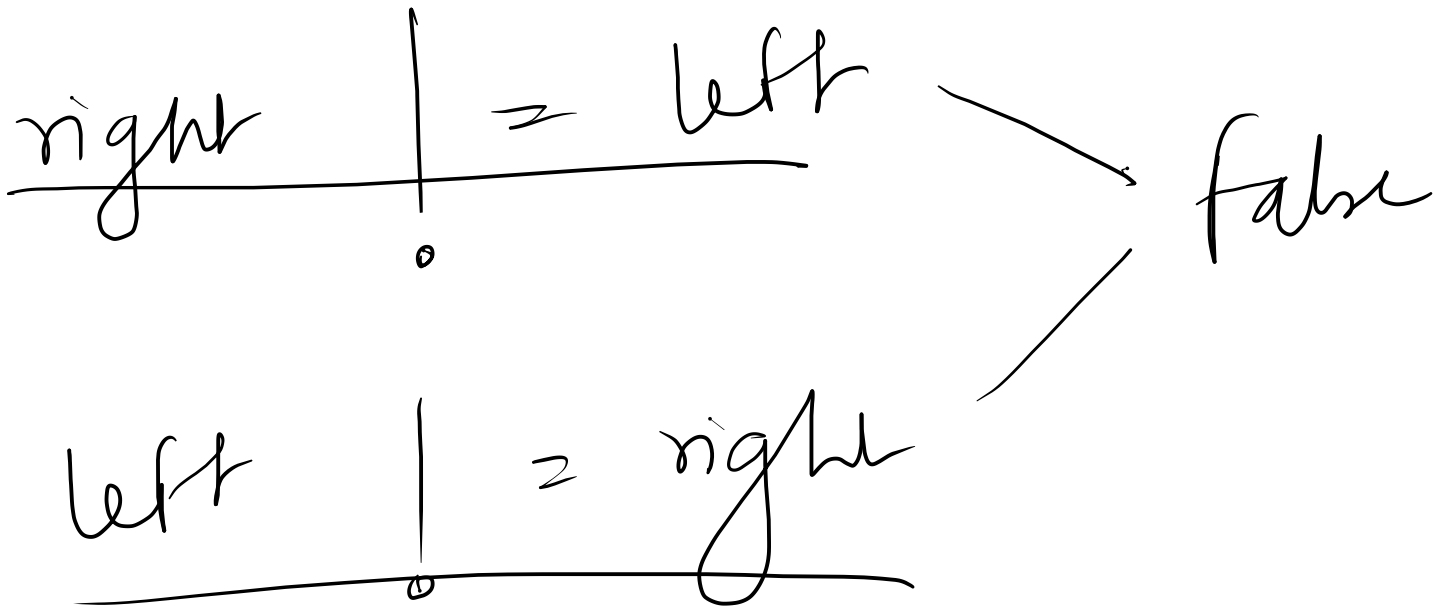


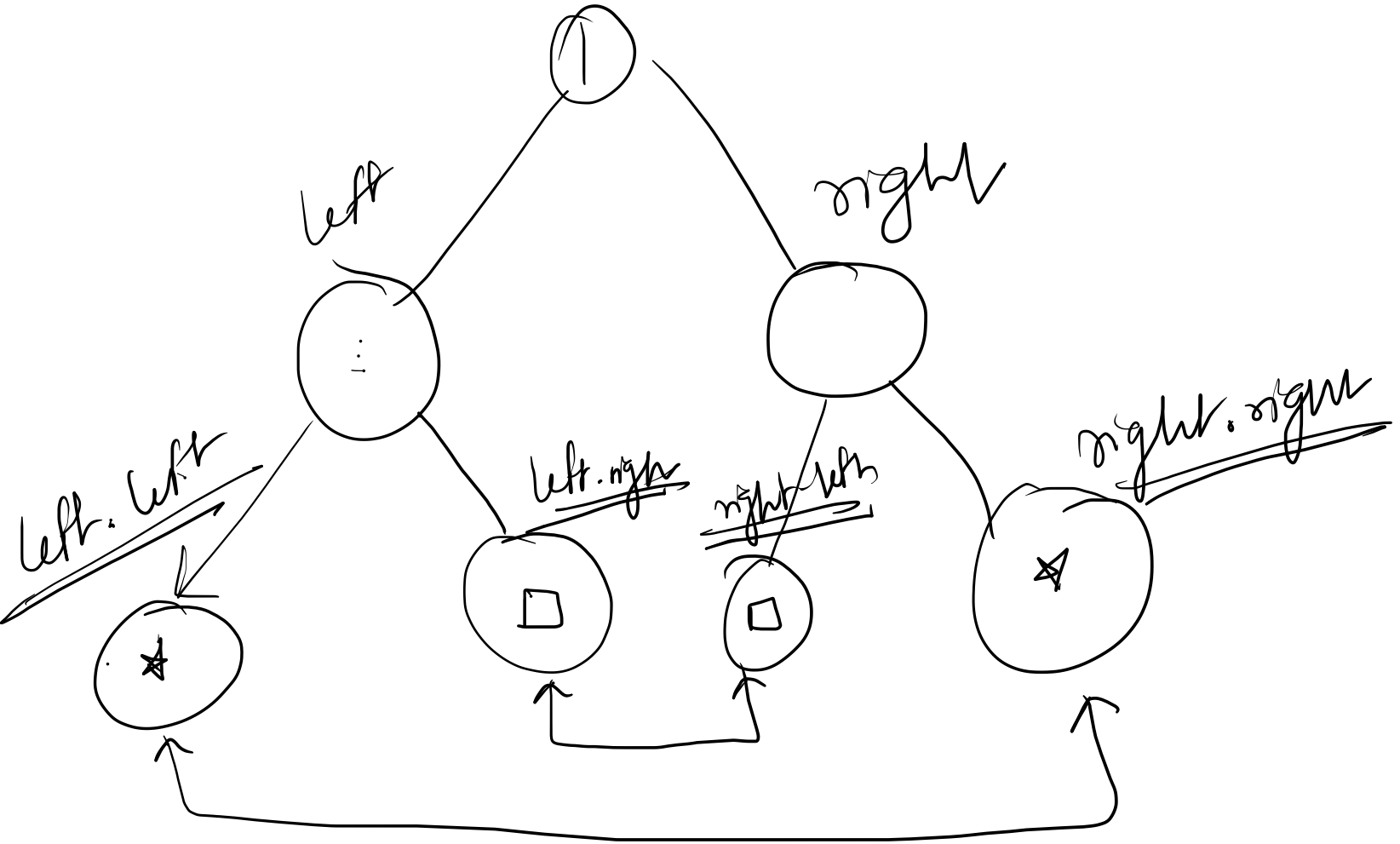
false



left ⟺ right

right ⟺ left


right
= left
0
false
left
= right
0


left
right
left.left
left.right
right.left
right.right

$$\underline{T.C} = O(N)$$

$$\underline{Aux\ S.C} = \underline{O(N)}$$

$$\underline{\text{stack}}$$