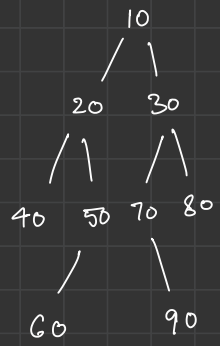
Is tree Balanced.

{A tree is balanced, when each node is balanced in it}



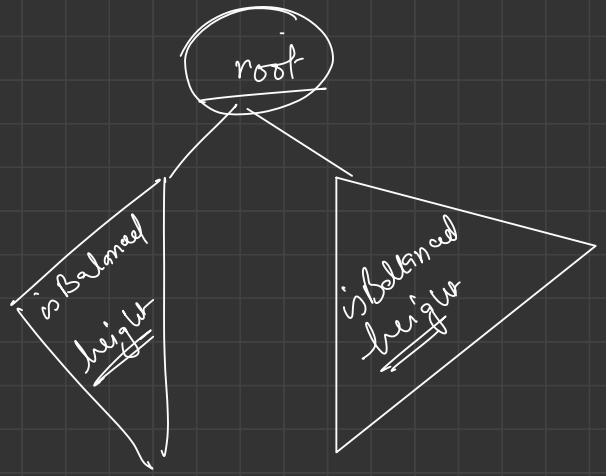
A node is balanced.

- $|lh - rh| \leq 1$

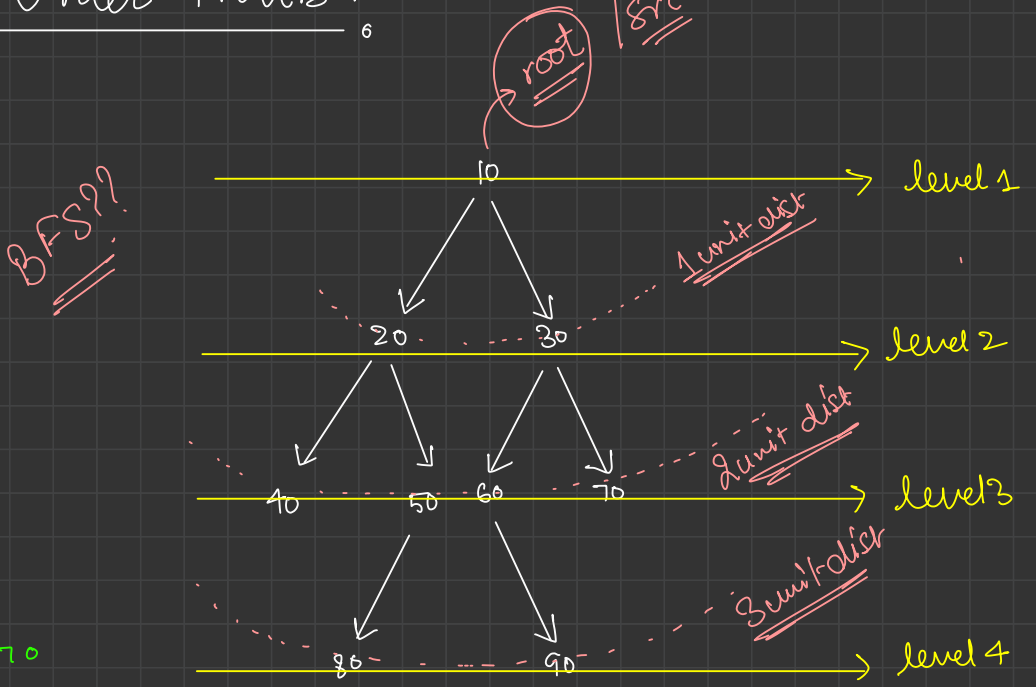
Brute force

O(N²)

- O(N)?



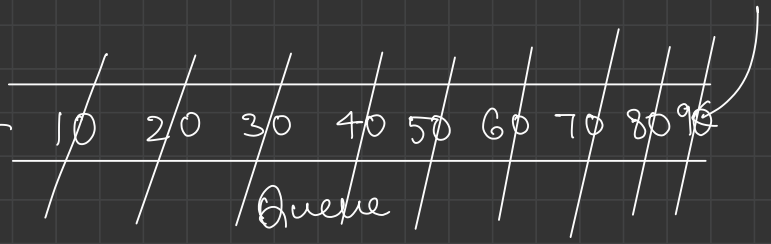
level Order Traversal

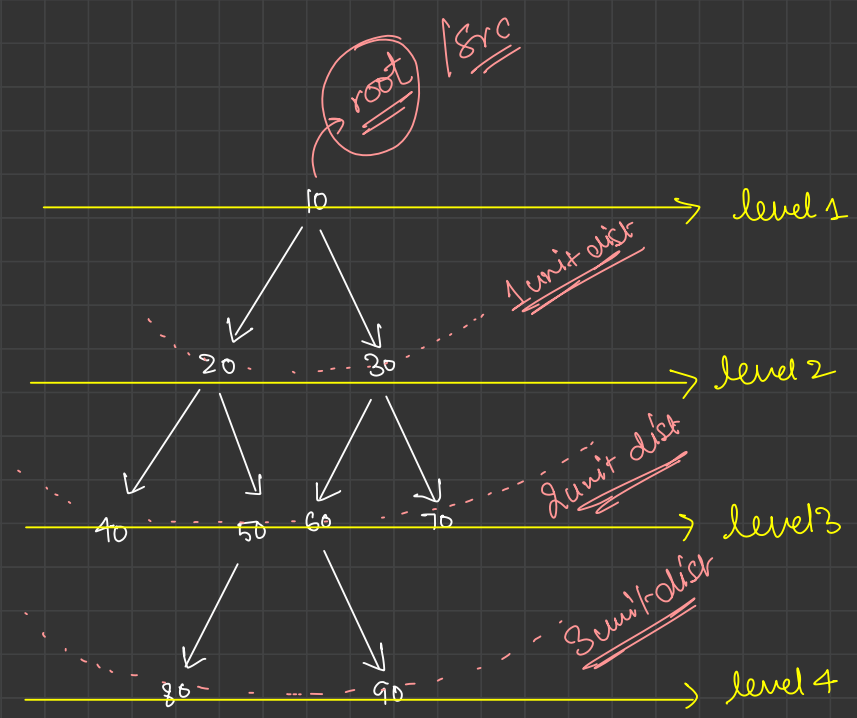


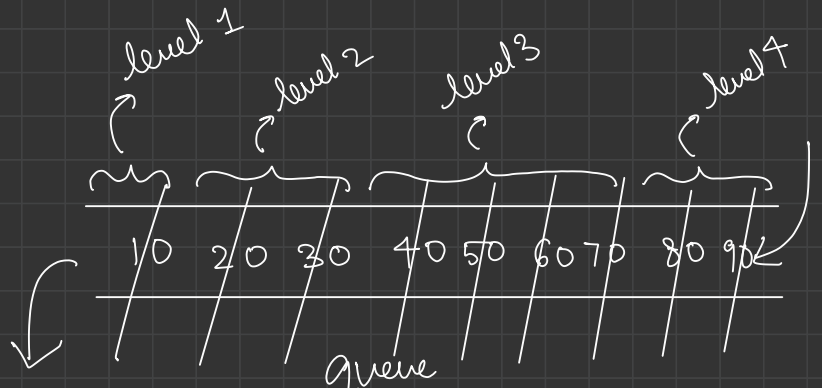
O/P

10
20 30
40 50 60 70
80 90

10, 20, 30, 40, 50, 60, 70, 80, 90

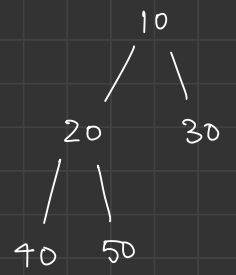


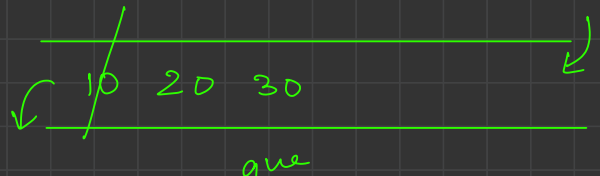




{
10
20 30
40 50 60 70
80 90

```java
Queue<TreeNode> que = new ArrayDeque<>();
que.add(root);
int level = 1;

while (que.size() > 0) {
    int size = que.size();
    List<Integer> currLevel = new ArrayList<>();

    while (size-->0) {
        TreeNode rnode = que.remove();
        currLevel.add(rnode.val);

        if (rnode.left != null) {
            que.add(rnode.left);
        }

        if (rnode.right != null) {
            que.add(rnode.right);
        }
    }

    System.out.println(level + "-->" + Arrays.toString(currLevel.toArray()));

    level++;
}
```





10

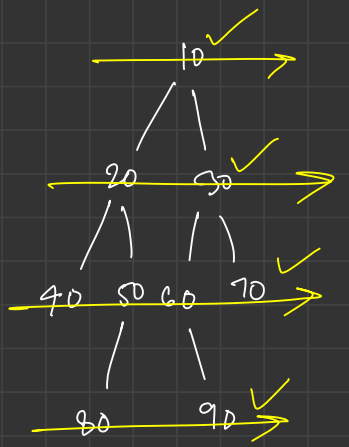
level = ~~1~~ 2 size = ~~1~~ ~~0~~ 2

1 ⟶ {10}

currLevel = {

Views

① Right View

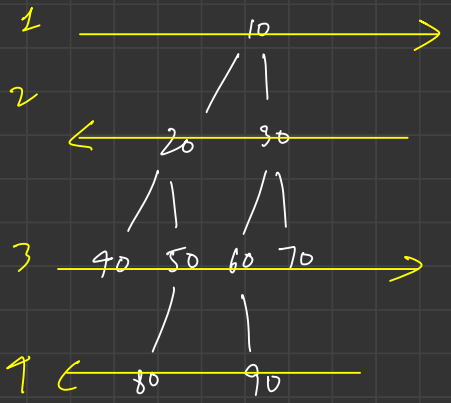


{10, 30, 70, 90}

↳ or

Last Element of each level.

Zig-Zag Traversal



o/p

10

30 20

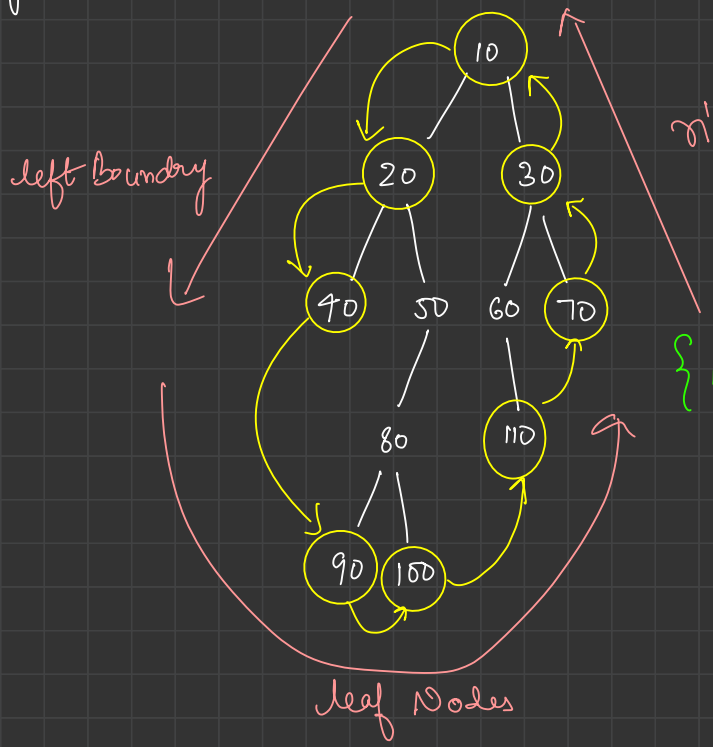
40 50 60 70

90 80

odd levels → left to right

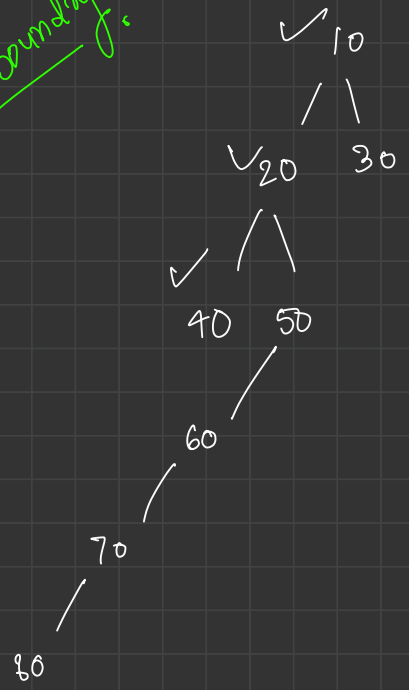
even level → right to left

Boundry Traversal



{10, 20, 40, 90, 100, 110, 70, 30, 10}

left Boundary:



lb : 10, 20, 40

lb : 10, 20, 40, 50, 60, 70.