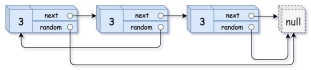
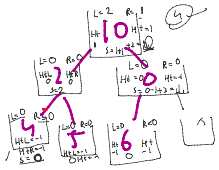
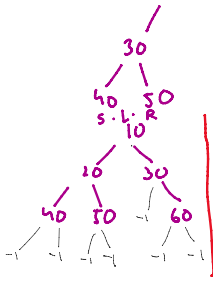
12 February 2023 10:56

copy random LL ⟹





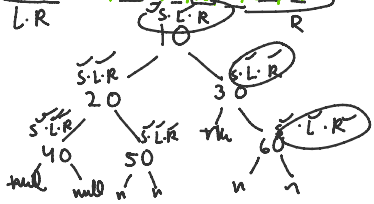
```
public int Dia() {
        return Dia(root);
    }
    private int Dia(Node nn) {
        if(nn==null) {
            return 0;
        }
        int L_dia = Dia(nn.left);
        int R_dia = Dia(nn.right);

        int self_Dia =
        Ht(nn.left)+Ht(nn.right)+2;

        return Math.max(R_dia,
        Math.max(L_dia, self_Dia));
    }
```



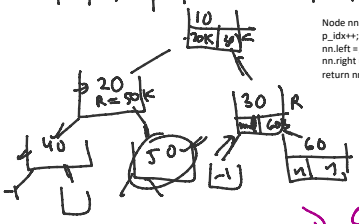
Pre

10 (20,40, -1, -1, 50, -1, -1, 30, -1, 60, -1, -1)

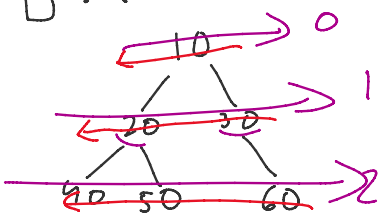
S L R L R



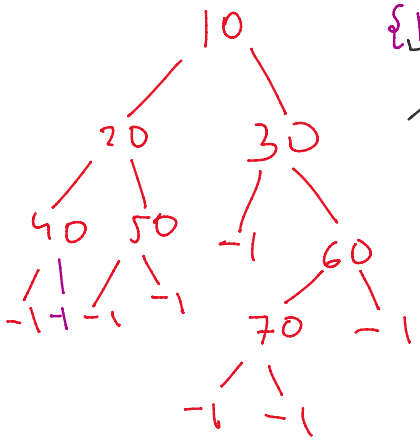
10, 20, 40, -1, -1, 50, -1, -1, 30, -1, 60, -1, -1



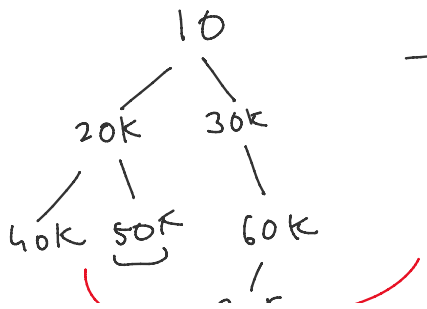
```
Node nn = new Node(pre[p_idx]);
p_idx++;
nn.left = create_Pre(pre);
nn.right = create_Pre(pre);
return nn ;
```

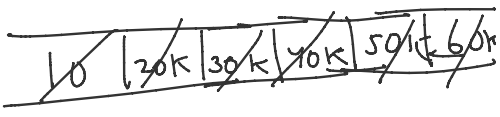


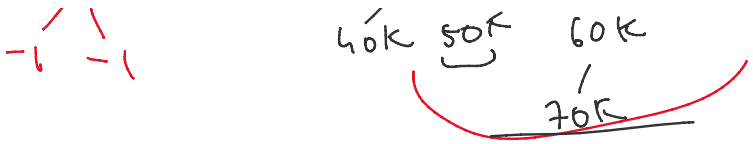
10
20
30
40
50
60

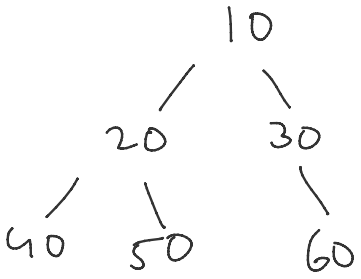


{10, 20, 30, 40, 50, -1, 60, -1, -1, -1, -1, 70, -1, -1}









Pre → 10, 20, 40, 50, 30, 60
In → 40, 20, 50, 10, 30, 60
Post → 40, 50, 20, 60, 30, 10

Pre

In

Left ← is, f-1 | ps+1, ps+L-1

Right → f+1, ie | ps+L, pe

S·L·R → 10 | 20, 40, 50 | 30, 60 R

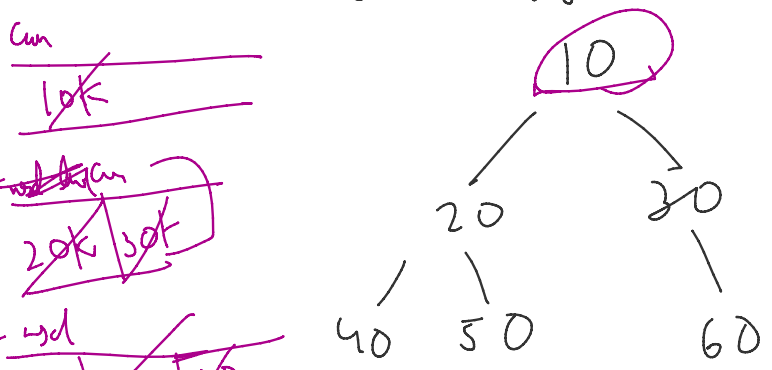
L·S·R → 40, 20, 50 | 10 | 30, 60 R

f → Pre.

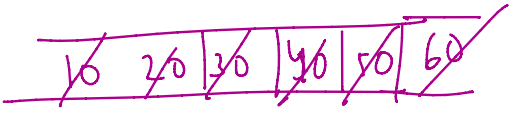
{10}
{10}

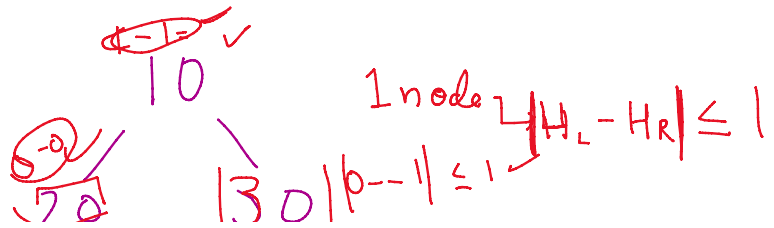
10K
left (0, -1, 14, 0)
rgt (1, 0, 1, 0)

Level order traversal.



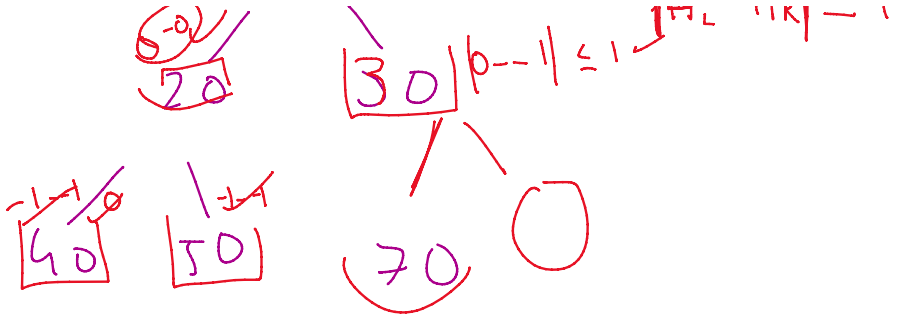
10
20, 30
40, 50, 60





1 node ⇒ $|H_L - H_R| \leq 1$

$|0 - 1| \leq 1$



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