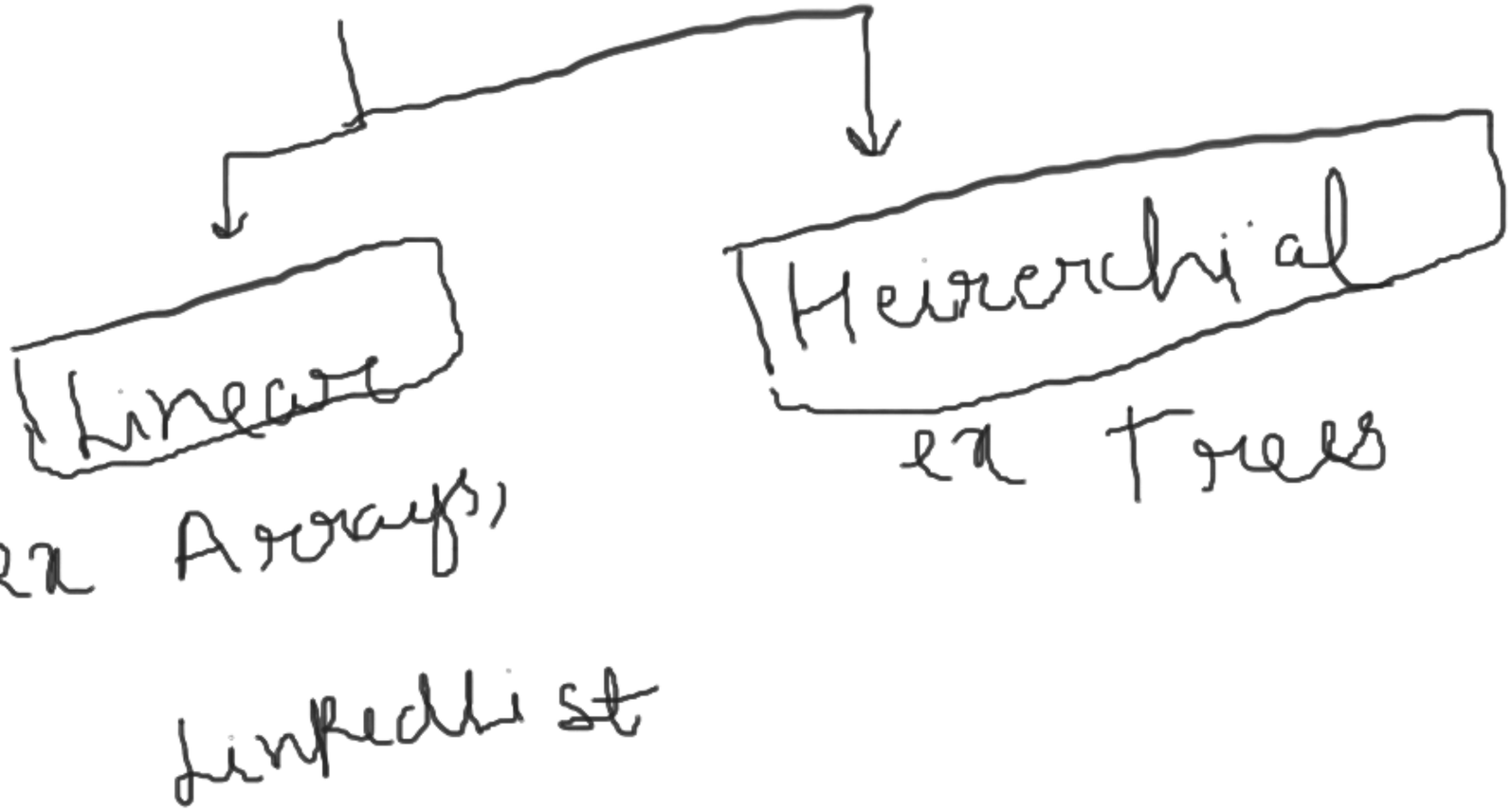
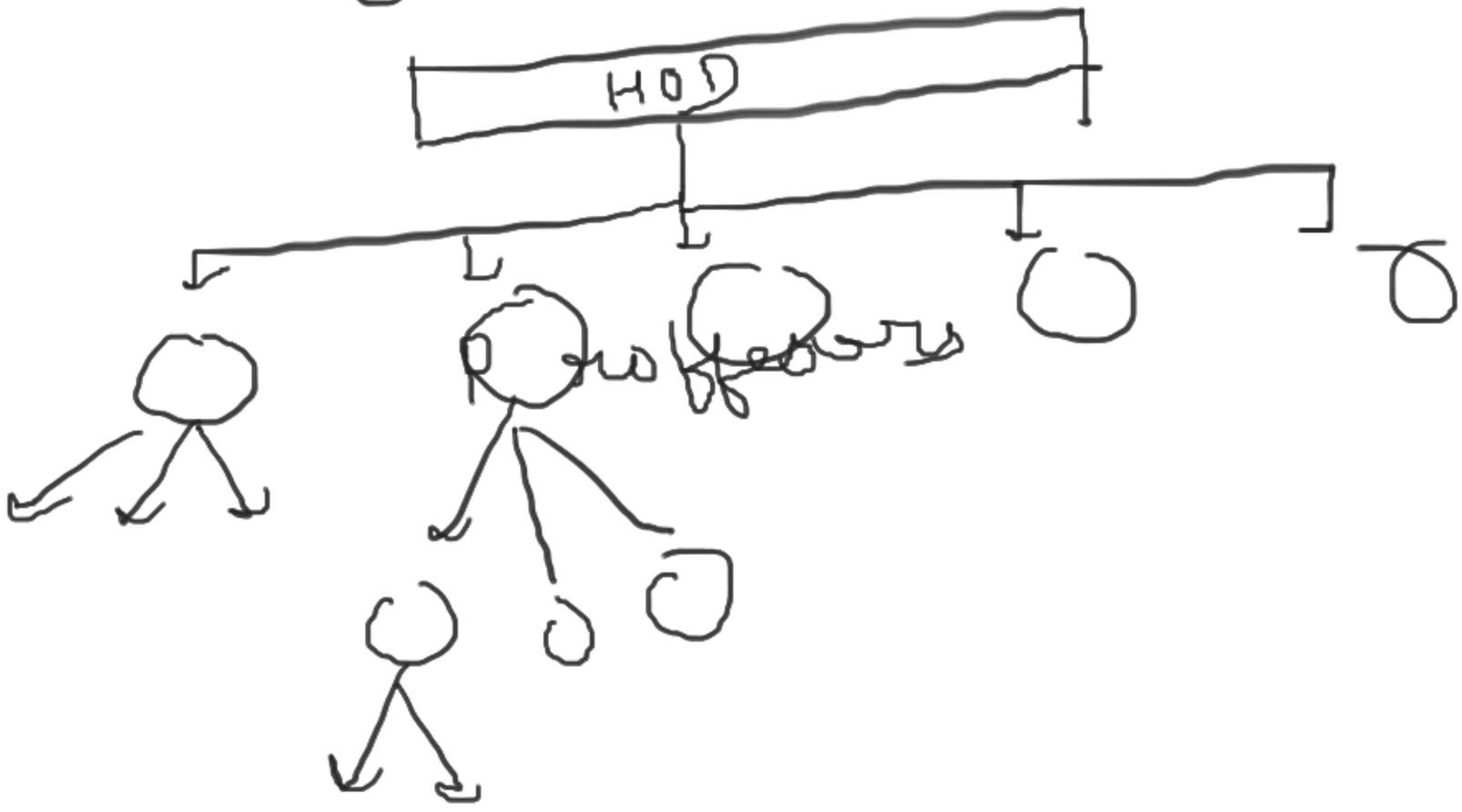
Data Structures



(2) Heirerchial



TREES

1. Binary Tree
2. Binary Search Tree
3. AVL Tree
4. B. Tree

BINARY TREE

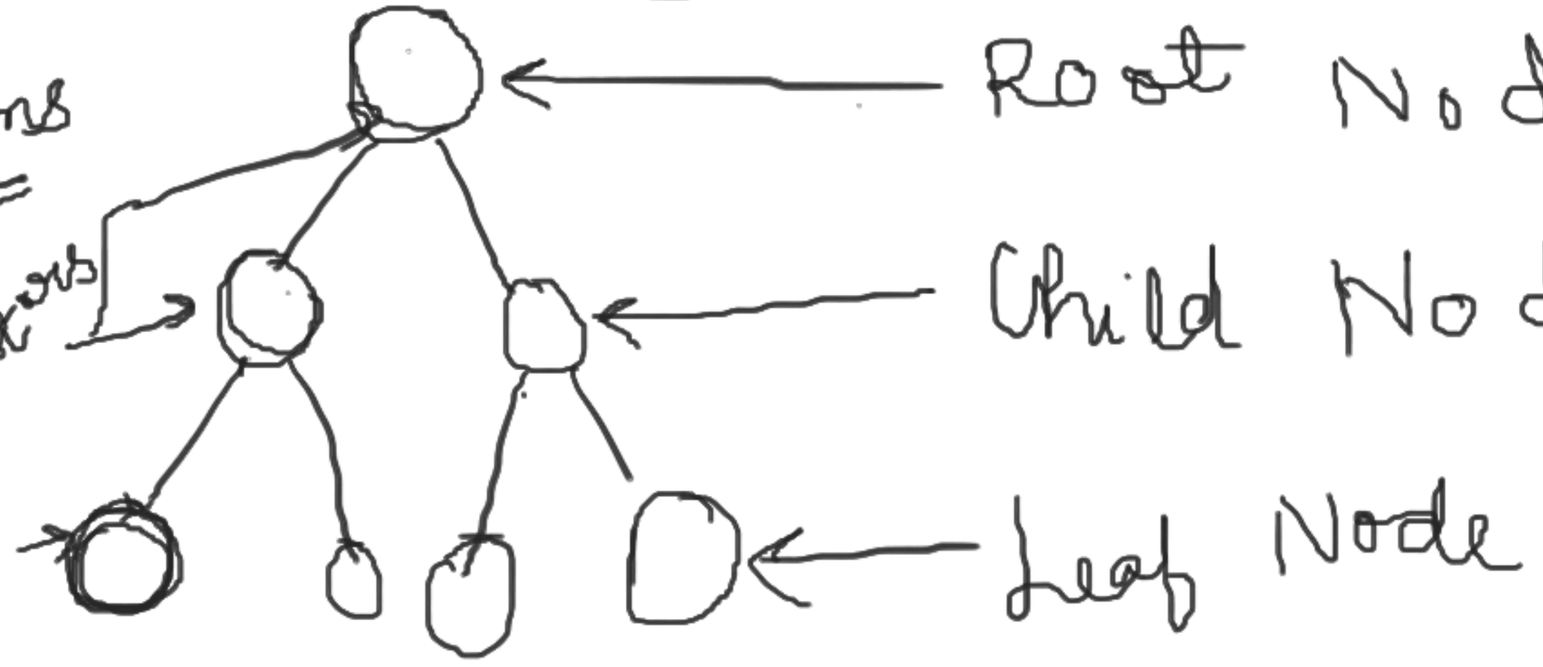
Number 0, 1

True

At most 2 digit 0, 1, 2

At most 2 children

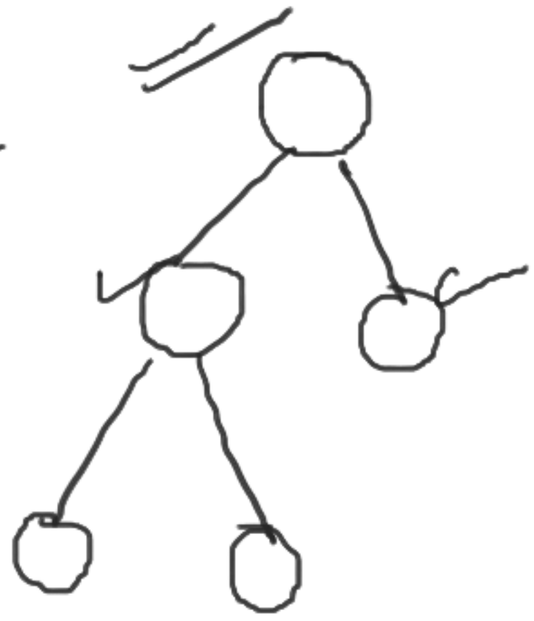
Imp terms



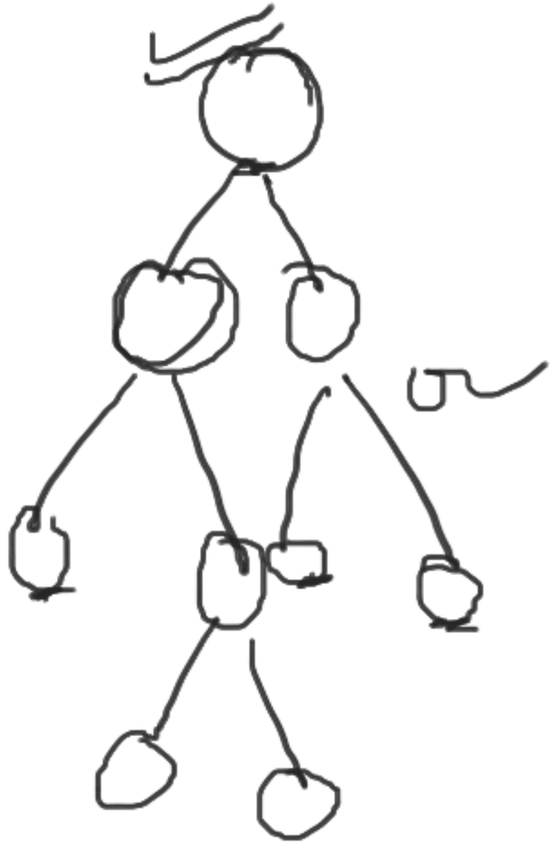
Types of Binary Tree

(1) FULL B.T : Either 0 or 2 children or both

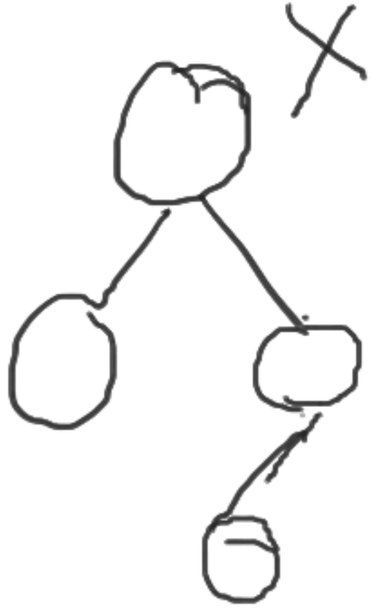
ex



or



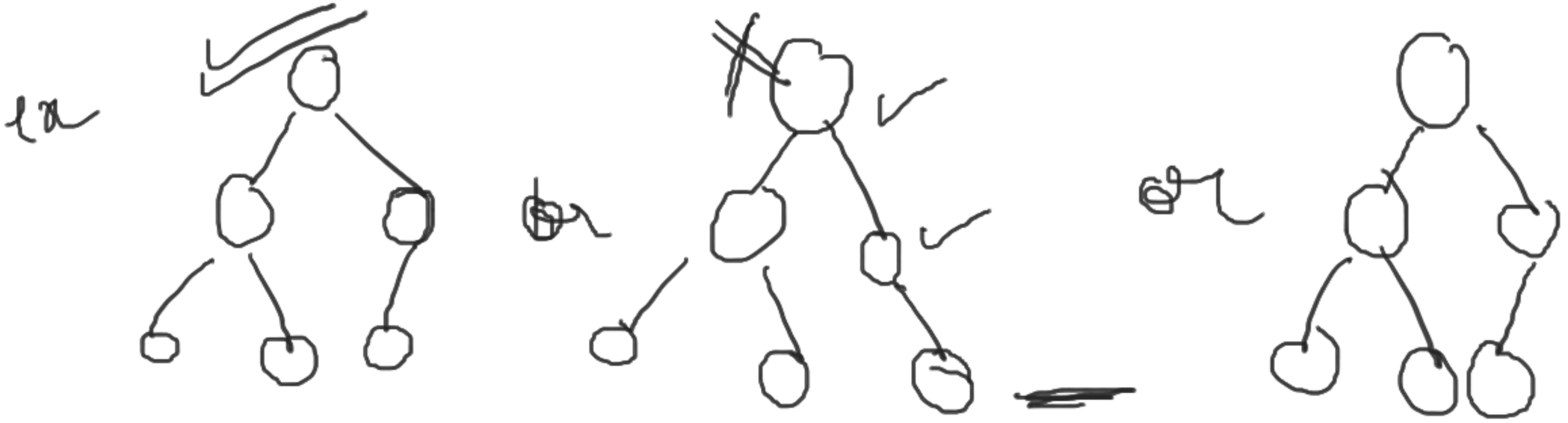
or



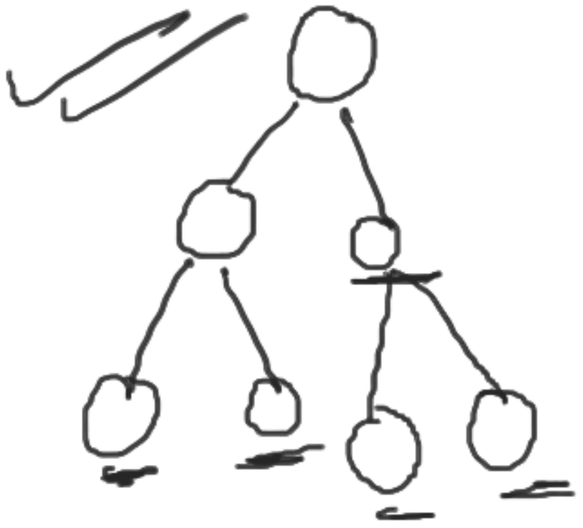
X

2) Complete: (1) All levels are completely filled except the last level

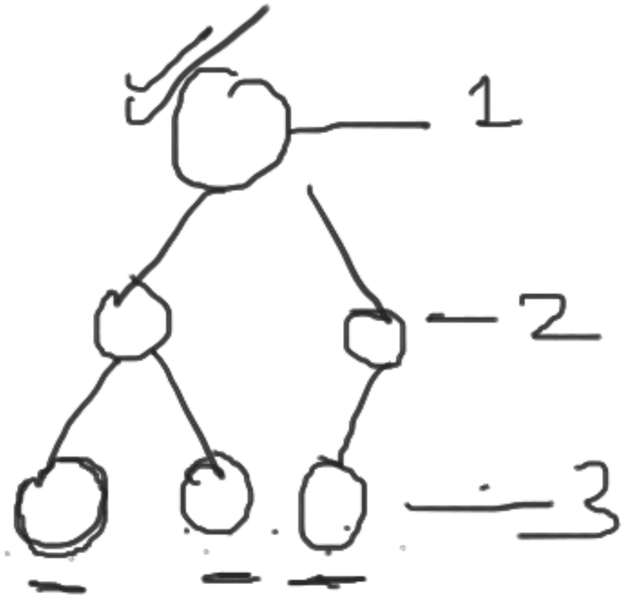
(2) The last level has all nodes to the left



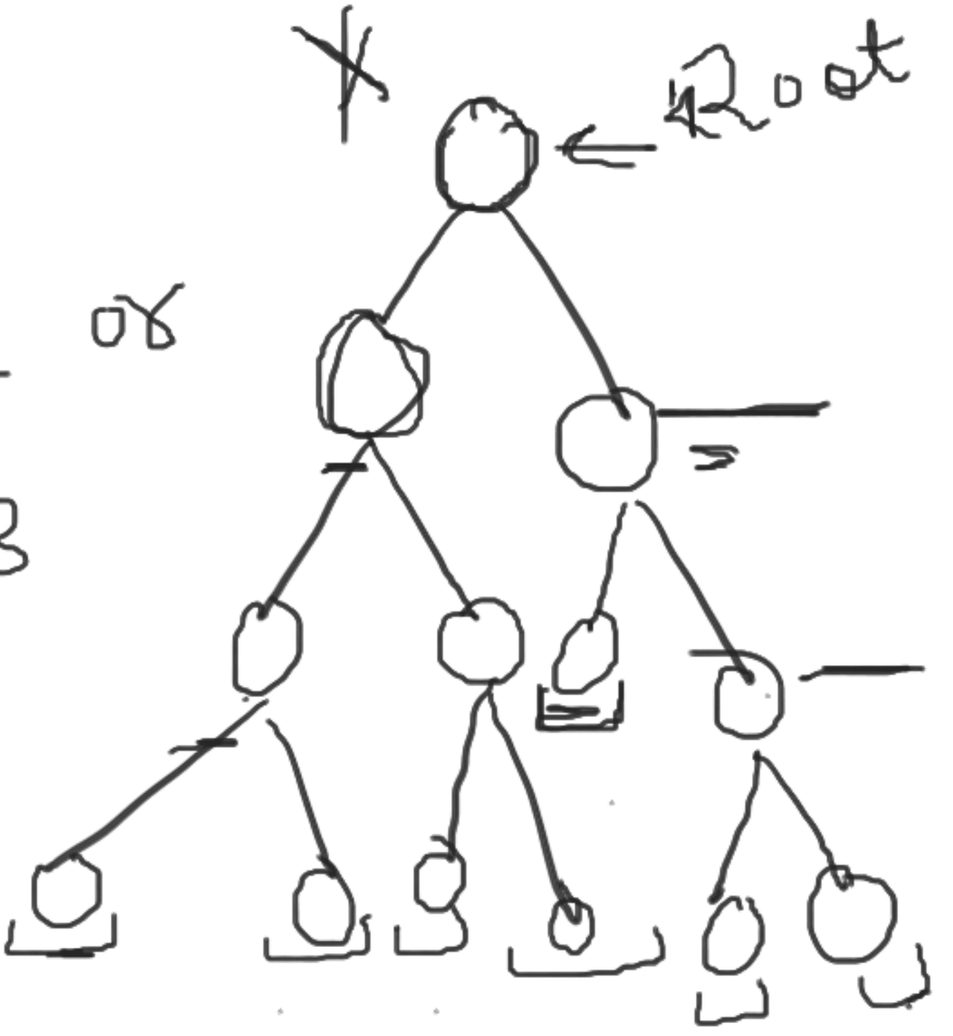
3. Perfect : All leaf nodes are at same level



or



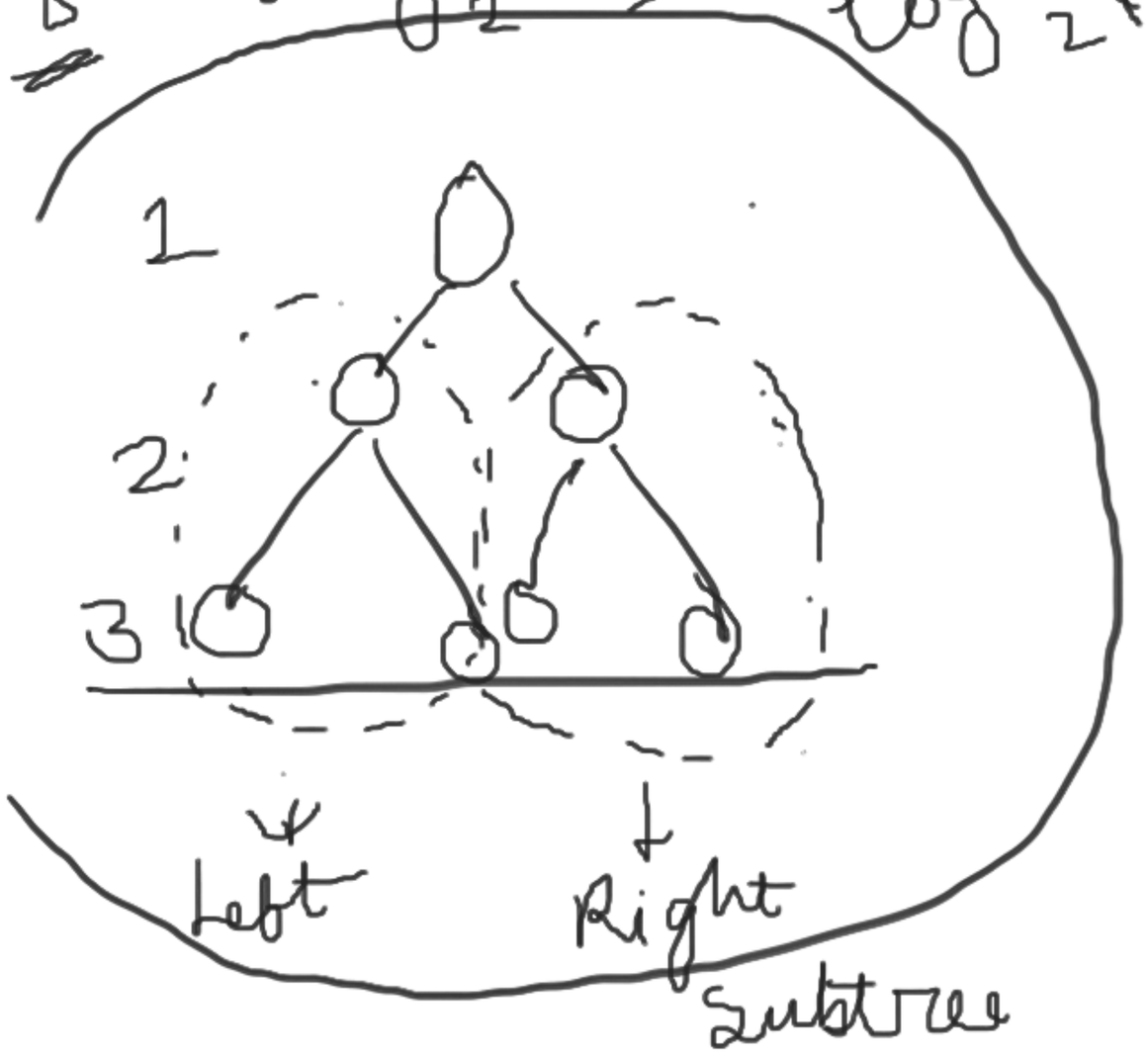
or



4) Balanced : Height of tree at max → log(N)

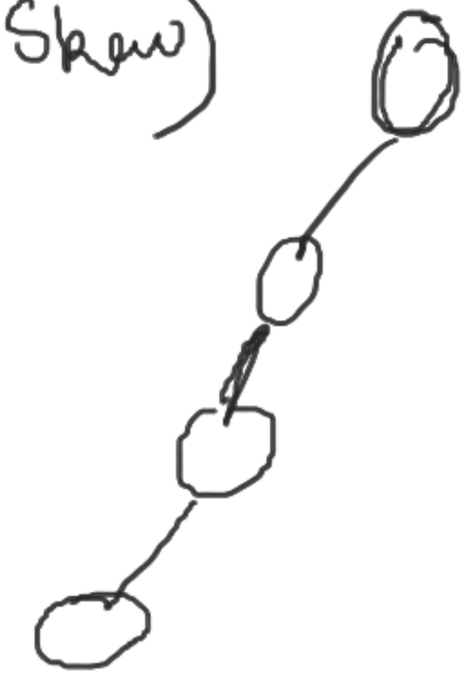
N = 8 $\log_2(8) = \log_2(2^3) = 3$

Nodes

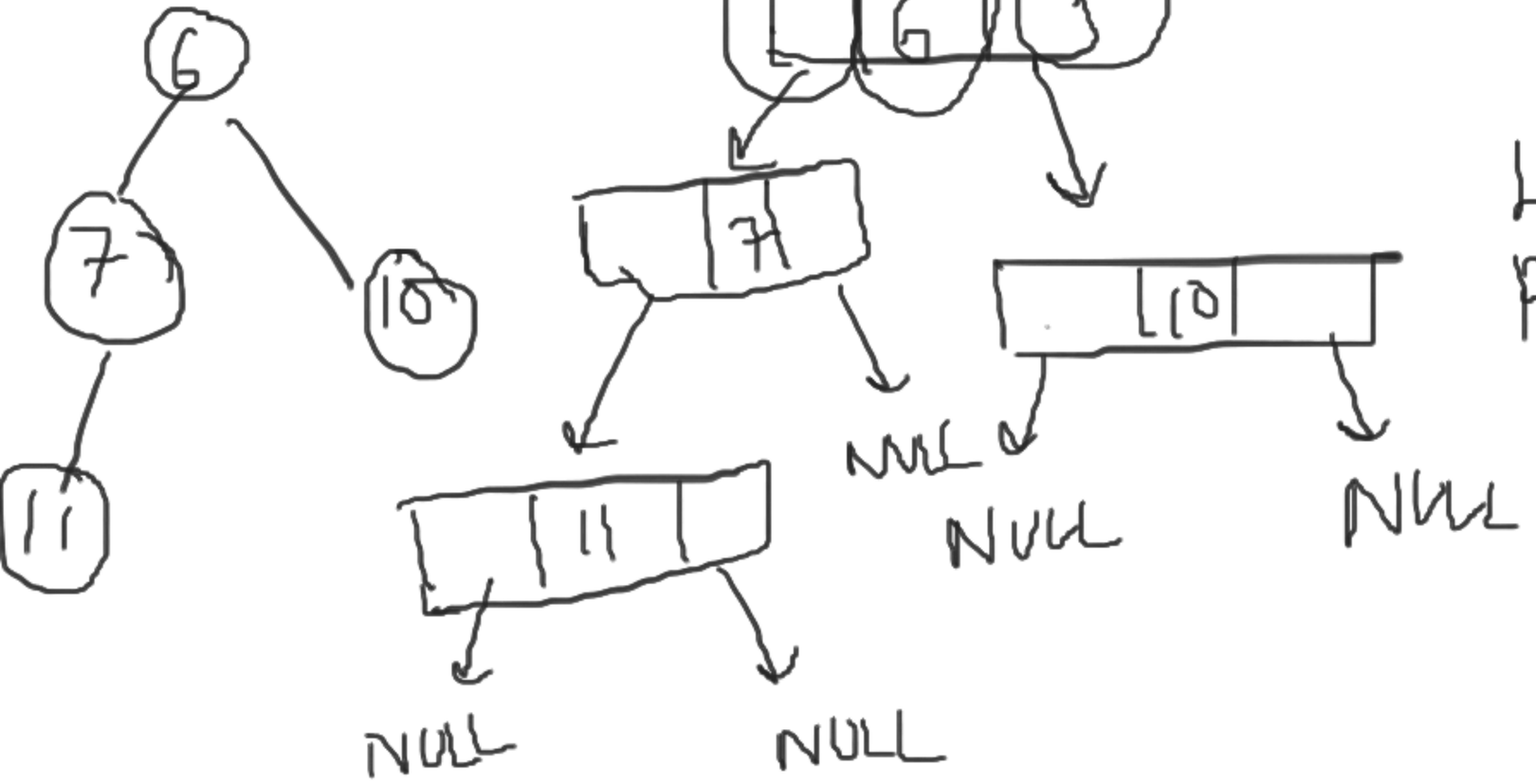


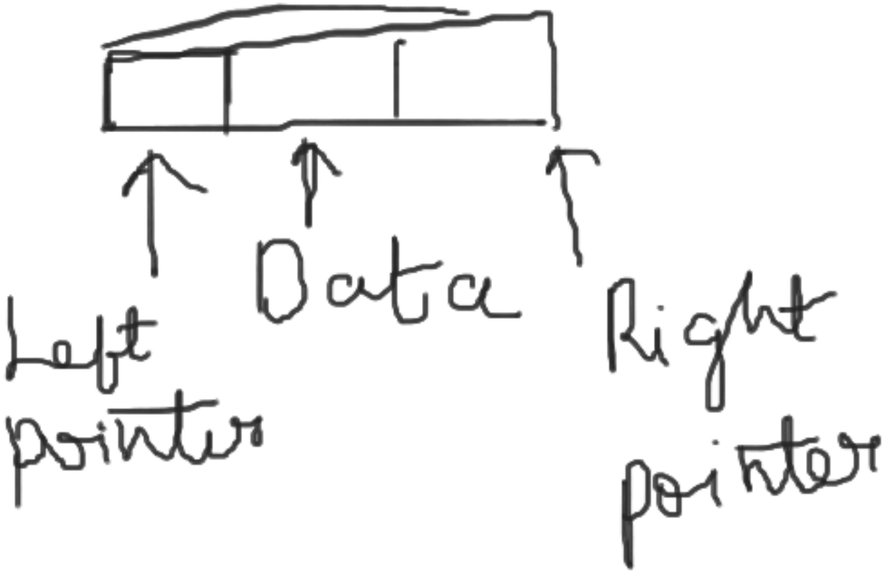
6. Degenerate B.T.: Every node has a single child

(Skew)



Binary Tree Representation in CPP





Binary Tree Representation in Java