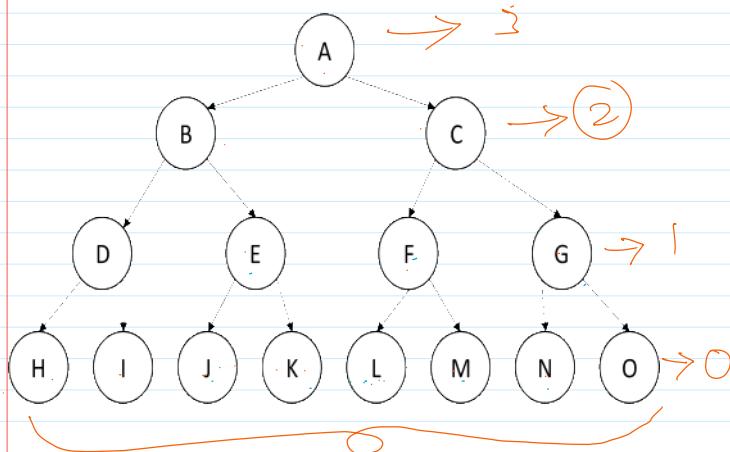


### Strictly/Full Binary Tree :

- Binary tree in which each non-leaf node has exactly two child nodes.
- Strictly binary tree with  $n$  leaves always has  $2^n - 1$  nodes.  
 $2 \times 6 - 1$



### Complete Binary Tree :

*Consider height of empty tree = -1*

- Complete binary tree of height  $h$  whose all leaves are at same level.
- Number of nodes =  $2^{h+1} - 1$   $2^{3+1} - 1 = 15$
- Number of non-leaf nodes =  $2^h - 1$   $2^3 - 1 = 7$
- Number of leaf nodes =  $2^h$   $2^3 = 8$
- Number of non-leaf nodes is 1 less than leaf nodes

If height of empty tree is -1 the formula for no. of nodes :

$$\underline{2^{(h+1)} - 1}$$

If height of empty tree is 0 the formula for no. of nodes :

$$\underline{2^h - 1}$$