

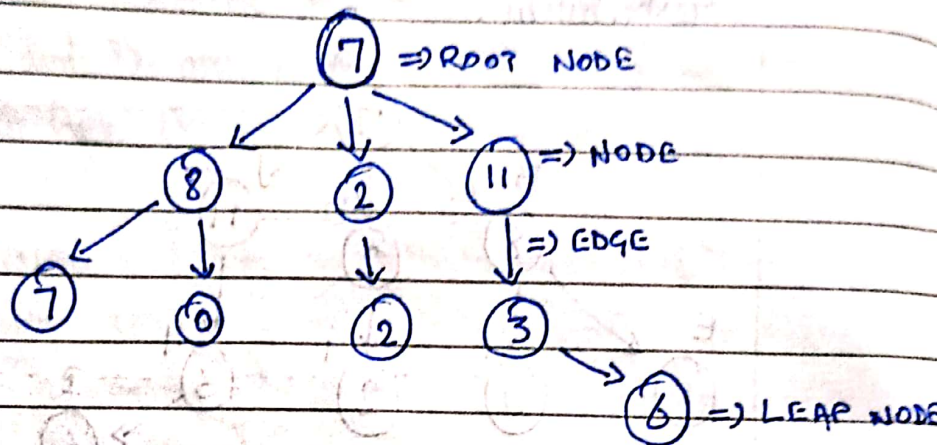
## Few Additional Points:

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- 1) A tree with  $n$  nodes has  $n-1$  edges.  
→ Because in a tree, there is one and only edge corresponding to all the nodes except the root node. The root node has no parent, hence no edge pointing to it. Therefore, a total of  $n-1$  edges.
- 2) The degree of a node in a tree is the number of children of a node.



3) The degree of a tree is the highest degree of a node among all the nodes present in the tree.

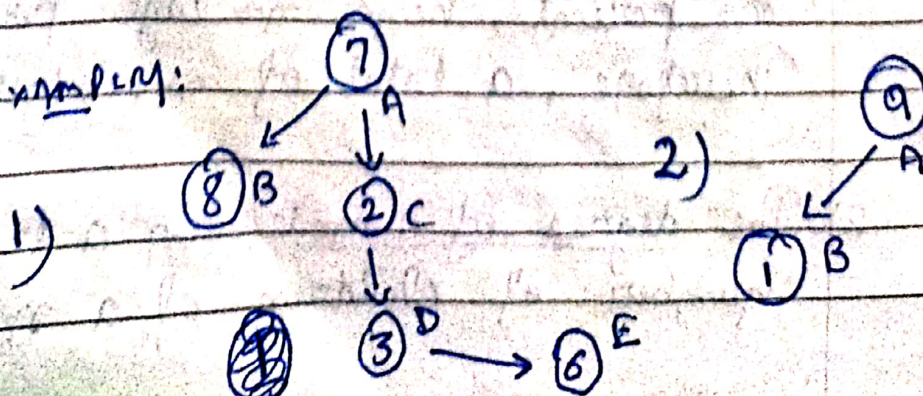


In the above tree, the number of nodes is 9, and hence the number of edges are 8. Moreover, the highest degree of a node is that of the root node, which has 3 children. Hence the degree of the tree is also 3.

## → BINARY TREE

A binary tree is a special type of tree where each node has a degree equal to or less than two which means each node should have at most two children.

Example:





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Example 1 has nodes A, B, C, D, E with degrees  $\{2, 0, 1, 1, 0\}$  respectively which satisfies the conditions for a binary tree. Similarly, Example 2 has nodes A and B, having degrees 1 each, hence a binary tree.