GeeksQuiz

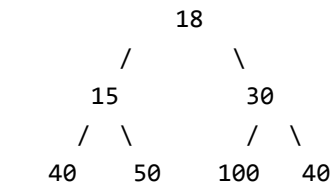
Computer science mock tests for geeks

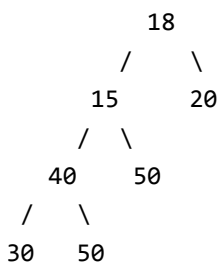
Binary Tree | Set 3 (Types of Binary Tree)

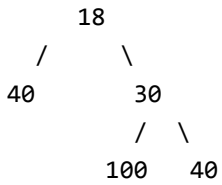
We have discussed Introduction to Binary Tree in set 1 and Properties of Binary Tree in Set 2. In this post, common types of binary is discussed.

Following are common types of Binary Trees.

Full Binary Tree A Binary Tree is full if every node has 0 or 2 children. Following are examples of full binary tree.







1) In a Full Binary, number of leaf nodes is number of internal nodes plus 1

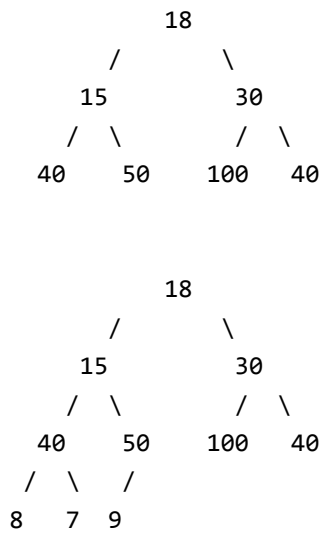
L = I + 1

Where L = Number of leaf nodes, I = Number of internal nodes

See Handshaking Lemma and Tree for proof.

Complete Binary Tree: A Binary Tree is complete Binary Tree if all levels are completely filled except possibly the last level and the last level has all keys as left as possible

Following are examples of Complete Binary Trees



Practical example of Complete Binary Tree is Binary Heap.

Please write comments if you find anything incorrect, or you want to share more information about the topic discussed above

Category: Data Structures

Danish Hasan • 13 days ago

The above definition mentioned for full binary tree is wrong, instead of full binary tree it must be for strict binary tree.
Full binary tree : Each node has exactly two child or zero child and each leaf nodes are at the same level.
Strict Binary tree: Each node has exactly two child or zero child.

Kartik Danish Hasan • 13 days ago

The definition seems correct. Please see http://en.wikipedia.org/wiki/B...