

Tree Problems

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Leetcode **array representation of trees is a sort of level order** but

- until the last node that is not null and

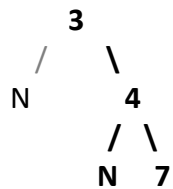
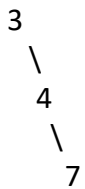
- if a parent is NULL, its children are not listed in the order. See tree: [1, null, 2, 3]

Leetcode allows you to see the tree corresponding to the array in that test case. In the “test case” window, toggle the “tree visualizer” button in the right hand side.

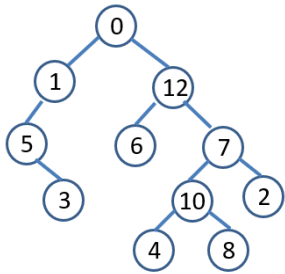
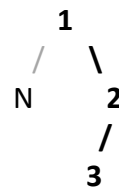
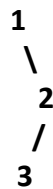
<https://support.leetcode.com/hc/en-us/articles/360011883654-What-does-1-null-2-3-mean-in-binary-tree-representation->

Sample trees:

[3,null, 4,null,7]



[1, null, 2, 3]



Binary trees

[993. Cousins in Binary Tree](#)

[257. Binary Tree Paths](#)

[617. Merge Two Binary Trees](#) (builds a tree; easy)

[563. Binary Tree Tilt](#) (traversal+; easy)

[144. Binary Tree Preorder Traversal](#) (- record data, create array, return array; medium)

Harder problems

- [101. Symmetric Tree](#) - listed as easy, but not easy. Interesting solution both recursive and iterative (with queue).
- [1022. Sum of Root To Leaf Binary Numbers](#) - listed as easy, but I found it harder than 538.

Problems that require a queue (for level order traversal/processing)

- [637. Average of Levels in Binary Tree](#) - easy, but needs a queue.
- [102.Binary Tree Level Order Traversal](#) - easy, but needs a queue.

Binary Search trees

[108. Convert Sorted Array to Binary Search Tree](#)

[98. Validate Binary Search Tree](#) (M)

[95. Unique Binary Search Trees II](#) (M)

[99. Recover Binary Search Tree](#) (M)

<https://leetcode.com/problems/insert-into-a-binary-search-tree/>

<https://leetcode.com/problems/balance-a-binary-search-tree/>

[94. Binary Tree Inorder Traversal](#)

[102. Binary Tree Level Order Traversal](#)

[1008. Construct Binary Search Tree from Preorder Traversal](#)