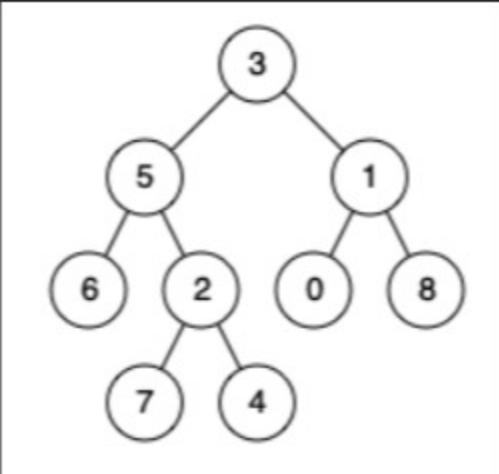# 1676. Lowest Common Ancestor of a Binary Tree IV  Premium

Medium | ◇ Topics | ▣ Companies | ◊ Hint

Given the `root` of a binary tree and an array of `TreeNode` objects `nodes`, return *the lowest common ancestor (LCA) of all the nodes in* `nodes`. All the nodes will exist in the tree, and all values of the tree's nodes are **unique**.
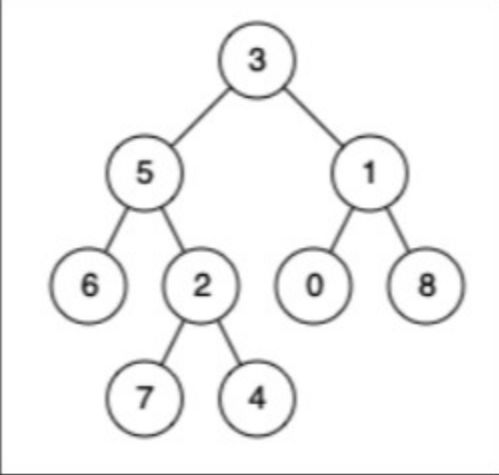
Extending the [definition of LCA on Wikipedia](#): "The lowest common ancestor of $n$ nodes $p_1$, $p_2$, ..., $p_n$ in a binary tree $T$ is the lowest node that has every $p_i$ as a **descendant** (where we allow **a node to be a descendant of itself**) for every valid $i$". A **descendant** of a node $x$ is a node $y$ that is on the path from node $x$ to some leaf node.
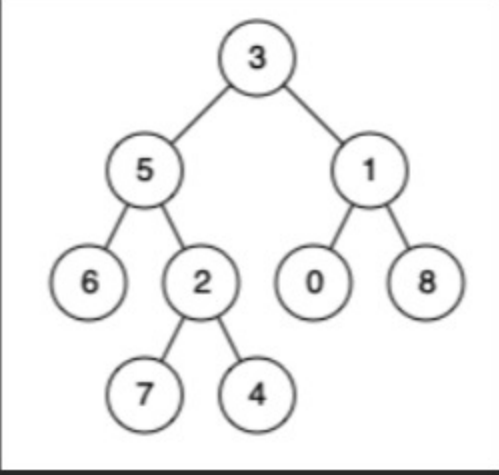
### Example 1:



**Input:** root = [3,5,1,6,2,0,8,null,null,7,4], nodes = [4,7]
**Output:** 2
**Explanation:** The lowest common ancestor of nodes 4 and 7 is node 2.

### Example 2:



**Input:** root = [3,5,1,6,2,0,8,null,null,7,4], nodes = [1]
**Output:** 1
**Explanation:** The lowest common ancestor of a single node is the node itself.

### Example 3:



**Input:** root = [3,5,1,6,2,0,8,null,null,7,4], nodes = [7,6,2,4]
**Output:** 5
**Explanation:** The lowest common ancestor of the nodes 7, 6, 2, and 4 is node 5.

### Constraints:

- The number of nodes in the tree is in the range $[1, 10^4]$.
- $-10^9 <= Node.val <= 10^9$
- All `Node.val` are **unique**.
- All `nodes[i]` will exist in the tree.
- All `nodes[i]` are distinct.

Seen this question in a real interview before?   1/5
Yes   No

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◊ Hint 1

Starting from the root, traverse the left and the right subtrees, checking if one of the nodes exist there.

◊ Hint 2

If one of the subtrees doesn't contain any given node, the LCA can be the node returned from the other subtree

◊ Hint 3

If both subtrees contain nodes, the LCA node is the current node.

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