1261. Find Elements in a Contaminated Binary Tree

Solved ●

Medium Topics Companies Hint

Given a binary tree with the following rules:

1. `root.val == 0`
2. For any `treeNode`:
   1. If `treeNode.val` has a value `x` and `treeNode.left != null`, then `treeNode.left.val == 2 * x + 1`
   2. If `treeNode.val` has a value `x` and `treeNode.right != null`, then `treeNode.right.val == 2 * x + 2`

Now the binary tree is contaminated, which means all `treeNode.val` have been changed to `-1`.

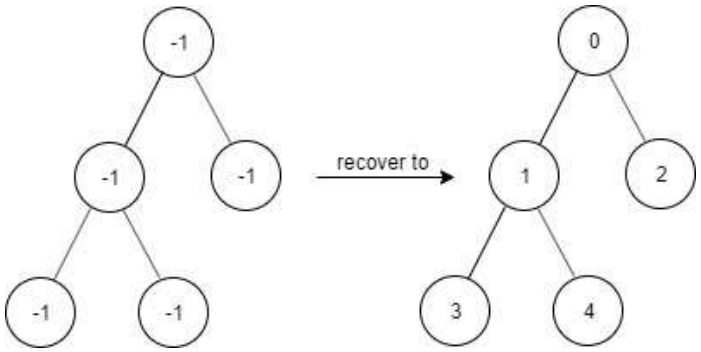
Implement the `FindElements` class:

- `FindElements(TreeNode* root)` Initializes the object with a contaminated binary tree and recovers it.
- `bool find(int target)` Returns `true` if the `target` value exists in the recovered binary tree.

Example 1:

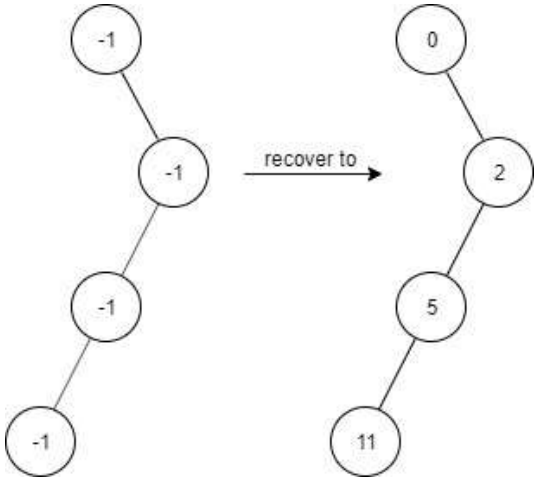
> **Input**
> ["FindElements","find","find"]
> [[[-1,null,-1]],[1],[2]]
> **Output**
> [null,false,true]
> **Explanation**
> FindElements findElements = new FindElements([-1,null,-1]);
> findElements.find(1); // return False
> findElements.find(2); // return True

Example 2:



> **Input**
> ["FindElements","find","find","find"]
> [[[-1,-1,-1,-1,-1]],[1],[3],[5]]
> **Output**
> [null,true,true,false]
> **Explanation**
> FindElements findElements = new FindElements([-1,-1,-1,-1,-1]);
> findElements.find(1); // return True
> findElements.find(3); // return True
> findElements.find(5); // return False

Example 3:



> **Input**
> ["FindElements","find","find","find","find"]
> [[[-1,null,-1,-1,null,-1]],[2],[3],[4],[5]]
> **Output**
> [null,true,false,false,true]
> **Explanation**
> FindElements findElements = new FindElements([-1,null,-1,-1,null,-1]);
> findElements.find(2); // return True
> findElements.find(3); // return False
> findElements.find(4); // return False
> findElements.find(5); // return True

Constraints:

- `TreeNode.val == -1`
- The height of the binary tree is less than or equal to `20`
- The total number of nodes is between `[1, 10^4]`
- Total calls of `find()` is between `[1, 10^4]`
- `0 <= target <= 10^6`

Seen this question in a real interview before? 1/5

Yes No

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Hint 1

Hint 2

Discussion (122)