

2331. Evaluate Boolean Binary Tree

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You are given the **root** of a **full binary tree** with the following properties:

- **Leaf nodes** have either the value **0** or **1**, where **0** represents **False** and **1** represents **True**.
- **Non-leaf nodes** have either the value **2** or **3**, where **2** represents the boolean **OR** and **3** represents the boolean **AND**.

The **evaluation** of a node is as follows:

- If the node is a leaf node, the evaluation is the **value** of the node, i.e. **True** or **False**.
- Otherwise, **evaluate** the node's two children and **apply** the boolean operation of its value with the children's evaluations.

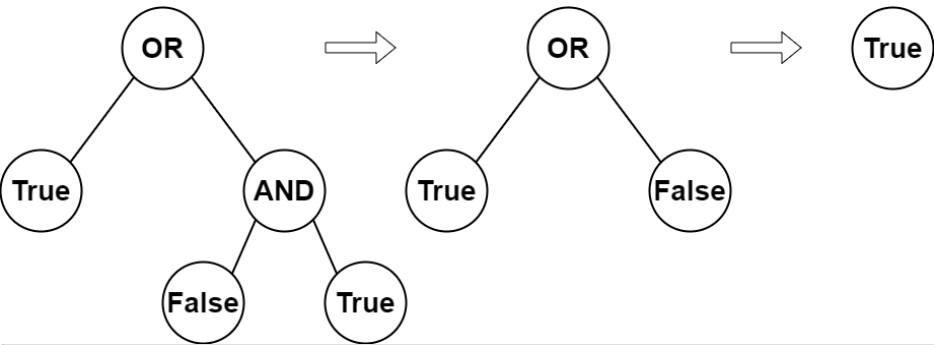
User Accepted:	10300
User Tried:	10722
Total Accepted:	10608
Total Submissions:	13873
Difficulty:	Easy

Return the boolean result of **evaluating** the **root** node.

A **full binary tree** is a binary tree where each node has either **0** or **2** children.

A **leaf node** is a node that has zero children.

Example 1:



Input: root = [2,1,3,null,null,0,1]
Output: true
Explanation: The above diagram illustrates the evaluation process.
The AND node evaluates to False AND True = False.
The OR node evaluates to True OR False = True.
The root node evaluates to True, so we return true.

Example 2:

Input: root = [0]
Output: false
Explanation: The root node is a leaf node and it evaluates to false, so we return false.

Constraints:

- The number of nodes in the tree is in the range [1, 1000].
- 0 ≤ Node.val ≤ 3
- Every node has either 0 or 2 children.
- Leaf nodes have a value of 0 or 1.
- Non-leaf nodes have a value of 2 or 3.

Discuss (<https://leetcode.com/problems/evaluate-boolean-binary-tree/discuss/>)

JavaScript

```
1 const evaluateTree = (root) => dfs(root)
2
3 const dfs = (root) => {
```

```
4     if (!root) return false
5     if (root.val == 1) return true
6     if (root.val == 0) return false
7     if (root.val == 2) return dfs(root.left) | dfs(root.right)
8     if (root.val == 3) return dfs(root.left) & dfs(root.right)
9     return false;
10  };
```

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