

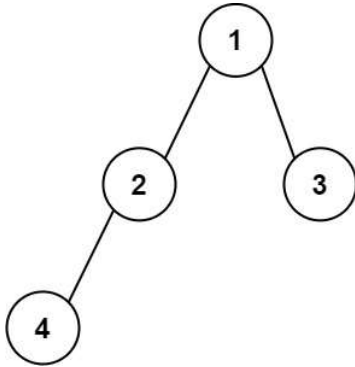
## 606. Construct String from Binary Tree

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Given the `root` of a binary tree, construct a string consisting of parenthesis and integers from a binary tree with the preorder traversal way, and return it.

Omit all the empty parenthesis pairs that do not affect the one-to-one mapping relationship between the string and the original binary tree.

## Example 1:

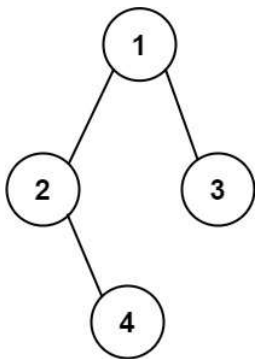


Input: `root = [1,2,3,4]`

Output: `"1(2(4))(3)"`

Explanation: Originally, it needs to be `"1(2(4)())(3())"`, but you need to omit all the unnecessary empty parenthesis pairs. And it will be `"1(2(4))(3)"`

## Example 2:



Input: `root = [1,2,3,null,4]`

Output: `"1(2()(4))(3)"`

Explanation: Almost the same as the first example, except we cannot omit the first parenthesis pair to break the one-to-one mapping relationship between the input and the output.

## Constraints:

- The number of nodes in the tree is in the range  $[1, 10^4]$ .
- $-1000 \leq \text{Node.val} \leq 1000$

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```
1  /**
2   * Definition for a binary tree node.
3   * public class TreeNode {
4   *     int val;
5   *     TreeNode left;
6   *     TreeNode right;
7   *     TreeNode() {}
8   *     TreeNode(int val) { this.val = val; }
9   *     TreeNode(int val, TreeNode left, TreeNode right) {
10    *         this.val = val;
11    *         this.left = left;
12    *         this.right = right;
13    *     }
14    * }
15    */
16    class Solution {
17    *     public String tree2str(TreeNode root) {
18    *
19    *     }
20    }
```