Q).. Check If a String Is a Valid Sequence from Root to Leaves Path in a Binary Tree

Given a binary tree where each path going from the root to any leaf form a valid sequence, check if a given string is a valid sequence in such binary tree.

We get the given string from the concatenation of an array of integers arr and the concatenation of all values of the nodes along a path results in a sequence in the given binary tree.

Program:

```
class TreeNode:
    def __init__(self, val=0, left=None,
right=None):
        self.val = val
        self.left = left
        self.right = right
def isValidSequence(root, arr):
    def dfs(node, index):
        if not node:
            return False
        if index == len(arr) - 1:
            return node.val == arr[index] and not
node.left and not node.right
        if node.val != arr[index]:
            return False
```

```python
        return dfs(node.left, index + 1) or dfs(node.right, index + 1)
    return dfs(root, 0)
root = TreeNode(0)
root.left = TreeNode(1)
root.right = TreeNode(0)
root.left.left = TreeNode(0)
root.left.right = TreeNode(1)
root.right.left = TreeNode(0)
root.right.right = None
root.left.left.left = None
root.left.left.right = None
root.left.right.left = TreeNode(1)
root.left.right.right = TreeNode(0)
arr = [0, 1, 0, 1]
print(isValidSequence(root, arr))
```

Output:

Time complexity:O(n)