

75 Days of Code Day 37 1372. Longest ZigZag Path in a Binary Tree

Type : BST / dfs

You are given the root of a binary tree.

A ZigZag path for a binary tree is defined as follow:

Choose any node in the binary tree and a direction (right or left).

If the current direction is right, move to the right child of the current node; otherwise, move to the left child.

Change the direction from right to left or from left to right.

Repeat the second and third steps until you can't move in the tree.

Zigzag length is defined as the number of nodes visited - 1. (A single node has a length of 0).

Return the longest ZigZag path contained in that tree.

Example 1:

Input: root = [1,null,1,1,1,null,null,1,1,null,1,null,null,null,1]

Output: 3

Explanation: Longest ZigZag path in blue nodes (right -> left -> right).

Example 2:

Input: root = [1,1,1,null,1,null,null,1,1,null,1]

Output: 4

Explanation: Longest ZigZag path in blue nodes (left -> right -> left -> right).

Example 3:

Input: root = [1]

Output: 0

Constraints:

The number of nodes in the tree is in the range [1, $5 * 10^4$].

$1 \leq \text{Node.val} \leq 100$

Solution using DFS

1. Traverse the list with recursion

```

14
15 function longestZigZag(root: TreeNode | null): number {
16     if (!root) return 0;
17
18     let maxZigZag = 0;
19
20     function dfs(node: TreeNode | null, isRight: boolean, currentZigZag: number): void {
21         if (!node) return;
22
23         maxZigZag = Math.max(maxZigZag, currentZigZag);
24
25         if (isRight) {
26             dfs(node.left, false, currentZigZag + 1);
27             dfs(node.right, true, 1); // Reset to 1 when moving right.
28         } else {
29             dfs(node.left, false, 1); // Reset to 1 when moving left.
30             dfs(node.right, true, currentZigZag + 1);
31         }
32     }
33
34     dfs(root, false, 0); // Start with the root node and initial direction is left (false).
35
36     return maxZigZag;
37 };

```

✓ Accepted

Editorial



Runtime

Details

Memory

132 ms

81.52 MB

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