Description	Solution	Discuss (252)	Submissions

1522. Diameter of N-Ary Tree

Medium   👍 503   👎 7   ♡ Add to List   ⌴ Share

Given a `root` of an N-ary tree, you need to compute the length of the diameter of the tree.

The diameter of an N-ary tree is the length of the **longest** path between any two nodes in the tree. This path may or may not pass through the root.

(*Nary-Tree input serialization is represented in their level order traversal, each group of children is separated by the null value.*)
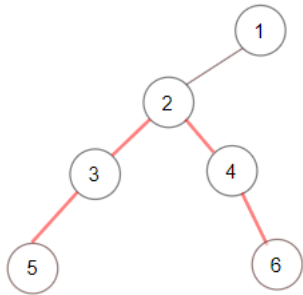
Example 1:
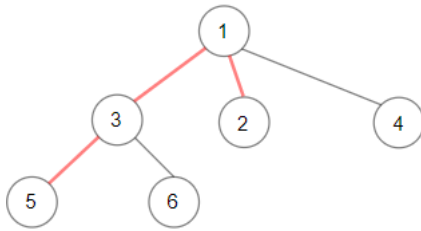

```
Input: root = [1,null,3,2,4,null,5,6]
Output: 3
Explanation: Diameter is shown in red color.
```
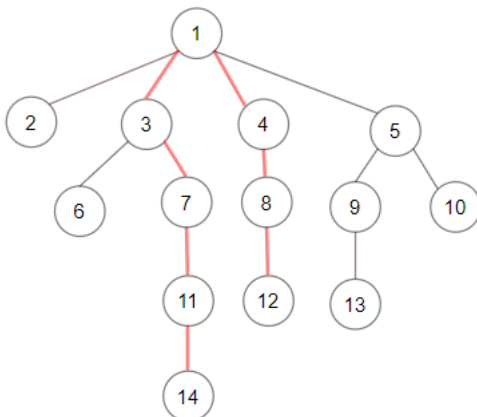
Example 2:


```
Input: root = [1,null,2,null,3,4,null,5,null,6]
Output: 4
```

Example 3:

| C++ ▼ | | Autocomplete | | i | {} | ↺ | ⚙ | ⛶ |

```cpp
/*
// Definition for a Node.
class Node {
public:
    int val;
    vector<Node*> children;

    Node() {}

    Node(int _val) {
        val = _val;
    }

    Node(int _val, vector<Node*> _children) {
        val = _val;
        children = _children;
    }
};
*/

class Solution {
public:
    int diameter(Node* root,int &maxLen)
    {
        int maxi = 0,secondMaxi = 0;
        for(Node* children : root->children)
        {
            int len = diameter(children,maxLen);
            if(len>maxi)
            {
                secondMaxi = maxi;
                maxi = len;
            }
            else if(len>secondMaxi)
            {
                secondMaxi = len;
            }
        }
        maxLen = max(maxLen,maxi+secondMaxi);
        return maxi+1;
    }

    int diameter(Node* root) {
        int maxLen = 0;
        diameter(root,maxLen);
        return maxLen;
    }
};
```

NEW

| Testcase | Run Code Result | Debugger 🔓 | | ⌄ |

Accepted   Runtime: 0 ms   ⑦

Your input	[1,null,2,3,4,5,null,null,6,7,null,8,null,9,10,null,null,

Output	7		Diff

Expected	7

Console...   Use Example ⑦   ▶ Run Code ^   Submit
         Testcases ⌄

☰ Problems	⤬ Pick One	‹ Prev 1522/2509 Next ›