1522. Diameter of N-Ary Tree Premium

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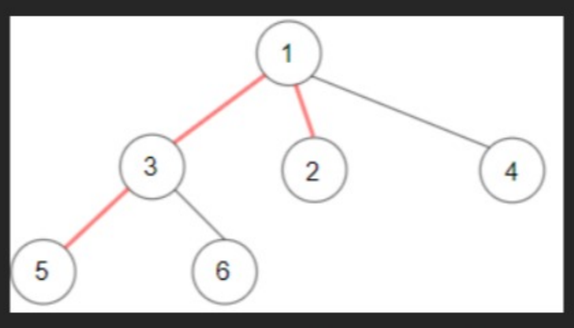
Given a `root` of an `N-ary tree`, you need to compute the length of the diameter of the tree.

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.

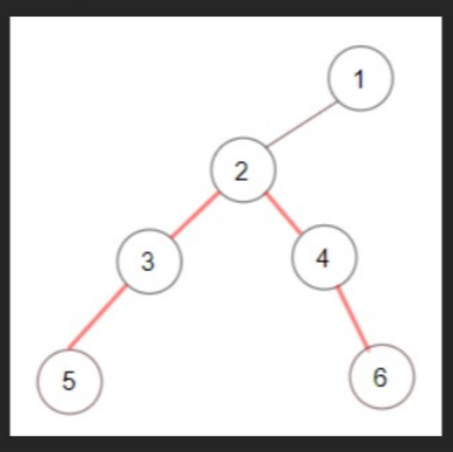
(Nary-Tree input serialization is represented in their level order traversal, each group of children is separated by the null value.)

Example 1:



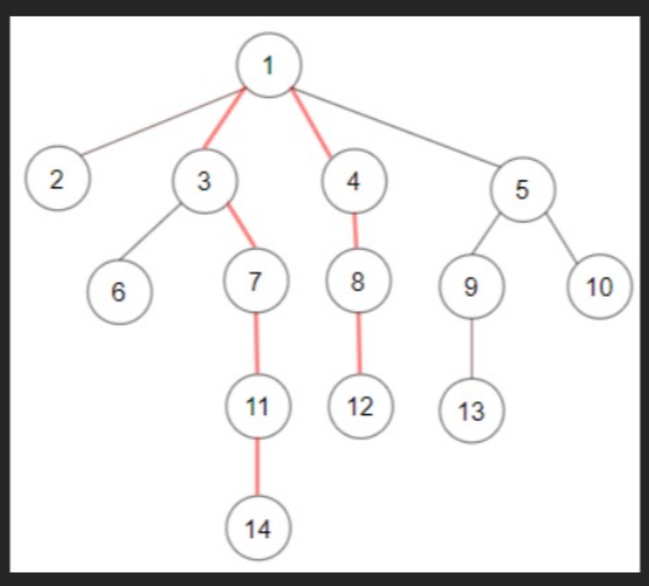

```
Input: root = [1,null,3,2,4,null,5,6]
Output: 3
Explanation: Diameter is shown in red color.
```

Example 2:




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

Example 3:




```
Input: root = [1,null,2,3,4,5,null,null,6,7,null,8,null,9,10,null,null,11,null,12,null,13,null,null,14]
Output: 7
```

Constraints:

- The depth of the n-ary tree is less than or equal to `1000`.
- The total number of nodes is between `[1, 10^4]`.

Seen this question in a real interview before? 1/5

Yes No

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Hint 1

For the node i, calculate the height of each of its children and keep the first and second maximum heights (max1_i , max2_i).

Hint 2

Check all nodes and return max(2 + max1_i + max2_i).

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