Problems

Courses Problem Editorial Submissions Comments

Subtree In N-ary Tree

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Medium Accuracy: **77.56%** Submissions: **17K+** Points: **4**

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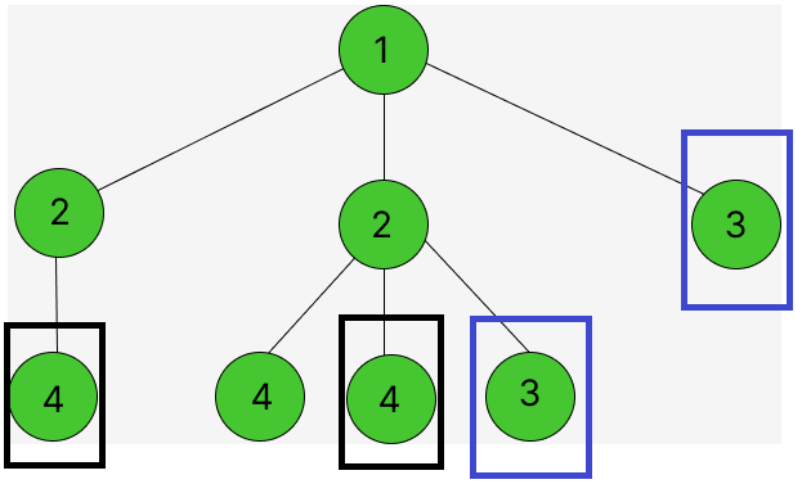
POTD

Given the root of a n-ary tree find the number of duplicate subtrees in the n-ary tree. Two trees are **duplicates** if they have the **same structure** with the **same node values**.

Example 1:

Input:

1 N 2 2 3 N 4 N 4 4 3 N N N N N



Output:

2

Explanation:

[4], [3] are duplicate subtree.

Example 2:

Input:

1 N 2 3 N 4 5 6 N N N N

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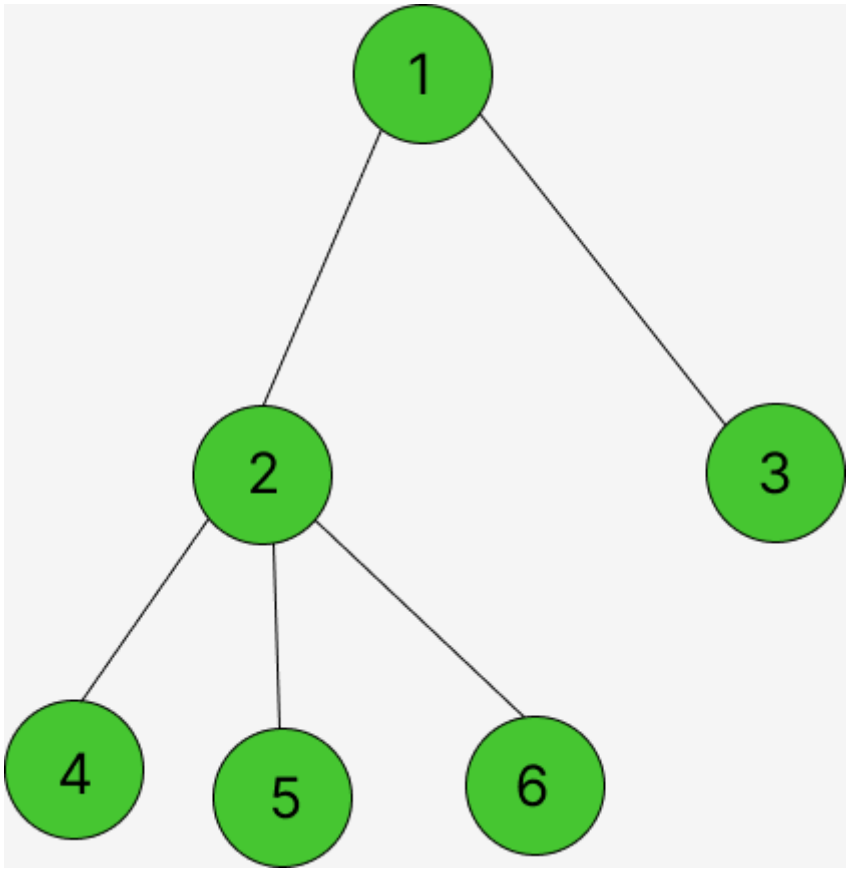

Output:
0

Explanation:
No duplicate subtree found.

Your Task:
You don't need to read input or print anything. Your task is to complete the function duplicateSubtreeNaryTree() which takes the root of the n-ary tree as input and returns an integer value as a number of duplicate subtrees.

Expected Time Complexity: O(n), n is the total no of nodes
Expected Space Complexity: $O(n^2)$

Constraints:
$1 <= n < 10^3$
$1 <= node.key < 10^3$

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```
40  //User function Template for C++
41
42  class Solution{
43  public:
44      int duplicateSubtreeNaryTree(Node *root){
45          // Code here
46           map<vector<int>, int> f;
47
48          function<vector<int>(Node *)> dfs = [&](Node * node) -> vector<int> {
49              vector<int> current = { node -> data, -1 };
50
51              for(auto child : node -> children){
52                  vector<int> next = dfs(child);
53                  for(auto i : next)
54                      current.push_back(i);
55              }
56
57              current.push_back(-1);
58
59              ++f[current];
60
61              return current;
62          };
63
64          dfs(root);
65          int ans = 0;
66
67          for(auto i : f){
68              ans += i.second > 1;
69          }
70
71          return ans;
```

Custom Input Compile & Run Submit

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