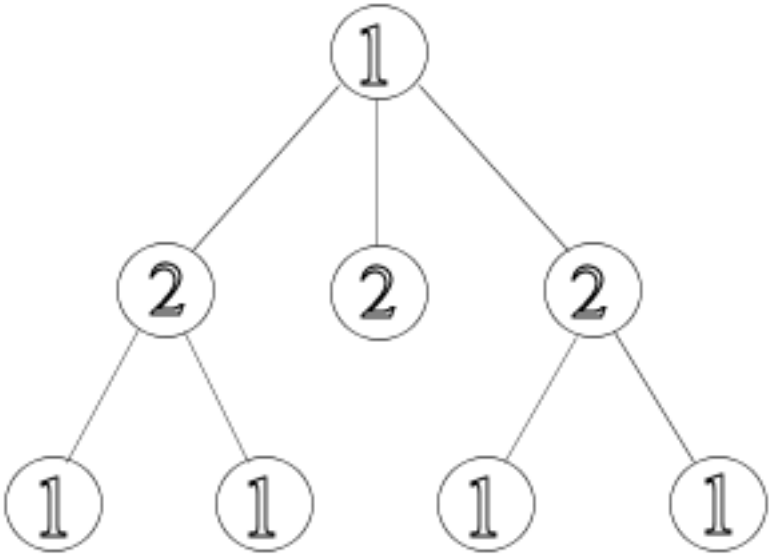
Problem A

ALTERNATIVE ARBORECSENCE

Given a graph, we define "proper coloring" as coloring of the graph nodes in such way that no two adjacent nodes have the same color. If we map each color to a positive integer, we can calculate the sum of all colors assigned to the graph.

In this problem you will be given a tree (connected graph with no simple loops). Can you determine what the minimum color sum can be achieved when the tree is properly colored? (Image to the right shows a proper coloring of the second example tree with sum=11)



Input

The input file consists of several test cases. Each test case starts with n ($1 \le n \le 10000$), the number of nodes in the tree. Next n lines will be of the form "*u: v1 v2 ... vk"* where u is the root of a subtree and vi's are its children ($0 \le u, vi \le n$-1).

Every test case will be followed by a blank line. Input ends with a case n=0, which should not be processed.

Output

For each test case print the minimum sum of colors that can be achieved by some proper coloring of the tree.

Sample Input

```
2
0:
1: 0
```

```
8
0: 1 2 3
1: 4 5
2:
3: 6 7
4:
5:
6:
7:

0
```

Output for the Sample Input

```
3
11
```

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