

### Tree Coloring Submissions Attempted by: 156 | Solved by: 69 | Partially Solved by: 23 | ★★★☆ Algorithms Combinatorics Dynamic Programming Medium Trees ► Edit Problem Editorial My Submissions Analytics

Nam draws a tree in a paper (Note: *tree* here is a sinple connected acyclinaph in Graph theory, not *tree* in reality). The tree consists of **N** nodes. Nam want to makes his a more beautiful. Therefore, he decided to coloring all **N** nodes.

Nam numbering nodes from 1 to N for convinent. He firstly color node 1. Then he will color N - 1 remaining nodes, in any order which satisfied condition: node are chosen to color must be adjacent to one of nodes colored before. Two nodes are consider adjacent if there is a direct edge between them.

Nam wondering, how many ways of coloring the tree he possible make. Two ways are consider different if order of coloring nodes in 2 ways are different, because Nam uses only 1 color.

### Input

The first line is T - the number of test cases. Then T test cases follow.

Each test consists of several lines.

- The first line is N the number of nodes in tree.
- Then the next N 1 lines, each line contains 2 integer u and v (1  $\leq u$ ,  $v \leq N$ ), denoting there is a direct edge between node u and node v. It is guaranteed that these edges form a tree.

### Output

For each test, print the number of ways coloring the tree in a single line. Since this number can very large, you must print it modulo  $10^9 + 7$ .

### **Constraints**

- 1 ≤ **T** ≤ 10
- 1 ≤ **N** ≤ 100000

### Sample Input (Plaintext Link)

3

- 1 2 1 3
- 4
- 1 2
- 2 3

1 4

### Sample Output (Plaintext Link)

1

2

3

### **Explanation**

In the first test, there is only 1 order of coloring the tree, that is (1, 2, 3). In the second test, there are 2 orders of coloring the tree, they are (1, 2, 3) and (1, 3, 2). In the third test, there are 3 orders of coloring the tree, they are (1, 2, 3, 4), (1, 2, 4, 3) and (1, 4, 2, 3).

Time Limit: 2 sec(s) for each input file.

Memory Limit: 256 MB Source Limit: 1024 KB

Marking Scheme: Marks are awarded if any testcase passes.

Allowed languages: C, CPP, CLOJURE, CSHARP, GO, HASKELL, JAVA, JAVASCRIPT, JAVASCRIPT\_NODE, LISP,

OBJECTIVEC, PASCAL, PERL, PHP, PYTHON, RUBY, R, RUST, SCALA

Problem Author: Vuong Nguyen

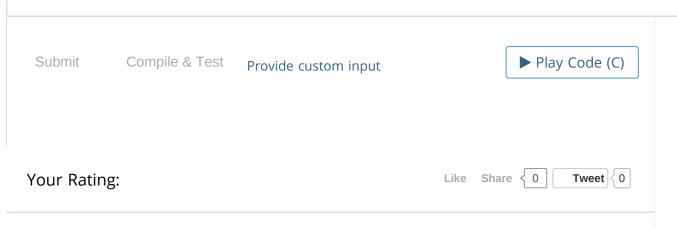
Problem Tester: Anta

```
#include <stdio.h>

int main()

fraction of the state of the stat
```

1



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User	Result	Time	Lang
Shakil A		2.3989	C++
Shakil A		2.376	C++
Shakil A		9.2519	C++
Shakil A		0.0	C++
vipul sh		4.1306	C++
Sunil Va		3.3372	C++
Anarbek		25.3736	Java
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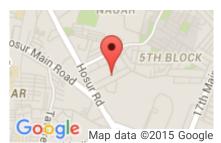
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