Project 2: Counting Leaves

A family hierarchy is usually presented by a pedigree tree. Your job is to count those family members who have no child.

Input Specification:

Your program must read test cases from the standard input.

The input consists of several test cases, each starts with a line containing 0 < N < 100, the number of nodes in a tree, and M (< N), the number of non-leaf nodes. Then M lines follow, each in the format:

```
ID K ID[1] ID[2] ... ID[K]
```

where ID is a two-digit number representing a given non-leaf node, K is the number of its children, followed by a sequence of two-digit ID's of its children. For the sake of simplicity, let us fix the root ID to be 01.

The input ends with N being 0. That case must NOT be processed.

Output Specification:

Output to the standard output. For each test case, you are supposed to count those family members who have no child ***for every seniority level*** starting from the root. The numbers must be printed in a line, separated by a space, and there must be no extra space at the end of each line.

For example, the first sample case represents a tree with only 2 nodes, where 01 is the root and 02 is its only child. Hence on the root 01 level, there is 0 leaf node; and on the next level, there is 1 leaf node. Then we should output "0 1" in a line.

Sample Input:

```
2 1
01 1 02
1 0
7 4
01 2 02 03
06 1 07
02 2 04 05
03 1 06
0 0
```

Sample Output:

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

Grading Policy:

This assignment is due Wednesday, October 9th, 2013 at 10:00pm.

- **Programmer:** Write the program **(50 pts.) with sufficient comments**.
- **Tester:** Provide a set of test cases to fill in a test report **(20 pts.)**. Note that the tester is responsible, as well as the programmer is, for any bug later found by Judge. Write analysis and comments **(10 pts.)**.
- **Report Writer:** Write Chapter 1 **(6 pts.)**, Chapter 2 **(12 pts.)**, and finally a complete report **(2 pts. for overall style of documentation)**.