微软2016校园招聘在线笔试 已经报名

已经结束

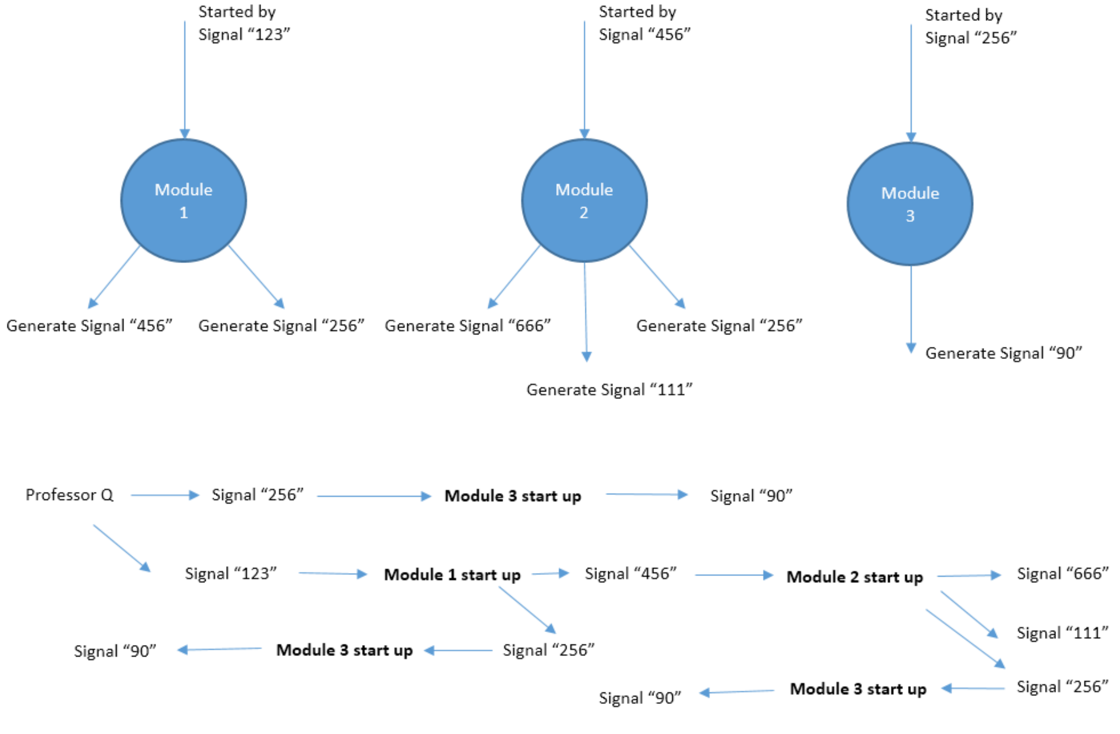
报名人数：3025

题目2 : Professor Q's Software

时间限制：10000ms
单点时限：1000ms
内存限制：256MB

描述

Professor Q develops a new software. The software consists of N modules which are numbered from 1 to N. The i-th module will be started up by signal S_i. If signal S_i is generated multiple times, the i-th module will also be started multiple times. Two different modules may be started up by the same signal. During its lifecircle, the i-th module will generate K_i signals: E_1, E_2, ..., E_{K_i}. These signals may start up other modules and so on. Fortunately the software is so carefully designed that **there is no loop in the starting chain of modules**, which means eventually all the modules will be stoped. Professor Q generates some initial signals and want to know how many times each module is started.



In the end, Module 1 starts up for 1 times, Module 2 starts up for 1 times, Module 3 starts up for 3 times,

输入

The first line contains an integer T, the number of test cases. T test cases follows.

For each test case, the first line contains contains two numbers N and M, indicating the number of modules and number of signals that Professor Q generates initially.

The second line contains M integers, indicating the signals that Professor Q generates initially.

Line 3~N + 2, each line describes an module, following the format S, K, E_1, E_2, ... , E_K. S represents the signal that start up this module. K represents the total amount of signals that are generated during the lifecircle of this module. And E_1 ... E_K are these signals.

For 20% data, all N, M <= 10
For 40% data, all N, M <= 10^3
For 100% data, all 1 <= T <= 5, N, M <= 10^5, 0 <= K <= 3, 0 <= S, E <= 10^5.

Hint: HUGE input in this problem. Fast IO such as scanf and BufferedReader are recommended.

输出

For each test case, output a line with N numbers Ans_1, Ans_2, ... , Ans_N. Ans_i is the number of times that the i-th module is started. In case the answers may be too large, output the answers modulo 142857 (the remainder of division by 142857).

样例输入

```
3
3 2
123 256
123 2 456 256
456 3 666 111 256
256 1 90
3 1
100
100 2 200 200
200 1 300
200 0
5 1
1
1 2 2 3
2 2 3 4
3 2 4 5
4 2 5 6
5 2 6 7
```

样例输出

```
1 1 3
1 2 2
1 1 2 3 5
```

Emacs Normal Vim

GCC ▾

提交