Problem I. Intergalactic tourism

Source file name:	`I.c, I.cpp, I.java, I.py2, I.py3`
Input:	`Standard`
Output:	`Standard`
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Now is year 4018 and we have a lot of technological advances, a lot of them related to space and time travelling. The main technology that enables space and time travelling are transporters, basically you can stand on a transporter and be transported in no time to any planet that you decide, this makes intergalactic tourism (travelling to planets) something really easy as you can go and travel to planets without wasting time.

Given all the commodities it is now a must to do intergalactic tourism, the complex thing is that the transporters have restrictions established that will not allow you to travel to planet X unless you have travelled before to all planets that restrict access to planet X. For example if the planets that restrict access to planet 2 are planets 1 and 3 you should visit planets 1 and 3 before the transporter gives you access to travel to planet 2.

You found based on the transporters restriction that there may be more than one way to visit all the N planets in the planetary system, you want to find all of them.

Can you find given the list of planets you must visit before visiting each planet all the different ways you can visit the N planets considering that on each way you will be visiting each planet only once?

Input

The first line contains a single integer T with the number of test cases. Each of the test cases start with a line with the number N the number of planets in the planetary system. Each of the next N start with an integer number R_i the number of planets that restrict access to this planet followed by R_i numbers representing the planets that restrict access to this planet, all numbers in the line are separated by a space.

- $1 \leq T \leq 10$
- $3 \leq N \leq 10$
- $0 \leq R_i \leq N - 1$
- Planets are numbered from 0 to $N - 1$
- It is guaranteed that there is always at least one way to visit all planets.

Output

For each test case print all the ways you could visit planets based on the restrictions mentioned above. Print them in lexicographical order this is: Given two different ways of visiting the planets, $a_1, a_2 \dots a_k$ and $b_1, b_2 \dots b_k$, the first one is smaller than the second one for the lexicographical order, if $a_i < b_i$, for the first i where a_i and b_i differ.

Example

Input	Output
3 3 0 0 2 0 1 3 0 0 1 1 6 2 4 5 2 3 4 1 5 1 2 0 0	0 1 2 1 0 2 0 1 2 1 0 2 1 2 0 4 5 0 2 3 1 4 5 2 0 3 1 4 5 2 3 0 1 4 5 2 3 1 0 5 2 3 4 0 1 5 2 3 4 1 0 5 2 4 0 3 1 5 2 4 3 0 1 5 2 4 3 1 0 5 4 0 2 3 1 5 4 2 0 3 1 5 4 2 3 0 1 5 4 2 3 1 0