Day 1 - Problem 3 - Lying fishermen

Fishermen at Lake Ohrid are famous liars. They lie about the size, the species about the fishes they have caught. Suppose that there are n fishermen (numbered 1 to n) and the same number of fishes in the lake, each fish being from a different species (numbered from 1 to n). Each fisherman caught exactly one fish. But since they are famous liars, along with the one they actually caught, they report additional fish spices. Can you determine who caught which fish? Your task is to report the fishermen you are sure that caught the certain fish (not necessarily for all the fishermen).

Input

The first line contains the number of fishermen n ≤ 30, followed by n lines one for each fisherman (i-th line for the i-th fishermen). Each line contains several integers – the identification numbers of the fishes reported to be caught by that fishermen. The sequence of integers in each line will be terminated with 0.

Output

The output should consist of all possible pairs of fisherman and fish specie they caught, for which you are sure. Each pair should be outputted to separate line in ascending order of the identification number of the fishermen. In every line the first number is the identification number of the fisherman and the second one represents the identification number of the fish specie caught by that certain fishermen. If there there are no such pairs the output should consist of a single line with value -1.

Input	Output
4 1 2 4 0 1 3 0 1 2 3 0 3 0	1 4 2 1 3 2 4 3
Input	Output
2 1 2 0 1 2 0	-1
Input	Output
3 1 2 0 1 2 0 1 2 3 0	3 3