

Problem A. Mall

Input file: *standard input*
 Output file: *standard output*
 Time limit: 1 second
 Memory limit: 256 mebibytes

Byton has been sent by his parents to a nearby shopping mall to buy m products from the list, numbered 1 through m . As he loves shopping, he plans to visit every shop in the mall, each of them exactly once. Byton is going to visit the shops in some order and in some of them, he will buy some products from the list that he has not bought yet.

As you can guess, some products may be available in multiple different shops. Unfortunately, Byton is a bit paranoid – he fears random security checks very much. Therefore, he would like to avoid an awkward situation in which he enters a shop that sells a product that he has already purchased somewhere else.

Can you find a strategy of visiting all the shops and buying products, which will allow Byton to avoid awkward situations with security guards?

Input

The first line of the input contains two integers n, m ($1 \leq n, m \leq 1000$) – the number of shops in the mall and the number of products Byton needs to buy, respectively. The next n lines describe shops in the mall; the i -th of them describes the i -th shop. Each description begins with a number k_i ($1 \leq k_i \leq m$) denoting the number of products of Byton's interest available in the i -th shop. Then, k_i integers, each between 1 and m , follow in ascending order. Each of them denotes a product from Byton's list.

Output

If there does not exist a correct strategy of shopping, you should output a single word **NO**. Otherwise, the first line of the output should contain the word **YES**. The second line of the output should contain n distinct integers ranging from 1 to n – the order of shops visited by Byton. The last, third line should contain m integers ranging from 1 to n ; the i -th of them indicates the shop in which Byton should buy the product i . If there are multiple solutions, output any of them.

Example

standard input	standard output
4 4	YES
1 2	1 2 3 4
2 2 4	4 2 3 2
2 1 3	
1 1	

Note

First, Byton should go to shop 1, not buying anything. Then, he should go to shop 2 and buy the products 2 and 4. Next, he can buy product 3 in shop 3 and finally buy product 1 in shop 4.