DMOPC '16 Contest 2 P2 - Ebola Outbreak

Time limit: 0.3s
Java 8: 1.0s
Python: 3.0s

Memory limit: 64M
Python: 1G

It is recently discovered that someone in **lolzballs**'s school has contracted Ebola (an extremely dangerous viral disease). The school administrators were frightened that more people would become infected and decided to isolate those who are potentially infected. They reached out to **lolzballs** to help them resolve their dilemma.

There are a total of N people in **lolzballs**'s school, numbered 1 to N. There are a total of M classes, and the i^{th} class has a size of K_i. Each person can be part of 0 or more classes. Initially, the person numbered 1 is infected with Ebola.

A person is deemed potentially infected if:

1. The person is already infected
2. The person has class with the infected person
3. The person has class with someone that is potentially infected

Please write a program to help **lolzballs** determine who is potentially infected.

Constraints

For all subtasks:

$1 \leq \sum K_i, K_i < 10^6$

Subtask 1 [80%]

$1 \leq N, M \leq 100$

Subtask 2 [20%]

$1 \leq N, M \leq 10^5$

Input Specification

On the first line of the input are 2 integers N and M.

This line is followed by M lines which describe each class.

Every line begins with an integer K_i ($K_i \leq N$), which represents the number of students in that class. K_i integers follow, indicating the people in the i^{th} class.

Output Specification

Output the number of potentially infected people on the first line of the output.

On the second line, please output the sorted list of potentially infected people, separated by a space.

Sample Input

```
9 4
3 1 2 3
4 2 3 4 5
3 6 7 8
2 3 9
```

Sample Output

```
6
1 2 3 4 5 9
```