

CS Exam

Sameer is preparing for his CS Exam. The exam will be based on topic “Computer Networks”. Each topic has a list of prerequisite that needs to be learned before learning the actual topic itself. The list can be empty as well. He made a study plan by finding out the minimum number of topics he needs to learn and in which order he needs to learn them.

As he is fickle-minded, instead of actually studying, he started to think about the problem of creating a study plan for any given topic. Unfortunately, he couldn't solve this problem so he needs your help.

Given the number of topics, list of prerequisites for each topic, and a target topic. Print the order in which he should learn the topics. The number of topics in this learn should be as small as possible. Note that it is guaranteed that a solution always exists.

Input Format:

The first line contains a single integer, **N** - the number of topics

The next **N** lines contain a single integer **A[i]** signifying the number of prerequisites of ith topic followed by **A[i]** integers denoting the prerequisites.

Next line contains a single integer **T** - the target topic.

If multiple solutions exist then print the lexicographically smallest one.

Note: No topic is a prerequisite of itself.

Output Format:

Print all the topics of the study plan in the order that they should be studied.

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Constraints:

$$1 \leq N \leq 100000$$

$$0 \leq A[i] \leq 100$$

Sample Input:

2

0

1 1

2

Sample Output:

1 2