Problem H
Heroic Heist
Time limit: 3 seconds

It is the night before the grand opening of a new art gallery. The gallery consists of n rooms, numbered from 1 to n. The rooms are organized sequentially, with room 1 being connected by a door to room 2, and room 2 being connected to room 3, and so on. Each room has a door that leads into it from the preceding room. That door is either locked or unlocked. If the door is unlocked, the room will contain a key. Otherwise, it will not contain a key.

To enter a room with a locked door, you must use a key that is compatible. Each key can open a subset of the doors. The gallery uses a special lock and key system to deter thieves. A key can only be used once, since a locked door will consume any key used to open it.

You start in the first room, which is guaranteed to contain a key, and would like to enter as many rooms as possible. The more rooms you can enter, the more paintings you can… admire.

Assuming you use keys optimally, what is the maximum number of rooms you can enter?

Input

The first line contains a single integer n ($2 \leq n \leq 300$), which is the number of rooms.

The next n lines describe the rooms in the gallery in order. Each of these lines contains either:

- A single integer, $0 < x < n$, if that room contains a key. Then, x integers, listing the numbers of rooms that contain locked doors that the key can open. No room will appear more than once in this list.

- A single integer, 0, if that room has a locked door from the preceding room.

The first room is guaranteed to have $x > 0$.

Output

Display the maximum number of rooms you can enter.

Sample Input 1	Sample Output 1
7 3 2 6 7 0 2 2 7 2 5 6 0 0 0	5

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