

Problem ID: denise

After a long day of looking at boats in a Japanese coastal city, you and your friends arrive back at the hotel, preparing to go to bed. However, you soon notice something is wrong: Denise is gone! Where is she? Could she be lost and all alone in a foreign country?

This is bad.

Panicking, you run out of the hotel and start yelling in the streets.

“Denise! DENISE!”

Where could she be?!

Denise, notorious boat thief, is going for a walk on one of the best islands in the world: Tashirojima. It is also known as *Cat Island* because of its large population of stray cats – in fact, there are more cats than humans! However, Denise doesn’t believe that all parts of Tashirojima are equally beautiful. Instead, she has assigned unique *beauty values* to all places of interest marked on her map. Naturally, there are also some bi-directional paths on the island, each one connecting two places of interest to one another.

Now, Denise plans her walk in a rather simple way: Whenever she finds herself in one of the places of interest marked on her map, she first makes sure to pet all the cats inhabiting that place. Then she compares it to all the other places it is directly connected to. If her current position is more beautiful than all of them, she stops. Otherwise, she checks which of those other places has the highest beauty value, and continues her walk along the path leading her there.



Cats in Tashirojima

Photo by Sayoko Shimoyama

Now, obviously, one question remains: How many cats will Denise pet on this walk?

Input

The input consists of:

- One line with the integer n ($1 \leq n \leq 100$), the number of places of interest.
- One line with n integers $b_1, \dots, b_n$ ($1 \leq b_i \leq n$ for each i), the i th value giving the beauty value of the i th place of interest.
- One line with n integers $c_1, \dots, c_n$ ($0 \leq c_i \leq 10\,000$ for each i), the i th value giving the number of cats inhabiting the i th place of interest.
- n lines, each with an integer m_i ($0 \leq m_i \leq 100$) giving the number of paths connecting the i th place of interest to other places, followed by m_i integers $p_{i,1}, \dots, p_{i,m_i}$ ($1 \leq p_{i,j} \leq n$ for each j) giving the indices of those other places in increasing order.

Denise’s initial position is the place of interest with index 1. No two places share the same beauty value. There is never more than one path connecting the same two places, but each path is given in both directions. No path connects a place to itself. The total number of unique paths does not exceed 1 000.

Output

Print a single integer: the number of cats Denise will pet on her walk.

Sample Input 1

```
3
1 2 3
1 10 1
2 2 3
2 1 3
2 1 2
```

Sample Output 1

```
2
```

Sample Input 2

```
3
1 2 3
1 10 1
1 2
2 1 3
1 2
```

Sample Input 3

```
3
2 1 3
1 10 1
1 2
2 1 3
1 2
```

Sample Output 2

```
12
```

Sample Output 3

```
1
```