6: Associated Associations

Level: Average
Time limit: 0.25 seconds

Although it seems the study year has only just begun, the university is already preparing promotion for students that wish to start their studies next year. As part of this promotion, they have decided to show off the many study associations that are part of the university. To do so, they wish to collect all the logos of all the associations and put them together on a giant board.

To represent the logo of an association, the university has two choices:

1. Buy a bucket of paint for each colour in the logo
2. Buy a premade flag of the logo

However, with the recent budget cuts of the government, they want to be sure they are acting as cost-efficient as possible. For example, if every logo were a simple combination of white and blue (like the beautiful **via** logo), they could simply buy 1 bucket of white and 1 bucket of blue paint. Can you help the university figure out what the minimum amount of money is that they will have to spend?

Every flag and bucket of paint has a fixed cost of 1 euro (don't ask them where they got such good deals). In total, there are N associations that the university wishes to represent. Of these N logos, there is a total of M unique colours. For each logo, it is known how many colours it has and which exactly these are.

Input

The input starts with one line with integers N and M ($1 \leq N \leq 1000, 1 \leq M \leq 100$). Next, $2N$ lines follow, two for each logo. Each logo starts with an integer C ($1 \leq C \leq M$) on one line, followed by a line containing C integers (the colours of the logo).

Output

Output a single integer: The minimum cost for the university to represent every study association.

Sample input 1

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

Sample output 1

```
2
```

Sample input 2

```
4 5
2
1 2
2
1 2
2
1 2
3
3 4 5
```

Sample output 2

```
3
```