

# Card Collectors

Input file:            **standard input**  
Output file:         **standard output**  
Time limit:          2 seconds  
Memory limit:       256 megabytes

Your group of  $n$  friends have been playing a popular trading card game for many years. There are  $m$  types of cards available in the game (numbered 1 to  $m$ ), and each person's collection contains some of the card types. A person may have all or none of the card types, but no-one has multiple copies of any type of card in their collection.

A **full set** is a set of cards containing exactly one copy of each of the  $m$  card types. You want to make full sets using your friend group's cards, potentially using cards from multiple people's collections. How many full sets can be made?

## Input

The first line of input consists of two space-separated integers  $n$  ( $1 \leq n \leq 10,000$ ) and  $m$  ( $1 \leq m \leq 100$ ), representing the number of friends and the number of types of cards in the game respectively.

$n$  lines follow, each describing one friend's collection. The  $i$ th such line begins with an integer  $s_i$  ( $0 \leq s_i \leq m$ ), representing the number of cards in this collection, followed by  $s_i$  distinct space-separated integers  $a_{i,1}, \dots, a_{i,s_i}$  ( $1 \leq a_{i,j} \leq m$ ) representing the type of each card in this collection.

## Output

Print a single integer, the largest number of full sets that can be made.

## Examples

standard input	standard output
4 5 2 1 4 5 2 3 1 4 5 0 4 1 2 5 3	2
8 2 0 1 2 1 2 2 2 1 1 1 2 2 1 2 1 2 1 2	4
5 5 1 1 1 2 1 2 1 4 1 5	0

## Note

In the first sample case, your group has 4 friends and there are 5 types of cards in the game. You can make 2 full sets:

- The first set can be made using cards 1 and 4 from the first friend, and cards 2, 3, and 5 from the last friend.
- The second set can be made using the cards from the second friend.

In the second sample case, you can make 4 full sets:

- The fourth, sixth and seventh friend's collections are each already a full set.
- A fourth set can be made by using card 1 from the fifth friend and card 2 from the second friend.

In the third sample case, there are 5 cards in the game. However, nobody in the friend group has card 3. Therefore, no full sets can be made from your collections.