

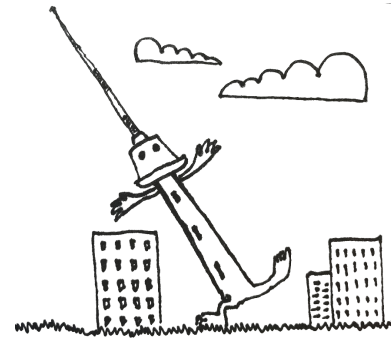


April Fools

On April Fools Day newspapers like to fool their readers by publishing false and usually absurd facts. For example, a fact stating that today Vilnius television tower was brought down by wind.

You are given a range of facts which were published by each of the N different newspapers. These facts are denoted by natural numbers from 1 to F . For example:

- Newspaper 1: 1, 2, 5
- Newspaper 2: 2, 3, 4
- Newspaper 3: 1, 6



You also know that this April Fools Day *each of the newspapers published exactly one false fact*.

Task. Find the smallest and the biggest number of false facts that could have been published today.

Input. The first line of the input contains two integer numbers separated by a space: the number of newspapers N and the number of facts F .

Facts published by each of the newspapers are described on the remaining $2N$ lines.

On the $2i$ th line there is given the number k_i – it is the number of facts published by the i th newspaper ($1 \leq k_i \leq F$).

On the $(2i + 1)$ th line there are given k_i integer numbers f_{ij} separated by spaces, $1 \leq f_{ij} \leq F$, $f_{ij} < f_{i(j+1)}$. All of the facts from 1 to F are published at least once by at least one of the newspapers.

Output. On the first and only line, output two numbers separated by space: the smallest and the biggest number of false facts that could have been published that day.

Examples.

Input	Output	Comments
3 6 3 1 2 5 3 2 3 4 2 1 6	2 3	There could not have been only one false fact published since there is no single fact that was published by all of the three newspapers. Therefore, at least two false facts could have been published: 1 and 3, or 2 and 6. At most, there could have been three false facts published. For example: 4, 5 and 6.



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Subtasks. The following constraints will be valid for all tests $1 \leq N \leq 200$, $1 \leq F \leq 20$.

No.	Points	Constraints
1	20	$F \leq 3$
2	20	$N \leq 3$
3	60	No additional constraints