

Problem 5 – Singing Cats



Look at this sad cat. She and her cat friends have cat concert tomorrow evening. They need your help!

Each cat knows some songs (don't ask what are their songs like... mostly mew mew mew mew...)

There are **C** cats (numbered from 1 to **C**) and **S** songs (numbered from 1 to **S**).

You are given the songs each cat knows.

They are very very lazy cats so help them to **find the minimal number of songs that cats must sing in the concert so that every cat will sing at least one song**. If no solution is available print "No concert!". View the examples for clarification.

Input

The input data should be read from the console.

On the first line there will be the string "C cats" where **C** is the number of cats.

On the second line there will be the string "S songs" where **S** is the number of songs.

On each of the next lines (except the last one) there will be a string in format "Cat X knows song Y" which means that cat with number **X** knows the song with number **Y**.

On the last input line there will be the string "Mew!"

The input data will always be valid and in the format described. There is no need to check it explicitly.

Output

The output data should be printed on the console.

On the only output line print the minimal number of songs that cats must sing in the concert so that every cat will sing at least one song. If no solution is available print "No concert!".

Constraints

- **C** will be an integer number between 1 and 30, inclusive.
- **S** will be an integer number between 1 and 10, inclusive.
- Allowed working time for your program: 0.1 seconds.
- Allowed memory: 16 MB.

Examples

Example input	Example output	Explanation
3 cats 2 songs Cat 2 knows song 2 Cat 1 knows song 1 Cat 3 knows song 1 Cat 2 knows song 1 Mew!	1	If they only sing the first song, all cats will be singing in the concert because all 3 cats can sing the first song.
3 cats 3 songs	3	All songs must be sing in order for all the cats to sing in the concert.

Cat 1 knows song 1 Cat 2 knows song 2 Cat 3 knows song 3 Mew!		
2 cats 2 songs Cat 1 knows song 1 Mew!	No concert!	

Mew!