After having watched all eight Harry Potter movies in a week, Nikola finally realized how the famous Elder Wand changes the wizard it obeys. If wizard *A*, whom the wand is currently obeying, is defeated by wizard *B* in a duel, then the wand will start obeying the wizard *B*.

Nikola is now wondering what would happen if 26 wizards labeled with upper case letters of the English alphabet from "A" to "Z" began fighting in duels for the fondness of the Elder Wand. If we know the label of the wizard that the wand had obeyed before all duels and the outcomes of all *N* duels that were held one after another, answer the following questions:
   1. Which wizard did the wand obey after all *N* duels?
   2. How many different wizards did the wand obey?

INPUT

The first line contains an uppercase letter of the English alphabet, the label of the wizard that the wand obeyed at the beginning.

The second line contains an integer number *N* ($1 \leq N \leq 100$), the number of duels from the text of the task.

In the next *N* rows there are two different uppercase letters of the English alphabet *Z1* and *Z2* separated by a space, whereas the wizard with the label *Z1* defeated the wizard with the label *Z2* in the ith duel.

OUTPUT

In the first line print an uppercase letter of the English alphabet, answer to the first question from the task description.

In the second line print an integer number, answer to the second question from the task description.

SCORING

Correct answer to the first question is worth 2 points and the correct answer to the second question is worth 3 points. If you do not know how to solve some part of the task, then print any value in the corresponding line.

SAMPLE TESTS

input	input	input
A	N	X
3	5	4
B A	D A	A X
C B	N B	B X
D A	B A	X A
	C D	D A
	F A	

output	output	output
C	N	X
3	1	2

Clarification of the first sample:
Before the first duel, the Elder Wand obeyed wizard A. After the first duel, it obeyed wizard B, and after the second wizard C. The third duel didn't change anything.