

Problem L

Memory Match

Problem ID: memorymatch

CPU Time limit: 1 second

Memory limit: 1024 MB

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You are playing the game “Memory Match”.

This game revolves around a set of N picture cards. The cards are organized in pairs: there are $N/2$ different pictures, each picture occurring on exactly two cards.

At the beginning of the game, the cards are shuffled and laid face down on the table. Players then take turns in guessing a pair of cards with the same picture. Each turn consists of picking a face-down card and turning it over to reveal its picture, then picking another face-down card and turning that card over as well. If the pictures on the two turned cards are identical, the cards remain face-up, the player scores a point and may take another turn. If the pictures are different, both cards are turned face-down again and the turn goes to the next player.

It is now your turn! Given a description of all previous actions in the game, pick as many matching pairs as possible.

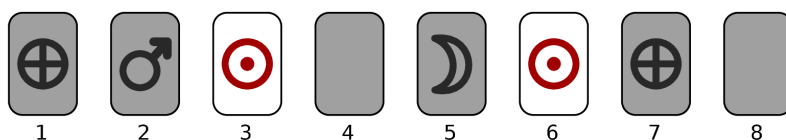


Figure 1: Illustration of the first example input. Only cards 3 and 6 have been matched correctly, all other cards are face-down. How many pairs can you score?

Input

The first line contains an even integer N , the number of cards on the table ($2 \leq N \leq 1000$).

The second line contains an integer K , the number of turns played thus far in the game ($0 \leq K \leq 1000$).

The following K lines each describe a turn. A turn is described by integers C_1 and C_2 followed by words P_1 and P_2 . The numbers C_1 and C_2 refer to card positions on the table ($1 \leq C_1, C_2 \leq N$ and $C_1 \neq C_2$). The words describe the pictures on the two selected cards. Each word consists of between 1 and 20 lowercase letters in range ‘a’ ... ‘z’. If $P_1 = P_2$, the two cards stay face-up and the corresponding positions C_1 and C_2 may not be chosen again.

The input is such that at least two cards are still in face-down position.

Output

Output one line with an integer S , the number of matching pairs you can score with certainty.

Sample Input 1

```
8
5
1 3 earth sun
2 6 mars sun
6 3 sun sun
7 5 earth moon
2 7 mars earth
```

Sample Output 1

```
3
```

Sample Input 2

```
10
6
1 2 moon earth
9 10 venus sun
8 7 moon venus
1 8 moon moon
4 10 sun sun
9 6 venus mars
```

Sample Output 2

```
3
```

Sample Input 3

```
8
2
1 3 moon earth
2 6 sun earth
```

Sample Output 3

```
1
```