



## USACO 2022 DECEMBER CONTEST, PLATINUM PROBLEM 2. MAKING FRIENDS

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English (en) ▾

**\*\*Note: the time limit for this problem is 3s, 50% larger than the default. The memory limit is twice the default.\*\***

There are initially  $M$  ( $1 \leq M \leq 2 \cdot 10^5$ ) pairs of friends among FJ's  $N$  ( $2 \leq N \leq 2 \cdot 10^5$ ) cows labeled  $1 \dots N$ . The cows are leaving the farm for vacation one by one. On day  $i$ , the  $i$ -th cow leaves the farm, and all pairs of the  $i$ -th cow's friends still present on the farm become friends. How many new friendships are formed in total?

### INPUT FORMAT (input arrives from the terminal / stdin):

The first line contains  $N$  and  $M$ .

The next  $M$  lines contain two integers  $u_i$  and  $v_i$  denoting that cows  $u_i$  and  $v_i$  are friends ( $1 \leq u_i, v_i \leq N$ ,  $u_i \neq v_i$ ). No unordered pair of cows appears more than once.

### OUTPUT FORMAT (print output to the terminal / stdout):

One line containing the total number of new friendships formed. Do not include pairs of cows that were already friends at the beginning.

### SAMPLE INPUT:

```
7 6
1 3
1 4
7 1
2 3
2 4
3 5
```

### SAMPLE OUTPUT:

```
5
```

On day 1, three new friendships are formed: (3, 4), (3, 7), and (4, 7).

On day 3, two new friendships are formed: (4, 5) and (5, 7).

### SCORING:

- Test cases 2-3 satisfy  $N \leq 500$ .
- Test cases 4-7 satisfy  $N \leq 10^4$ .
- Test cases 8-17 satisfy no additional constraints.

Problem credits: Benjamin Qi

Contest has ended. No further submissions allowed.

