Mobile Notifications AZ101

? Ask Doubt

Time-Limit: 1 sec Score: 0.00/100 Difficulty :

Memory: 256 MB Accepted Submissions: 100

Description

You recently bought a new mobile phone. There are N applications in the phone and all generate notifications. There are 3 types of events

1. 1 X - A new notification is generated by application X
2. 2 X - You read all notifications by application X, you may re-read some notifications
3. 3 Y - You read the first Y notifications in the phone. Note that you don't read the first Y unread notifications, you just read the first Y notifications and you might re-read a few notifications. It is guaranteed that there have been Y notifications before this.

After every event, find the number of unread notifications in the mobile phone.

Input Format

The first line of the input contains one integer T - the number of test cases. Then T test cases follow.

The first line of each test case contains two space-separated integers N Q - the number of applications and the number of queries.

Each of the next Q lines contains two space-separated integers Z X or Z Y - the description of each event.

Output Format

For each test case, find the number of unread notifications in the mobile phone after every event.

Constraints

$1 \le T \le 10^5$

$1 \le N, Q \le 10^5$

$1 \le Z \le 3$

$1 \le X \le N$

$1 \le Y \le Q$

It is guaranteed that the sum of N and the sum of Q over all test cases does not exceed 10^6.

Sample Input 1

Copy

```
2
3 4
1 1
1 3
```

C++14[GCC]

Submit

```
1
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