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E. Physical Education Lessons

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

This year Alex has finished school, and now he is a first-year student of Berland State University. For him it was a total surprise that even though he studies programming, he still has to attend physical education lessons. The end of the term is very soon, but, unfortunately, Alex still hasn't attended a single lesson!

Since Alex doesn't want to get expelled, he wants to know the number of working days left until the end of the term, so he can attend physical education lessons during these days. But in BSU calculating the number of working days is a complicated matter:

There are n days left before the end of the term (numbered from 1 to n), and initially all of them are working days. Then the university staff sequentially publishes q orders, one after another. Each order is characterised by three numbers l , r and k :

- If $k = 1$, then all days from l to r (inclusive) become non-working days. If some of these days are made working days by some previous order, then these days still become non-working days;
- If $k = 2$, then all days from l to r (inclusive) become working days. If some of these days are made non-working days by some previous order, then these days still become working days.

Help Alex to determine the number of working days left after each order!

Input

The first line contains one integer n , and the second line — one integer q ($1 \leq n \leq 10^9$, $1 \leq q \leq 3 \cdot 10^5$) — the number of days left before the end of the term, and the number of orders, respectively.

Then q lines follow, i -th line containing three integers l_i , r_i and k_i representing i -th order ($1 \leq l_i \leq r_i \leq n$, $1 \leq k_i \leq 2$).

Output

Print q integers. i -th of them must be equal to the number of working days left until the end of the term after the first i orders are published.

Example

input
4
6
1 2 1
3 4 1
2 3 2
1 3 2
2 4 1
1 4 2
output
2
0
2

Educational Codeforces Round 36 (Rated for Div. 2)

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest](#)

→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

[Clone Contest](#)

→ Submit?

Language: GNU G++14 6.4.0

Choose file: [Choose File](#) No file chosen
[Submit](#)

→ Problem tags

[data structures](#) [implementation](#)
[sortings](#)

No tag edit access

→ Contest materials

- Announcement



3
1
4

• Tutorial



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