shirts

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1.5 seconds
Memory limit:	256 megabytes

The trainers of December Course 2024 are arranging participants into N groups, numbered 1 to N, placed in a row. For simplicity, each participant in group i initially wears a shirt of color i.

The trainers can issue commands to modify group shirt colors or check specific color statistics. They provide Q commands in total, which must be processed in the given order. Commands are of the following two types:

- 1 x c: Change the shirt color of trainee x and all connected trainees (trainees reachable by moving through adjacent groups with the same shirt color) to color c.
- 2 c: Report how many trainees are currently wearing shirts of color c.

Input

The first line of input contains two integers, N and Q

Then follows Q lines, each describing a query.

Each query is in one of the following formats:

- 1 x c
- 2 c

as described above.

Output

Let q be the number of type 2 queries.

Print q lines, where the i-th line contains the answer to the i-th type 2 query.

Scoring

For all testcases it is guaranteed that

- $1 \leq N, Q \leq 3 \times 10^5$
- $1 \leq x, c \leq N$
- There is at least one query of type 2.
- All input values are integers.

Subtask	Score	Additional constraints
1	10	There will be no queries of type 1.
2	30	$1 \leq N, Q \leq 10^4$
3	60	No additional constraints.

Example

standard input	standard output
5 6 1 5 4 1 4 2 2 2 1 3 2 1 2 3 2 3	3 4

Note

For the sample testcase:

At the beginning, the shirts are like so
(1, 2, 3, 4, 5)
After the first query, (Change trainee 5's shirt to colour 4)
(1, 2, 3, 4, 4)
After the second query, (Change trainee 4's shirt to colour 2)
(1, 2, 3, 2, 2)
For the third query, output number of trainees wearing a shirt of colour 2
There are 3 students wearing a shirt of colour 2
After the fourth query, (Change trainee 3's shirt to colour 2)
(1, 2, 2, 2, 2)
After the fifth query, (Change trainee 2's shirt to colour 3)
(1, 3, 3, 3, 3)
For the sixth query, output number of trainees wearing a shirt of colour 3
There are 4 students wearing a shirt of colour 3