
Project Teams

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

Students in the GUC form teams for projects before the beginning of the semester.

Everyone wants to invite his friends to his team. Everyone in the team has the right to invite any number of students to the team as long as the total number of students in the team won't exceed the limit.

METians decided to make a program to make it easier for every student to check the number of students in his team at any moment of time.

The program can handle two queries:

- 1 $s_i s_j$: Student s_i invited all the members of the team that student s_j belongs to.
- 2 s_i : Student s_i wants to know the number of members in his team so far including himself.

Input

The first line contains two integers n, q ($1 \leq n, q \leq 10^5$) — the numbers of students in the GUC, the number of queries, respectively.

Then q lines follow, each describing a query. The i^{th} line will have one of the following formats:

- 1 $s_i s_j$
- 2 s_i

where $1 \leq s_i, s_j \leq n$.

Output

For each query of the format 2 s_i , print a single line with the number of members in student s_i 's team so far.

Examples

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