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## C. Addition and First element at least X

time limit per test: 1 second memory limit per test: 1024 megabytes input: standard input output: standard output

There is an array of n elements, initially filled with zeros. You need to write a data structure that processes two types of queries:

- add v to all elements on the segment from l to r-1,
- find the minimum index j such that  $j \geq l$  and  $a[j] \geq x$ .

## Input

The first line contains two numbers n and m ( $1 \le n, m \le 100000$ ), the size of the array and the number of operations. The following lines contain the description of the operations. The description of each operation is as follows:

- 1 l r v: add v to all elements on the segment from l to r-1 ( $0 \le i < n$ ,  $0 \le v \le 10^4$ ).
- 2 x l: find the minimum index j such that  $j \ge l$  and  $a[j] \ge x$  ( $0 \le x \le 10^9$ ,  $0 \le l < n$ ). If there is no such element, print -1.

Indices start from 0.

## Output

For each operation of the second type, print the answer for the query.

## **Example**

input	Сору
5 7	
1 2 5 3	
1 1 3 4	
2 3 0	
2 5 0	
1 4 5 5	
2 5 3	
2 8 1	
output	Сору
1	
2	
4	
4	

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