Putting Strings

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	256 megabytes

Among all the assistants Dictator S has, Assistant Y is no doubt the assistant he is most fond of. Hence, he decided to give her some presents for her upcoming birthday. He has N empty boxes which is numbered 1 to N from left to right. Then, for every box he will either put 1 string or 1 orange inside it, so that there will be **exactly** 1 object in every box.

Assistant Y is picky. Luckily, Dictator S knows about the Q conditions that must be satisfied in order for Assistant Y to be happy about the presents. Every condition i consists of 3 integers l_i, r_i and x_i. $(0 \leq x_i \leq 1)$

- If x_i is 0, then the total number of **strings** from l^{th} to r^{th} boxes inclusively must be even.
- If x_i is 1, then the total number of **strings** from l^{th} to r^{th} boxes inclusively must be odd.

Note that oranges are just a placeholder and there are no conditions limiting the number of oranges in the boxes.

Help Dictator S find 1 valid way to put strings and oranges in the boxes, such that all the conditions are satisfied!

Input

- The first line of the input contains 2 integers N and Q, the number of boxes and number of conditions respectively.
- For the next Q lines, the i^{th} line will contain 3 integers l_i, r_i and x_i, which describes a condition.

Output

If it is impossible to satisfy all the conditions, output -1.

Otherwise, output any valid way in the form of N space-separated integers. The i^{th} integer is 0 if you decide to put an orange at the i^{th} box or 1 if you put a string.

Scoring

For all testcases, it is guaranteed that

- $1 \leq N, Q \leq 10^6$
- $1 \leq l_i \leq r_i \leq N$
- $0 \leq x_i \leq 1$

Subtask	Score	N	Additional Constraints
1	7	$1 \leq N, Q \leq 17$	-
2	10	-	(sum of all (r_i - l_i + 1)) <= 17
3	3	-	The conditions do not intersect.
4	10	-	$l_i = 1$ ($1 \leq i \leq N$)
5	30	$1 \leq N, Q \leq 2000$	-
6	40	-	-
7	0	Sample Testcases	

Examples

standard input	standard output
4 3 1 4 1 1 2 1 2 4 1	0 1 1 1
8 3 2 7 0 1 6 1 1 7 1	1 1 0 0 0 1 0 1
4 3 1 2 0 3 4 0 1 4 1	-1