Task 2: `Lost Array`

Rar the Cat has an array X of N positive integers. He is a teacher and he wants to give his students a homework based on his array. The students in his class had learnt the `min` function, and Rar would like to test them on this. He have already set M homework questions, and all of them are of this form:

$$\min(X_i, X_j) \ = ?$$

Unfortunately, Rar has lost his array! Given the M homework questions, as well as the answer key, help Rar to reconstruct a possible array that matches all of his homework answers. Such an array is guaranteed to exist.

Input

Your program must read from standard input.

The first line of the input will contain 2 numbers, N and M.

The next M lines of input will contain 3 numbers, A_i, B_i, and C_i. For all $i = 1, 2, ..., M$, $\min(X_{A_i}, X_{B_i}) = C_i$.

Output

Output N numbers in a single line (separated by spaces), the array X. If multiple solutions exist, all of them will be accepted. All elements of X must be between 1 and 10^9 (inclusive).

Subtasks

The maximum execution time on each instance is 1.0s. For all testcases, the input will satisfy the following bounds:

- $1 \leq N, M \leq 10^5$
- $1 \leq A_i, B_i \leq N$
- $A_i \neq B_i$
- $1 \leq C_i \leq 10^9$

Your program will be tested on input instances that satisfy the following restrictions:

Subtask	Marks	Additional Constraints
1	5	$N = 2, M = 1$
2	6	$M \leq 3$
3	20	$N, M \leq 1000$
4	21	$C_i \leq 10, N \leq 5$
5	48	-

Sample Testcase 1

This testcase is valid for all subtasks.

Input	Output
2 1 2 1 7	9 7

Sample Testcase 1 Explanation

The reconstructed array satisfies the given constraints:

- $\min(X_2, X_1) = \min(7, 9) = 7$

Sample Testcase 2

This testcase is valid for subtasks 3, 4 and 5.

Input	Output
5 6 1 2 1 3 5 4 1 5 3 1 3 3 2 3 1 2 4 1	3 1 4 1 5

Sample Testcase 2 Explanation

The reconstructed array satisfies the given constraints:

- $\min(X_1, X_2) = \min(3, 1) = 1$

- $\min(X_3, X_5) = \min(4, 5) = 4$
- $\min(X_5, X_1) = \min(5, 3) = 3$
- $\min(X_1, X_3) = \min(3, 4) = 3$
- $\min(X_3, X_2) = \min(4, 1) = 1$
- $\min(X_4, X_2) = \min(1, 1) = 1$

Sample Testcase 3

This testcase is valid for subtasks 3 and 5.

Input	Output
5 1 1 2 123	123 1000000000 3 4 26311337

Sample Testcase 3 Explanation

The only condition for the array is that $\min(X_1, X_2) = 123$, the rest of the array can be any value between 1 and 10^9.