

## D. Two Options

*Limits: 2 sec., 512 MiB*

You are given two integers  $n$  and  $m$ , and  $m$  triplets of integers  $(i, j, x)$ , where  $1 \leq i < j \leq n, 1 \leq x \leq n$ .

Permutation  $p = (p_1, p_2, \dots, p_n)$  of integers  $1, 2, \dots, n$  is *good* if for **all**  $m$  given triplets  $(i, j, x)$ , it holds that either  $p_i = x$  or  $p_j = x$ .

Calculate the number of good permutations, and print the answer modulo  $10^9 + 7$ .

### Input

The first line contains two integers  $n$  and  $m$  – the size of the permutation  $p$  and the number of triplets.

The next  $m$  lines contain three integers  $i, j$ , and  $x$ , describing the triplets.

### Output

Print a single number – the number of good permutations modulo  $10^9 + 7$ .

### Constraints

$2 \leq n \leq 10^6$ ,  
 $1 \leq m \leq 10^6$ ,  
 $1 \leq i < j \leq n$ ,  
 $1 \leq x \leq n$ ,  
 all the triplets are pairwise distinct.

### Samples

Input ( <i>stdin</i> )	Output ( <i>stdout</i> )
<pre>4 4 1 2 1 1 3 1 2 3 2 2 3 3</pre>	2
<pre>4 7 1 2 1 1 3 1 1 4 1 1 2 2 2 3 2 2 4 2 3 4 4</pre>	2

### Notes

In the first sample,  $n = 4, m = 4$ . Good permutations must satisfy all of the following conditions.

- $p_1 = 1$  or  $p_2 = 1$ .

- $p_1 = 1$  or  $p_3 = 1$ .
- $p_2 = 2$  or  $p_3 = 2$ .
- $p_2 = 3$  or  $p_3 = 3$ .

There are two good permutations: (1, 2, 3) and (1, 3, 2).

In the second sample, the good permutations are (1, 2, 3, 4) and (1, 2, 4, 3).