Magic Forest

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

The forest contains N meadows, numbered from 1 to N. There are M trails, numbered from 1 to M. Trail i connects meadows a_i and b_i, and has a magical value c_i. A walk starts at a meadow and visits a number of meadows by traversing trails, arriving at a meadow. The walk might visit the same meadow multiple times. The length of the walk is the number of traversed trails.

A walk of length k is a *magical walk*, if the magical values of the traversed trails in order are $m_1, m_2, \ldots, m_k$, and:

- $k \geq 1$,
- $m_i + 1 = m_{i+1}$ for all $1 \leq i \leq k - 1$.

Two *magical walks* are different if the sequences of traversed trails are different.

Write a program that calculates the number of different *magical walks* modulo $10^9 + 7$!

Input

The first line contains the integers N ($2 \leq N \leq 5 * 10^5$) and M ($1 \leq M \leq \min\left(\frac{N(N-1)}{2}, 10^6\right)$).

The following M lines contains three integers a_i, b_i and c_i ($1 \leq a_i \neq b_i \leq N$ for each trail; $1 \leq c_i \leq 10^9$ for each trail) representing a trail between trees a_i and b_i with a magical value of c_i.

Any pair of meadows is connected by at most one trail.

For tests worth 7 points: $a_i = i$ and $b_i = i + 1$ for all trails and $M = N - 1$.

For tests worth 9 points: $c_i \leq 3$ for all trails.

For tests worth 14 points: $N \leq 22$ and $M \leq 22$.

For tests worth 20 points: $N \leq 1000$ and $M \leq 5000$.

For tests worth 50 points: No additional limitations.

Output

You need to write a single line with an integer: the number of *magical walks* modulo $10^9 + 7$.

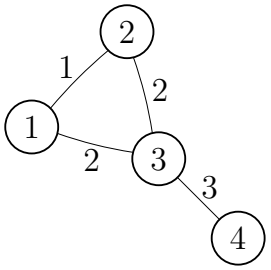
Examples

standard input	standard output
4 4 1 2 1 2 3 2 3 4 3 1 3 2	10
4 3 1 3 3 3 4 2 3 2 1	5
3 3 1 2 1 2 3 2 3 1 3	6

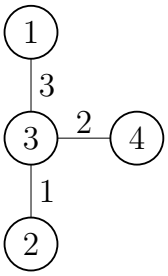
Note

In the **first sample case** the 10 *magical walks* are:

- length of 1: $1-2$, $2-3$, $3-1$, $3-4$,
- length of 2: $1-2-3$, $2-1-3$, $2-3-4$, $1-3-4$,
- length of 3: $1-2-3-4$, $2-1-3-4$.



In the **second sample case** there are 3 *magical walks* of length 1, and 2 of length 2.



In the **third sample case** there are 3 *magical walks* of length 1, and 2 of length 2 and 1 of length 3.