Problem A. Odd Discount

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

In the store of ICPCCamp, there are n items to be sold with m bundles offered.

The i-th bundle is described by c_i and k_i **distinct** integers $a_{i,1}, a_{i,2}, \dots, a_{i,k_i}$. It means that one gets c_i dollars discount if among the $a_{i,1}, a_{i,2}, \dots, a_{i,k_i}$-th items, he buys exactly odd number of them. Bundles can be combined.

Bobo wants to buy a non-empty subset of the items. It is clear there are $(2^n - 1)$ different sets for him. Find out $(d_1^2 + d_2^2 + \cdots + d_{2^n-1}^2)$ modulo $(10^9 + 7)$ where d_i is the sum of discount for the i-th set.

Input

The first line contains 2 integers n, m $(1 \le n \le 20, 1 \le m \le 10^5)$.

The i-th of the following m lines contains integers c_i, k_i, followed by k_i integers $a_{i,1}, a_{i,2}, \dots, a_{i,k_i}$ $(1 \le c_i \le 10^4, 1 \le a_{i,1}, a_{i,2}, \dots, a_{i,k_i} \le n)$.

Output

An integer denotes $(d_1^2 + d_2^2 + \cdots + d_{2^n-1}^2)$ modulo $(10^9 + 7)$.

Examples

standard input	standard output
2 2 1 1 1 2 2 1 2	14
1 1 1 1 1	1

Note

In the first sample, there are 3 possibilities for Bobo.

- He buys the first item and uses both bundles.
- He buys the second item and uses the second bundle solely.
- He buys both items and uses the first bundle.

Therefore, $d_1 = 3, d_2 = 2, d_3 = 1$ and $d_1^2 + d_2^2 + d_3^2 = 14$.