Problem G Permutation

bobo has a permutation $p_1, p_2, \ldots, p_n$ of $1, 2, \ldots, n$.

Knowing m extra constraints of form $p_{a_i} < p_{b_i}$, bobo wanna count the number of different permutations modulo $(10^9 + 7)$.

It is guaranteed that there is at least one such permutation.

Input

The first line contains n, m $(1 \leq n \leq 36, 0 \leq m \leq 18)$. Each of the following m lines contain 2 integers a_i, b_i $(1 \leq a_i, b_i \leq n)$.

Output

A single number denotes the number of permutations.

Sample input 1

```
3 1
1 2
```

Sample output 1

```
3
```

Sample input 2

```
3 2
1 2
2 3
```

Sample output 2

```
1
```