

## Problem H. Requirement

OS Linux

There are  $n$  variables and  $m$  requirements. Requirements are represented as  $(x \leq y)$ , meaning that the  $x^{th}$  variable must be less than or equal to the  $y^{th}$  variable.

Your task is to assign non-negative numbers smaller than **10** to each variable and then calculate the number of different assignments satisfying all requirements. Two assignments are different if and only if at least one variable is assigned to a different number in both assignments. Print your answer modulo  $10^3 + 7$ .

### Input Format

The first line contains **2** space-separated integers,  $n$  and  $m$ , respectively. Each of the  $m$  subsequent lines contains **2** space-separated integers describing the respective  $x$  and  $y$  values for an  $(x \leq y)$  requirement.

### Constraints

- $0 < n < 14$
- $0 < m < 200$
- $0 \leq x, y < n$

### Output Format

Print your answer modulo  $10^3 + 7$ .

Input	Output
6 7 1 3 0 1 2 4 0 4 2 5 3 4 0 2	1000

### Explanation o

There are **6** variables and **7** requirements.

Let the variables be in the array  $a[6]$ .

Requirements are -

$$a[1] \leq a[3], a[0] \leq a[1], a[2] \leq a[4], a[0] \leq a[4], a[2] \leq a[5], a[3] \leq a[4], a[0] \leq a[2]$$

One of the assignments is -  $\{1, 2, 3, 4, 5, 6\}$

Similarly there are **25168** assignments possible.

Result = **25168 mod 1007 = 1000.**