Problem G. もう何も恐くない

Time limit 1500 ms
Memory limit 512MB

Problem Description

Given an $n \times n$ chessboard with k obstacles, calculate the number of ways to place any number of kings (including none) such that no king is on an obstacle, and no two kings can attack each other. The result should be given modulo 998244353.

Input format

The first input line has two integers n ($1 \leq n \leq 24$) and k ($0 \leq k \leq n^2$).

The next k lines each contain two numbers x, y ($1 \leq x, y \leq n$) representing an obstacle at position (x, y). It is guaranteed that all positions are distinct.

Output format

Print one integer, modulo 998244353.

Subtask score

Subtask	Score	Additional Constraints
1	5	$n \leq 4$
2	5	$n \leq 5$
3	60	$n \leq 9$
4	5	$n \leq 12$
5	5	$n \leq 15$
6	5	$n \leq 18$
7	5	$n \leq 21$
8	5	$n \leq 23$
9	5	No constraints

Sample

Sample Input 1

```
3 0
```

Sample Output 1

```
35
```

Sample Input 2

```
4 2
2 2
3 3
```

Sample Output 2

```
254
```

Notes