Problem I

Inversion

Input File: standard input
Output File: standard output
Time Limit: 0.1 seconds (C/C++)
Memory Limit: 256 megabytes

A sequence $p_1, p_2, \ldots, p_n$ is called a permutation of n numbers $1, 2, \ldots, n$ if any number in the range $[1, n]$ occurs exactly once in it. The pair (i, j) of integers in the range 1 to n is called an inversion if $i < j$ and $p_i > p_j$.

Let's call an inversion graph a graph which has exactly n vertices and there is and an edge between the pair (i, j) if and only if this pair is an inversion.

A set s of vertices of a graph is called independent if no two vertices from this set have an edge between them. A set t of vertices of a graph is called dominant if every vertice which does not belong to the set has an edge between at least one vertice which belongs to it. A set g of vertices of a graph is called independent-dominant if it is both dominant and independent.

You have an inversion graph of a particular permutation $1, 2, \ldots n$ which is defined with pairs of vertices (a_i, b_i) which have an edge between them. Find the number of independent-dominant sets of the graph.

It is guaranteed that the answer does not exceed 10^{18}.

Input

The first line contains two integers n and m ($1 \leq n \leq 100$, $0 \leq m \leq \frac{n\times(n-1)}{2}$) — the number of vertices of the graph and the number of edges in the graph.

Each of the next m lines contains two integers u_i and v_i ($1 \leq u_i, v_i \leq n$), which means that there is an edge between u_i and v_i.

It is guaranteed that there exists a permutation that gives this graph.

Output

Print out the number of independent-dominant sets of vertices of the graph.

It is guaranteed that the answer does not exceed 10^{18}.

Sample input	Sample output
4 2 2 3 2 4	2
5 7 2 5 1 5 3 5 2 3 4 1 4 3 4 2	3
7 7 5 6 2 3 6 7 2 7 3 1 7 5 7 4	6
5 6 1 3 4 5 1 4 2 3 1 2 1 5	5

Note

The first sample is graph for permutation $[1, 4, 2, 3]$. We can select two sets of nodes: $(1, 3, 4)$ or $(1, 2)$.
The second sample is graph for permutation $[3, 5, 4, 1, 2]$. We can select three sets of nodes: $(1, 2), (1, 3), (4, 5)$.
The third sample is a graph for permutation $[2, 4, 1, 5, 7, 6, 3]$.
The fourth sample is a graph for permutation $[5, 2, 1, 4, 3]$.