Rikka with Game Theory

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	512 megabytes

Game theory is an interesting subject in computer science.

SG function is an important concept in game theory. Given a directed acyclic graph G_1 with vertex set V_1 and directed edge set E_1, for each vertex $u \in V_1$, its SG function $sg(u)$ is defined as:

$$sg(u) = \text{mex}(\{sg(v)|(u,v) \in E_1\})$$

where given a set S of non-negative integers, $\text{mex}(S)$ is defined as the smallest non-negative integer which is not in S.

Today, Rikka wants to generalize SG function to undirected graphs. Given an undirected graph G with vertex set V and undirected edge set E, a function f over V is a valid SG function on G if and only if:

- For each vertex $u \in V$, $f(u)$ is a non-negative integer;
- For each vertex $u \in V$, $f(u) = \text{mex}(\{f(v)|(u,v) \in E\})$.

Under this definition, there may be many valid SG functions for a graph. Therefore, Rikka wants to further figure out whether there is a connection between these valid SG functions. As the first step, your task is to calculate the number of valid SG functions for a given undirected graph G.

Input

The first line contains two integers n, m ($1 \le n \le 17, 0 \le m \le \frac{n(n-1)}{2}$), representing the number of vertices and edges in the graph.

Then m lines follow. Each line contains two integers u_i, v_i ($1 \le u_i, v_i \le n$), representing an edge in the graph.

The input guarantees that there are no self-loops and duplicate edges in the graph.

Output

Output a single line with a single integer, representing the number of valid SG functions.

Example

standard input	standard output
5 4 1 2 2 3 3 4 4 5	6

Note

For simplicity, we use list $[f(1), \ldots, f(n)]$ to represent a function f.

For the sample input, there are 6 valid SG functions:

- $[0,1,0,1,0]$, $[0,1,2,0,1]$, $[0,2,1,0,1]$, $[1,0,1,0,1]$, $[1,0,1,2,0]$ and $[1,0,2,1,0]$.