Problem C: Cancel Culture

Advanced Algorithms for Programming Contests

Restrictions

Time: 2 seconds
Memory: 512 MB

Problem description

In the era of cancel culture, social networks are becoming increasingly fragile. Whereas, in the past, the main type of friendship-action in these networks was the forming of a new friendship between two users, now it's the exact opposite: More and more friends are canceling on each other.

As a social media analyst, you were tasked with examining this phenomenon more closely. To be able to do that, you need to assess the stability of given *communities*, a *community* in this context being a network of people that are befriended directly or indirectly through intermediate friends (e.g. a possibility for persons a and b to be befriended indirectly is for there to be persons c and d s.t. a is friends with c, c is friends with d and d is friends with b). The stability of a community is defined to be the minimum number of friendships that need to be canceled to split the community (s.t. there are people a and b that both were previously in the community but are no longer directly or indirectly befriended).

Write a program that can calculate a given community's stability.

Input

The input consists of

- one line containing integers N and M ($2 \leq N \leq 100,\ 0 \leq M \leq \frac{N(N-1)}{2}$) – the numbers of people and friendships in the community
- M lines each containing two integers a and b ($1 \leq a, b \leq N$) denoting a (mutual) friendship between persons a and b.

Output

Output the stability of the given community, i.e. the minimum number of friendships that need to be canceled in order to split it.

Sample input and output

Input	Output
3 3 1 2 2 3 3 1	2