Problem F: Links

Advanced Algorithms for Programming Contests

Restrictions

Time: 2 seconds
Memory: 512 MB

Problem description

Surfing around on Wikipedia you can reach many pages by only following the links on other pages. However, you can not reach every page from any other page only following links, which is absolutely unacceptable! Since adding a lot of links is troublesome, you decided that you need a program to find the minimum number of links that have to be added in order to enable surfing all pages only by clicking links from any start page.

Input

The input consists of

- one line containing N and M ($1 \leq N \leq 10^5, 0 \leq M \leq 10^5$) – the numbers of pages and already existing links, respectively
- M lines containing each integers a and b ($1 \leq a, b \leq N$), meaning that there exists a link from page a to page b.

Output

Output a single integer – the minimum number of extra links that have to be added in order for every page to be reachable from any other page.

Sample input and output

Input	**Output**
3 2 1 2 2 1	2
3 2 1 2 2 3	1