

Task: DRO

Roads

UFAM Workshop, contest #3. Source file dro.* Available memory: 128 MB.

There are n cities in Byteotia, connected with m unidirectional roads. Unfortunately, it is not guaranteed that we can travel from any city to any other one following directed roads. Therefore, kind Byteasar decided to build some new roads. He wants to build a minimal number of unidirectional roads, so that we can travel from any city to any other one.

Input

The first line of the input contains two integers n and m ($2 \leq n \leq 10\,000$, $0 \leq m \leq 100\,000$): the number of cities and roads in Byteotia. The cities are numbered from 1 to n . In the next m lines there are descriptions of roads: each consists of two integers a_i and b_i ($1 \leq a_i, b_i \leq n$) specifying a directed road from a_i to b_i (it is possible that $a_i = b_i$).

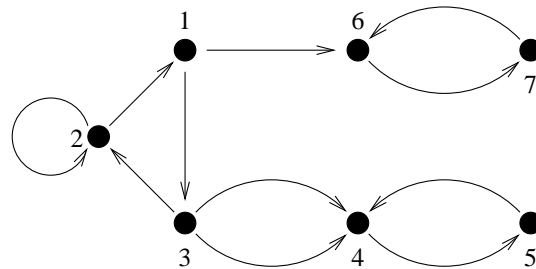
Output

The first and only line of the output should contain exactly one integer: the minimal number of roads to build.

Example

For the input data:

```
7 11
1 3
3 2
2 1
2 2
3 4
4 5
5 4
3 4
1 6
6 7
7 6
```



the correct result is:

```
2
```