Problem H
PRINTING
Time limit: 1.0 second

While printing documents, Dr. Lecter realized that the pages he printed were completely out of order. There are N document pages, numbered from 1 to N. A total of M sheets of paper have been printed, where the i-th sheet contains the contents of two pages a_i and b_i, each page on one side of the paper (the paper can be rotated freely so that either page a_i or b_i can come first). Since printing is very time-consuming and the remaining blank sheets for printing are limited, Dr. Lecter wants to determine the minimum number of additional sheets of paper required to print the necessary pages on both sides of the sheets, so that a subset of these sheets can be arranged into a **usable document**. As this document will only be used by Dr. Lecter, it is sufficient that there exists a sequence of numbers $i_1, i_2, ..., i_N$ such that $i_1 < i_2 < ... < i_N$ and the i_j-th page in the document corresponds to page number j ($1 \leq j \leq N$), making the document usable.

For example, let $N = 4, M = 2$, and there are two printed sheets. The first sheet contains two pages $(1, 4)$, and the second sheet contains two pages $(3, 3)$. In this case, Dr. Lecter only needs one more sheet to print the pages $(1, 2)$. Then, by arranging the sheets in the order $(1, 2), (3, 3), (4, 1)$, he will have a usable document (since the pages $1, 2, 3, 5$ in this document form a complete sequence of pages $1, 2, 3, 4$).

Task: Help Dr. Lecter determine the minimum number of additional sheets of paper needed to create a usable document.

Input

- The first line contains two positive integers N and M ($1 \leq N \leq 400, 0 \leq M \leq 10^5$).

- The i-th of the next M lines contains two integers a_i and b_i ($1 \leq a_i, b_i \leq N$).

Output

Print a single integer, which is the minimum number of additional sheets of paper required to create a usable document.

Sample Input	Sample Output
4 2 1 4 3 3	1
3 2 3 2 2 2	1
5 3 2 3 4 5 1 4	0

Explanation

In the second example, we don't need to use the sheet with the two pages $(2, 2)$. We only need to rotate the sheet with the two pages $(3, 2)$ to rearrange it as $(2, 3)$, and then use one more sheet

to print two pages $(1, 1)$ (or $(1, 2)$, $(1, 3)$ are also acceptable) and place this sheet before the one with pages $(2, 3)$ to have a usable document.

In the third example, no additional printing is required. We can simply arrange the existing sheets in the order $(1, 4), (2, 3), (4, 5)$.