XXIII OI, Stage II, Day trial. Source file `swi.*` **Available memory: 1024 MB.**   *9.02.2016*

Every Christmas, Byteasar decorates his home with a chain of colorful lights. This year, however, for the very first time, he intends to pick the colors of the lights himself. His rigorous (and somewhat peculiar) aesthetic sense tells him (in a nutshell) that a chain is pretty if some of its fragments share the same configuration of lights. Moreover, Byteasar's wife asked that this year's chain be "diverse", which he understands to have as many colors as possible. Help Byteasar in determining how many colors of lights he will need.

Input

The first line of the standard input contains two integers, n and m ($n \geq 2$, $m \geq 1$), separated by a single space; these specify the number of lights in the chain and the number of Byteasar's aesthetic rules, respectively. We number successive lights in the chain from 1 to n. Each of the following m lines specifies one aesthetic rule (requirement) by three integers a_i, b_i, and l_i ($1 \leq a_i, b_i, l_i$; $a_i \neq b_i$; $a_i, b_i \leq n - l_i + 1$), separated by single spaces. Such triplet requires that the fragments of the chain consisting of the lights no. $\{a_i, \ldots, a_i + l_i - 1\}$ and $\{b_i, \ldots, b_i + l_i - 1\}$ should be identical. In other words, the lights no. a_i and b_i must be of the same color, as must the lights no. $a_i + 1$ and $b_i + 1$, and so forth up to the lights no. $a_i + l_i - 1$ i $b_i + l_i - 1$.

Output

Your program should print a single positive integer k to the standard output: the maximum number of different colors of lights that can appear in a chain that satisfies the aesthetic requirements given on input.

Example

For the input data: the correct result is:

```
10 3                                                   3
1 6 3
5 7 4
3 8 1
```

whereas for the following input data: the correct answer is:

```
4 2                                                    1
1 2 2
2 3 2
```

Explanation for the first example: Let `a`, `b`, and `c` denote three distinct light colors. Then the following chain satisfies Byteasar's and his wife's requirements: `abacbababa`.

Sample grading tests:

1ocen: $n = 2000$, $m = 2$; Byteasar requires that fragments $\{1, \ldots, 1000\}$ and $\{1001, \ldots, 2000\}$ be identical, as well as the fragments $\{1, \ldots, 500\}$ and $\{501, \ldots, 1000\}$ be identical; the maximum number of distinct light colors in such chain is 500.

2ocen: $n = 500\,000$, $m = 499\,900$; the i-th requirement is of the form $a_i = i$, $b_i = i + 100$, $l_i = 1$; the maximum number of distinct light colors in such chain is 100.

3ocen: $n = 80\,000$, $m = 79\,995$, the i-th requirement is of the form $a_i = i$, $b_i = i + 2$, $l_i = 4$; there can be at most two distinct light colors in such chain.

4ocen: $n = 500\,000$, $m = 250\,000$, the i-th requirement is of the form $a_i = 1$, $b_i = i + 1$, $l_i = i$; all the lights in such chain must have the same color.

Grading

The test set consists of the subsets with certain properties specified below. Within each subset, there may be several test groups.

Subset	Property	Score
1	$n, m \leq 2000$	30
2	$n, m \leq 500\,000$, all l_i's are equal 1	20
3	$n, m \leq 80\,000$	30
4	$n, m \leq 500\,000$	20