B. Greenhouse Effect

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Emuskald is an avid horticulturist and owns the world's longest greenhouse — it is effectively infinite in length.

Over the years Emuskald has cultivated n plants in his greenhouse, of m different plant species numbered from 1 to m. His greenhouse is very narrow and can be viewed as an infinite line, with each plant occupying a single point on that line.

Emuskald has discovered that each species thrives at a different temperature, so he wants to arrange m - 1 borders that would divide the greenhouse into m sections numbered from 1 to m from left to right with each section housing a single species. He is free to place the borders, but in the end all of the i-th species plants must reside in i-th section from the left.

Of course, it is not always possible to place the borders in such way, so Emuskald needs to replant some of his plants. He can remove each plant from its position and place it anywhere in the greenhouse (at **any** real coordinate) with no plant already in it. Since replanting is a lot of stress for the plants, help Emuskald find the minimum number of plants he has to replant to be able to place the borders.

Input

The first line of input contains two space-separated integers n and m ($1 \leq n, m \leq 5000$, $n \geq m$), the number of plants and the number of different species. Each of the following n lines contain two space-separated numbers: one integer number s_i ($1 \leq s_i \leq m$), and one real number x_i ($0 \leq x_i \leq 10^9$), the species and position of the i-th plant. Each x_i will contain no more than 6 digits after the decimal point.

It is guaranteed that all x_i are different; there is at least one plant of each species; the plants are given in order "from left to the right", that is in the ascending order of their x_i coordinates ($x_i < x_{i+1}$, $1 \leq i < n$).

Output

Output a single integer — the minimum number of plants to be replanted.

Examples

input
```
3 2
2 1
1 2.0
1 3.100
```
output
```
1
```

input
```
3 3
1 5.0
2 5.5
3 6.0
```
output
```
0
```

input
```
6 3
1 14.284235
```

```
2 17.921382
1 20.328172
3 20.842331
1 25.790145
1 27.204125
```

output

```
2
```

Note

In the first test case, Emuskald can replant the first plant to the right of the last plant, so the answer is 1.

In the second test case, the species are already in the correct order, so no replanting is needed.