Real Estate Broker

by nabila_ahmed

You are a real estate broker in ancient Knossos. You have m unsold houses, and each house j has an area, x_j, and a minimum price, y_j. You also have n clients, and each client i wants a house with an area greater than a_i and a price less than or equal to p_i.

Each client can buy *at most* one house, and each house can have *at most* one owner. What is the maximum number of houses you can sell?

Input Format

The first line contains two space-separated integers describing the respective values of n (the number of clients) and m (the number of houses).
Each line i of the n subsequent lines contains two space-separated integers describing the respective values of a_i and p_i for client i.
Each line j of the m subsequent lines contains two space-separated integers describing the respective values of x_j and y_j for house j.

Constraints

- $1 \leq n, m \leq 1000$
- $1 \leq a_i, p_i \leq 10^9$, where $0 \leq i < n$.
- $1 \leq x_j, y_j \leq 10^9$, where $0 \leq j < m$.

Output Format

Print a single integer denoting the maximum number of houses you can sell.

Sample Input 0

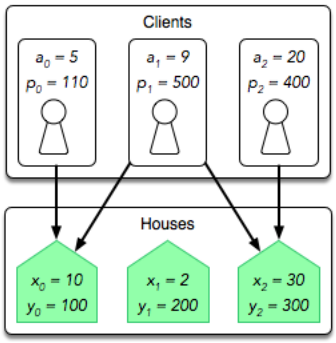
```
3 3
5 110
9 500
20 400
10 100
2 200
30 300
```

Sample Output 0

```
2
```

Explanation 0

Recall that each client i is only interested in some house j where $x_j > a_i$ and $y_j \leq p_i$. The diagram below depicts which clients will be interested in which houses:



- Client 0 will be interested in house 0 because it has more than $a_0 = 5$ units of space and costs less than $p_0 = 110$. Both of the other houses are outside of this client's price range.
- Client 1 will be interested in houses 0 and 2, as both these houses have more than $a_1 = 9$ units of space and cost less than $p_1 = 500$. They will not be interested in the remaining house because it's too small.
- Client 2 will be interested in house 2 because it has more than $a_2 = 20$ units of space and costs less than $p_2 = 400$. They will not be interested in the other two houses because they are too small.

All three clients are interested in the same two houses, so you can sell *at most* two houses in the following scenarios:

- Client 0 buys house 0 and client 1 buys house 2.
- Client 1 buys house 0 and client 2 buys house 2.
- Client 0 buys house 0 and client 2 buys house 2.

Thus, we print the maximum number of houses you can sell, 2, on a new line.

Submissions:256

Max Score:60
Difficulty: Hard

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Java 7

```
1  import java.io.*;
2  import java.util.*;
3  import java.text.*;
4  import java.math.*;
5  import java.util.regex.*;
6
7  public class Solution {
8
9      public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11     }
12 }
```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code