

M. Mocha and Stars

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

Mocha wants to be an astrologer. There are n stars which can be seen in Zhijiang, and the brightness of the i -th star is a_i .

Mocha considers that these n stars form a constellation, and she uses (a_1, a_2, \dots, a_n) to show its state. A state is called *mathematical* if all of the following three conditions are satisfied:

- For all i ($1 \leq i \leq n$), a_i is an integer in the range $[l_i, r_i]$.
- $\sum_{i=1}^n a_i \leq m$.
- $\gcd(a_1, a_2, \dots, a_n) = 1$.

Here, $\gcd(a_1, a_2, \dots, a_n)$ denotes the [greatest common divisor \(GCD\)](#) of integers a_1, a_2, \dots, a_n .

Mocha is wondering how many different mathematical states of this constellation exist. Because the answer may be large, you must find it modulo 998 244 353.

Two states (a_1, a_2, \dots, a_n) and (b_1, b_2, \dots, b_n) are considered different if there exists i ($1 \leq i \leq n$) such that $a_i \neq b_i$.

Input

The first line contains two integers n and m ($2 \leq n \leq 50, 1 \leq m \leq 10^5$) — the number of stars and the upper bound of the sum of the brightness of stars.

Each of the next n lines contains two integers l_i and r_i ($1 \leq l_i \leq r_i \leq m$) — the range of the brightness of the i -th star.

Output

Print a single integer — the number of different mathematical states of this constellation, modulo 998 244 353.


Examples

input	Copy
2 4 1 3 1 2	
output	Copy
4	
input	Copy
5 10 1 10 1 10 1 10 1 10 1 10	
output	Copy
251	
input	Copy
5 100 1 94 1 96	

Topic Stream Mashup: Number Theory

Finished

Practice



→ Virtual participation

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Start virtual contest

→ Submit?

Language: GNU G++17 7.3.0

Choose file: Choose file No file chosen

Submit

```
1 91
4 96
6 97
```

output

Copy

47464146

Note

In the first example, there are 4 different mathematical states of this constellation:

- $a_1 = 1, a_2 = 1$.
- $a_1 = 1, a_2 = 2$.
- $a_1 = 2, a_2 = 1$.
- $a_1 = 3, a_2 = 1$.

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