10/05/2023, 19:57 Problem - M - Codeforces





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PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

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, \ldots, a_n) to show its state. A state is called *mathematical* if all of the following three conditions are satisfied:

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

Here, $gcd(a_1, a_2, ..., a_n)$ denotes the greatest common divisor (GCD) of integers $a_1, a_2, ..., a_n$.

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, \ldots, a_n) and (b_1, b_2, \ldots, b_n) are considered different if there exists i ($1 \le i \le n$) such that $a_i \ne b_i$.

Input

The first line contains two integers n and m ($2 \le n \le 50$, $1 \le m \le 10^5$) — 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 $(1 \le l_i \le r_i \le m)$ — 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	Сору
2 4	
1 3	
1 2	
output	Сору
4	

<u>'</u>	
input	Сору
5 10	
1 10	
1 10	
1 10	
1 10	
1 10	
output	Сору
251	

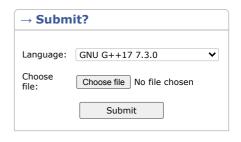
input	Сору
5 100 1 94 1 96	
1 94	
1 96	

Topic Stream Mashup: Number Theory Finished Practice

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Start virtual contest



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1 4 6	91 96		
6	97		
οι	ıtput		Сору
47	464146		

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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