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 $[l_i, r_i]$.
- $\sum_{i=1}^{n} a_i \le m$.
- $\gcd(a_1, a_2, \ldots, a_n) = 1$.

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

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

output
```
4
```

input
```
5 10
1 10
1 10
1 10
1 10
1 10
```

output
```
251
```

input
```
5 100
1 94
1 96
```

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

output Copy

```
47464146
```

Note

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

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