

Under the Epilogue

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 1024 megabytes

我仍然在
无人问津的阴雨霉湿之地
和着雨音
唱着没有听众的歌曲

There are n positions, numbered from 1 to n . The i -th position has two parameters a_i and b_i ($a_i \leq i \leq b_i$). Position i can move to any positions j in the range $j \in [a_i, b_i]$.

Now, Little Cyan Fish wants you to make future decisions. You can choose any position u and direct Little Cyan Fish to start from u and take any number of steps, ultimately returning to u . Of course, you can also choose to take no steps at all and simply stay at u .

Starting from u and ending at u , let S represent the set of all positions that have been visited at least once. Little Cyan Fish asks you how many different sets S can be generated in total, modulo 998 244 353.

Input

The first line of input contains an integer n ($1 \leq n \leq 50$).

The next n lines each contain two integers a_i, b_i ($1 \leq a_i \leq i \leq b_i \leq n$).

Output

Output a single integer, representing the result modulo 998 244 353.

Example

standard input	standard output
5 1 2 2 5 3 4 2 5 4 5	12