

Jumping

time limit per test: 5 seconds
memory limit per test: 976.6 megabytes
input: standard input
output: standard output
points: 100 · problem code: jumping · author: inj

From a location i , you can jump forward a_i or b_i steps forward. Once you get beyond location n , stop making any jumps. Beginning at location 1, how many ways are there to get past location n .

Input

The first line contains the integer n . The following n lines contain integers a_i and b_i indicating the size of jumps made. In order of location 1, 2, 3....

Output

The number of ways of getting from location 1 to beyond n , modulo $10^9 + 7$

Constraints

- $1 \leq n \leq 10^5$
- $1 \leq a, b \leq 10^5$

Example 1

In

```
5
1 2
1 2
1 2
1 2
1 2
1 2
```

Out

```
13
```

Example 2

In

```
10
1 3
1 3
2 2
2 3
2 5
2 5
1 4
1 5
1 4
2 2
```

Out

```
31
```