# Back To School '16: Textbooks

**Time limit:** 4.5s     **Memory limit:** 256M

bobhob314 has applied some super sticky substance to his $N$ textbooks. This mysterious substance is so sticky that it prevents textbooks from falling off ledges in a Tetris-like manner. The $n^{\text{th}}$ textbook is placed starting at $s_n$ and is $l_n$ units long and $w_n$ wide. The textbooks are given in the order in which they are placed.

The sun is shining directly above and bobhob314 wants to protect more books from the sun. Find the total area unoccupied by a textbook in the shade (has at least one part of a textbook above). Print this modulo $1\,000\,000\,007$.

## Input Specification

The first line contains a single integer $N$.

The next $N$ lines contain $3$ space separated integers, $s_n$, $l_n$ and $w_n$.

**Note:** fast input may be required.

## Constraints

**Subtask 1 [10%]**

$1 \leq N \leq 100$

$1 \leq s_n, l_n \leq 100\,000$

$w_n = 1$

**Subtask 2 [30%]**

$1 \leq N \leq 10\,000$

$1 \leq s_n, l_n \leq 10^9$

$1 \leq w_n \leq 10$

**Subtask 3 [60%]**

$1 \leq N \leq 500\,000$

$1 \leq s_n, l_n \leq 10^9$

$1 \leq w_n \leq 100$

## Output Specification

Output a single integer, the number of empty spaces under at least one textbook modulo $1\,000\,000\,007$.

## Sample Input 1

```
3
1 3 1
3 3 1
5 3 1
```

## Sample Output 1

```
6
```

## Sample Input 2

```
5
1 2 1
3 1 1
3 4 1
6 3 2
5 2 1
```

## Sample Output 2

```
9
```

## Explanation for Sample Output 2

The textbooks are represented with a digit. A period represents a unit in the shade.

```
    55
    .444
     .444
   3333..
112.....
```

## Sample Input 3

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

## Sample Output 3

```
4
```

## Explanation for Sample Output 3

```
444
..3
2.1
2.1
```