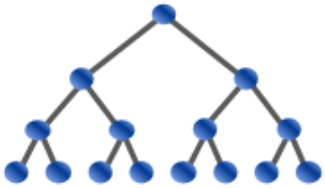

USACO 2023 February Contest, Platinum
Problem 1. Hungry Cow

****Note: The time limit for this problem is 6s, three times the default. The memory limit for this problem is 512MB, twice the default.****

Bessie is a hungry cow. Each day, for dinner, if there is a haybale in the barn, she will eat one haybale. Farmer John does not want Bessie to starve, so some days he sends a delivery of haybales, which arrive in the morning (before dinner). In particular, on day d_i, Farmer John sends a delivery of b_i haybales ($1 \le d_i \le 10^{14}$, $0 \le b_i \le 10^9$).

Process U ($1 \le U \le 10^5$) updates as follows: Given a pair (d, b), update the number of haybales arriving on day d to b. After each update, output the sum of all days on which Bessie eats haybales modulo $10^9 + 7$.

INPUT FORMAT (input arrives from the terminal / stdin):

U, followed by U lines containing the updates.

OUTPUT FORMAT (print output to the terminal / stdout):

The sum after each update modulo $10^9 + 7$.

SAMPLE INPUT:

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

SAMPLE OUTPUT:

```
15
36
18
```

Answers after each update:

```
4+5+6=15
1+2+3+4+5+6+7+8=36
1+2+4+5+6=18
```

SAMPLE INPUT:

```
9
1 89
30 7
101 26
1 24
5 1
60 4
5 10
101 0
1 200
```

SAMPLE OUTPUT:

```
4005
4656
7607
3482
3507
3753
4058
1107
24531
```

SCORING:

- Input 3: $U \leq 5000$
- Inputs 4-10: Updates only increase the number of haybales arriving on day d.
- Inputs 11-22: No additional constraints.

Problem credits: Brandon Wang and Benjamin Qi

Contest has ended. No further submissions allowed.