

## Banana Quest

In this problem, you are tasked with managing a dynamic environment in which a monkey attempts to eat as many bananas as possible. Bananas are placed along a number line at fixed positions, and each becomes ripe at a specific time. Your system must handle a sequence of operations that dynamically insert, remove, or query bananas.



The monkey always starts at position  $x = 0$  and moves to the right along the number line. It moves at a constant speed of 1 unit per second and is only allowed to move in one direction (to the right). The monkey's goal is to eat as many bananas as it can within a given time limit.

Each banana is located at a unique position  $p > 0$  and becomes edible at time  $t$ . When the monkey reaches a banana:

- If the current time  $cur\_time$  is at least  $t$ , it eats the banana immediately and keeps moving right.
- If the current time is less than  $t$ , it may either:
  - Wait until the banana becomes ripe at time  $t$  and then eat it, or
  - Skip the banana and continue moving.
- If it arrives at a banana at time  $T$ , it can still eat it. The monkey stops its journey after  $T$  seconds.

You will be given a sequence of  $q$  operations. Each operation is one of the following:

- **ADD  $p\ t$**  — Add a banana at position  $p$  that becomes ripe at time  $t$ . Each position contains at most one banana.
- **REMOVE  $p$**  — Remove the banana at position  $p$  (it is guaranteed to exist).
- **QUERY  $T$**  — Start the monkey at position 0 and simulate its behavior for  $T$  seconds. Output the number of bananas it can eat.

Your task is to simulate this process and efficiently respond to queries that ask: "If the monkey starts moving now, how many bananas can it eat within  $T$  seconds?"

## Input

The first line contains an integer  $q$  ( $1 \leq q \leq 2 \times 10^5$ ), the number of operations.

Each of the next  $q$  lines contains one of the three operations described above:

- **ADD**  $p\ t$  with  $1 \leq p \leq 10^9$  and  $1 \leq t \leq 10^9$
- **REMOVE**  $p$  with  $1 \leq p \leq 10^9$
- **QUERY**  $T$  with  $1 \leq T \leq 2 \times 10^9$

It is guaranteed that each **REMOVE** operation refers to a position where a banana exists.

## Output

For each **QUERY**  $T$  operation, output a single integer — the number of bananas the monkey can eat within  $T$  seconds.

### Sample Input 1

```
6
ADD 1 1
ADD 2 5
ADD 3 3
QUERY 5
REMOVE 2
QUERY 5
```

### Sample Output 1

```
2
2
```

### Sample Input 2

```
2
ADD 3 5
QUERY 5
```

### Sample Output 2

```
1
```