The Inquiring Manager

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You are responsible for auditing all customer orders. Each order has a price, P_i, and a timestamp, T_i, denoting the minute when it was received.

At any given time, your manager can ask you for the maximum price of any order placed within the last 60 minutes. For example, if your manager stops in at minute 83, you must know the maximum price of any order received between minutes 24 and 83. Observe that you must also account for orders received in the same minute as your manager arrived.

You are given a list of N events, where each event represents either a received order or an inquiry. For each inquiry from your manager, print the maximum price for any order placed within the last 60 minutes on a new line.

Input Format

The first line contains a single integer, N, denoting the number of events. Each of the N subsequent lines describes either of the following types of events:

1. `1 P T` - An order with price P was placed at time T.
2. `2 T` - Your manager stopped in at time T to inquire about the maximum order price for the last 60 minutes.

All the events are given in non-decreasing order with respect to T, so for $i < j$, we have $T_i \leq T_j$.

If there are multiple events of different types occurring at the same time, the received orders will be listed *before* manager inquiries.

Constraints

- $1 \leq N \leq 10^6$
- $0 \leq P_i, T_i \leq 10^{18}$

Output Format

For each event of type 2, print a number denoting the maximum price for any order placed within the previous 60 minutes on a new line. If no orders were placed during that interval, print -1.

Assume there will be at least one event of type 2.

Sample Input

```
11
1 150 0
1 3 10
2 40
1 143 59
2 59
1 100 60
2 60
1 159 61
2 61
2 120
2 121
```

Sample Output

```
150
150
143
159
159
-1
```

Explanation

1. The largest order price in time range $[0, 40]$ is 150.
2. The largest order price in time range $[0, 59]$ is still 150.
3. The largest order price in time range $[1, 60]$ is 143.
4. The largest order price in time range $[2, 61]$ is 159.
5. The largest order price in time range $[61, 120]$ is still 159.
6. There were no orders placed in time range $[62, 121]$, so we print -1 for this inquiry.

Submissions: 754
Max Score: 40
Difficulty: Moderate