THICC '17 P3 - The God of Death

Time limit: 1.0s   **Memory limit:** 64M

The God of Death is a famous assassin. As his student, you are assigned to keep track of N targets, numbered $1, 2, \ldots, N$. The God of Death will then give you Q queries.

1. `C x y`: The x-th target moves to location y. This action marks the beginning of a new day.
2. `Q x y`: Return the location of the x-th target on the y-th day. It is guaranteed that if it is currently day d, $y \leq d$.

Can you answer the God of Death's queries?

Input Specification

The first line will contain N.
The next line will contain N integers, $L_1, L_2, \ldots, L_N$, the locations of the N targets **on day 0**.
The next line will contain Q.
The next Q lines will each contain a valid query, as described above.

Output Specification

Output the answer to each `Q` query on a new line.

Constraints

For all subtasks:

$1 \leq L_i \leq 10^9$

$1 \leq x \leq N$

$1 \leq Q \leq 10^5$

Subtask 1 [30%]

$1 \leq N \leq 10^3$

Subtask 2 [70%]

$1 \leq N \leq 10^6$

Sample Input

```
3
2 3 1
6
C 3 2
C 2 1
Q 1 1
Q 2 2
C 1 3
Q 3 3
```

Sample Output

```
2
1
2
```