THICC '17 P3 - The God of Death

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, $y \le d$.

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 contains 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,
$1 \le L_i \le 10^9$
$1 \le x \le N$
$1 \le Q \le 10^5$

Subtask 1 [30%]:

$1 \le N \le 10^3$

Subtask 2 [70%]:

$1 \le N \le 10^6$

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
```