For this problem, we have 2 types of queries you can perform on a List:

1. Insert y at index x:

```
Insert
x y
```

2. Delete the element at index x:

```
Delete
x
```

Given a list, L, of N integers, perform Q queries on the list. Once all queries are completed, print the modified list as a single line of space-separated integers.

Input Format

The first line contains an integer, N (the initial number of elements in L).
The second line contains N space-separated integers describing L.
The third line contains an integer, Q (the number of queries).
The $2Q$ subsequent lines describe the queries, and each query is described over two lines:

- If the first line of a query contains the String **Insert**, then the second line contains two space separated integers x y, and the value y must be inserted into L at index x.
- If the first line of a query contains the String **Delete**, then the second line contains index x, whose element must be deleted from L.

Constraints

- $1 \leq N \leq 4000$
- $1 \leq Q \leq 4000$
- Each element in is a *32-bit integer*.

Output Format

Print the updated list L as a single line of space-separated integers.

Sample Input

```
5
12 0 1 78 12
2
Insert
5 23
Delete
0
```

Sample Output

```
0 1 78 12 23
```

Explanation

$L = [12, 0, 1, 78, 12]$

Q_0: **Insert** 23 at index 5.
$L_0 = [12, 0, 1, 78, 12, 23]$

Q_1: **Delete** the element at index 0.
$L_1 = [0, 1, 78, 12, 23]$

Having performed all Q queries, we print L_1 as a single line of space-separated integers.