Problem C. Maximum Sum

Time limit	1000 ms
Mem limit	1572864 kB
Code length Limit	50000 B
OS	Linux

You are given a sequence A[1], A[2], ..., A[N] (0 ≤ A[i] ≤ 10^8 , 2 ≤ N ≤ 10^5). There are two types of operations and they are defined as follows:

Update:

This will be indicated in the input by a 'U' followed by space and then two integers i and x.

U i x, 1 ≤ i ≤ N, and x, 0 ≤ x ≤ 10^8.

This operation sets the value of A[i] to x.

Query:

This will be indicated in the input by a 'Q' followed by a single space and then two integers i and j.

Q x y, 1 ≤ x < y ≤ N.

You must find i and j such that x ≤ i, j ≤ y and i != j, such that the sum A[i]+A[j] is maximized. Print the sum A[i]+A[j].

Input

The first line of input consists of an integer **N** representing the length of the sequence. Next line consists of N space separated integers A[i]. Next line contains an integer **Q**, Q ≤ 10^5, representing the number of operations. Next Q lines contain the operations.

Output

Output the maximum sum mentioned above, in a separate line, for each Query.

Example

Input:

```
5
1 2 3 4 5
6
Q 2 4
```

```
Q 2 5
U 1 6
Q 1 5
U 1 7
Q 1 5
```

Output:

```
7
9
11
12
```

Warning: large Input/Output data, be careful with certain languages

Submit solution!

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hide comments

- <
- Previous
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- Next
- >

amank12345: 2022-06-13 23:04:13

Java Users, Please take a note!!!!
instead of using scanner or buffered reader,use FastReader class,otherwise this program will give TLE.

Here is the link,you can refer to fast reader class :
https://www.geeksforgeeks.org/fast-io-in-java-in-competitive-programming/

zayady: 2021-11-09 23:12:52

i solve it usint sqrt decom , and i got AC , but this test case breaked my solution (corner case when the size of block is equal 1)
the correct answer is 3 not 8
1
5
2
U 1 3
Q 1 1

Last edit: 2021-11-09 23:15:01

fuadul_hasan: 2021-09-28 10:43:38

simple problem... best one for start learning segtree

mortal_beast: 2021-06-06 15:17:15

Good for begineers

rimuru_404: 2021-06-05 05:38:54

After some silly mistakes AC. Nice problem for segment tree beginners

mukund007: 2021-05-30 08:43:03

Fenwick Tree go go

saurabh_kl: 2021-02-11 21:05:39

Accepting Java solution, I don't know it gives TLE with Scanner or not but FastReader is okay

Last edit: 2021-02-11 21:06:32

kanisht09: 2021-01-22 21:47:48

Solved it using segment trees 2 different ways

	saurav7192: 2020-08-06 10:56:08 Aced finally..... **Last edit: 2020-08-06 12:30:50**
	skj_helloworld: 2020-08-04 12:34:34 accepted in one go