KGSS - Maximum Sum

#tree (/problems/tag/tree)

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

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amank12345 (/users/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 (/users/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 (/users/fuadul_hasan): 2021-09-28 10:43:38
simple problem... best one for start learning segtree

mortal_beast (/users/mortal_beast): 2021-06-06 15:17:15
Good for begineers

rimuru_404 (/users/rimuru_404): 2021-06-05 05:38:54
After some silly mistakes AC. Nice problem for segment tree beginners

mukund007 (/users/mukund007): 2021-05-30 08:43:03
Fenwick Tree go go


saurabh_kl (/users/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 (/users/kanisht09): 2021-01-22 21:47:48
Solved it using segment trees 2 different ways

saurav7192 (/users/saurav7192): 2020-08-06 10:56:08
Aced finally.....

Last edit: 2020-08-06 12:30:50

skj_helloworld (/users/skj_helloworld): 2020-08-04 12:34:34
accepted in one go

Submit solution! (/submit/KGSS/)

Added by: Swarnaprakash (/users/swarnaprakash)
Date: 2009-01-10
Time limit: 1s
Source limit: 50000B

Memory limit:	1536MB
Cluster:	Cube (Intel G860) (/clusters/)
Languages:	All except: ERL JS-RHINO NODEJS PERL6 VB.NET
Resource:	Kurukshetra 09 OPC