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(/)

Problems (/problems) / classical (/problems/classical) / Maximum Sum Status (/status/KGSS/) Ranking (/ranks/KGSS/)

KGSS - Maximum Sum

#tree (/problems/tag/tree)

You are given a sequence $A[1], A[2], \dots, A[N]$ ($0 \leq A[i] \leq 10^8$, $2 \leq N \leq 10^5$). 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, $1 \leq i \leq N$, and $x, 0 \leq x \leq 10^8$.

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, $1 \leq x < y \leq N$.

You must find i and j such that $x \leq i, j \leq y$ and $i \neq j$, 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 , $Q \leq 10^5$, 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! (/submit/KGSS/)

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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 using sqrt decom, and i got AC, but this test case broke 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 beginners



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

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