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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], ..., A[N] ($0 \le A[i] \le 10^8$, $2 \le N \le 10^5$). 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**, $1 \le i \le N$, and x, $0 \le x \le 10^8$.

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

Ouerv:

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

You must find i and j such that $x \le i$, $j \le y$ 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**, $Q \le 10^5$, 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

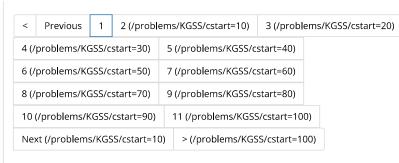
Output:
7
9
11
```

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

✓ Submit solution! (/submit/KGSS/)

hide comments





O am

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/

9

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

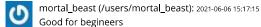
1 5 2

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



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

renwick Tree go go

saurabh_kl (/users/saurabh_kl): 2021-02-11 21:05:39
Accepting lava solution, I don't know it gives TLE

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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