Sphere online judge (/)

FENTREE - Fenwick Trees

#binary-tree (/problems/tag/binary-tree) #datastructures (/problems/tag/datastructures)

Mr. Fenwick has an array **a** with many integers, and his children love to do operations on the
array with their father. The operations can be a query or an update.

For each query the children say two indices **l** and **r** , and their father answers back with the sum
of the elements from indices **l** to **r** (both included).

When there is an update, the children say an index **i** and a value **x** , and Fenwick will add x to
a_i (so the new value of a_i is $a_i + x$).

Because indexing the array from zero is too obscure for children, all indices start from 1. Fenwick is now too busy to play games, so he needs your help with a program that plays with his
children for him, and he gave you an input/output specification.

Input

The first line of the input contains N ($1 \le N \le 10^6$) . The second line contains N integers a_i ($-10^9 \le a_i \le 10^9$) , the initial values of the array. The third line contains Q ($1 \le Q \le 3 \times 10^5$) ,
the number of operations that will be made. Each of the next Q lines contains an operation.
Query operations are of the form “q l r ” ($1 \le l \le r \le N$) , while update operations are of the form
“u i x ” ($1 \le i \le N$, $-10^9 \le x \le 10^9$) .

Output

You have to print the answer for every query in a different
line, in the same order of the input.

Example

Feedback

```
Input:
10
3 2 4 0 42 33 -1 -2 4 4
6
q 3 5
q 1 10
u 5 -2
q 3 5
u 6 7
q 4 7

Output:
46
89
44
79
```

Submit solution! (/submit/FENTREE/)

hide comments

sapjv (/users/sapjv): 2019-10-10 15:31:58
Segment Tree - AC in 0.13 sec
Fenwick Tree - AC in 0.09 sec

aj_254 (/users/aj_254): 2019-09-12 23:26:43
solvable in pypy just use standard i/o.

rul0 (/users/rul0): 2019-01-22 17:20:31
Time limit too strict for Python

Bojan Rosko (/users/rols): 2018-10-05 12:41:34
Watch out for int32 overflow...

arpit728 (/users/arpit728): 2018-05-20 17:02:56
Time limit too strict for Java


vanthuan208 (/users/vanthuan208): 2017-06-20 08:40:48
lazy segment tree!


gaurav sharma (/users/gaurav39): 2017-05-19 20:24:48
good one !

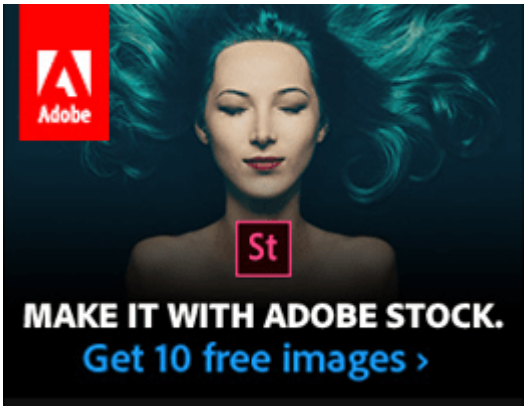
Last edit: 2017-05-20 05:56:20
Jitesh (/users/jiteshjs98): 2016-10-19 12:30:33
@spojpriya. You can't do it directly. But, you can try this (http://spojtoolkit.com).
You might find it useful.


spojpriya (/users/spojpriya): 2016-10-19 08:04:34
How can I check why I'm getting wrong answer for my solution?
As I think my code is correct .

Last edit: 2016-10-19 08:05:23
sarvagya (/users/sarvagya3943): 2016-10-18 11:52:23
Shouldnt this be in tutorial ?

Feedback

Submit solution! (/submit/FENTREE/)



(https://srv.carbonads.net/ads/click/x/GTND4
segment=placement:wwwspojcom;)
Limited time offer: Get
10 free Adobe Stock
images.
(https://srv.carbonads.net/ads/click/x/GTND42Q
segment=placement:wwwspojcom;)
ADS VIA CARBON (HTTP://C
UTM_SOURCE=WWWSPOJC

Added by:	BerSub (/users/bsubercaseaux)
Date:	2016-10-17
Time limit:	0.400s-1s
Source limit:	50000B
Memory limit:	1536MB
Cluster:	Cube (Intel G860) (/clusters/)
Languages:	All except: ASM64 GOSU

© Spoj.com. All Rights Reserved. Spoj uses Sphere Engine (http://sphere-engine.com?utm_campaign=permanent&utm_medium=footer&utm_source=spoj)™ © by Sphere Research Labs (http://sphere-research.com?utm_campaign=permanent&utm_medium=footer&utm_source=spoj).