

## C. Circular RMQ

time limit per test: 1.5 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

You are given circular array  $a_0, a_1, \dots, a_{n-1}$ . There are two types of operations with it:

- $inc(lf, rg, v)$  — this operation increases each element on the segment  $[lf, rg]$  (inclusively) by  $v$ ;
- $rmq(lf, rg)$  — this operation returns minimal value on the segment  $[lf, rg]$  (inclusively).

Assume segments to be circular, so if  $n = 5$  and  $lf = 3, rg = 1$ , it means the index sequence: 3, 4, 0, 1.

Write program to process given sequence of operations.

### Input

The first line contains integer  $n$  ( $1 \leq n \leq 200000$ ). The next line contains initial state of the array:  $a_0, a_1, \dots, a_{n-1}$  ( $-10^6 \leq a_i \leq 10^6$ ),  $a_i$  are integer. The third line contains integer  $m$  ( $0 \leq m \leq 200000$ ),  $m$  — the number of operations. Next  $m$  lines contain one operation each. If line contains two integer  $lf, rg$  ( $0 \leq lf, rg \leq n-1$ ) it means  $rmq$  operation, it contains three integers  $lf, rg, v$  ( $0 \leq lf, rg \leq n-1; -10^6 \leq v \leq 10^6$ ) —  $inc$  operation.

### Output

For each  $rmq$  operation write result for it. Please, do not use `%lld` specifier to read or write 64-bit integers in C++. It is preferred to use `cout` (also you may use `%I64d`).

### Examples

input	Copy
4 1 2 3 4 4 3 0 3 0 -1 0 1 2 1	
output	Copy
1 0 0	

### Codeforces Testing Round #1

**Finished**

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