16/11/2017 HackerRank

















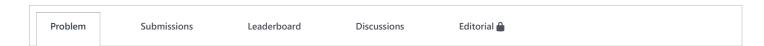
Points: 25 Rank: 183204



Dashboard > Data Structures > Advanced > Box Operations

**Box Operations ■** 





Alice purchased an array of n wooden boxes that she indexed from 0 to n-1. On each box i, she writes an integer that we'll refer to as  $box_i$ .

Alice wants you to perform q operations on the array of boxes. Each operation is in one of the following forms:

(Note: For each type of operations,  $l \leq i \leq r$ )

- 1 1 r c: Add c to each  $box_i$ . Note that c can be negative.
- 2 1 r d:Replace each  $box_i$  with  $\left| rac{box_i}{d} \right|$  .
- 3 1 r: Print the minimum value of any **box**<sub>i</sub>.
- 4 1 r: Print the sum of all **box**<sub>i</sub>.

Recall that |x| is the maximum integer y such that  $y \le x$  (e.g., |-2.5| = -3 and |-7| = -7).

Given n, the value of each  $box_i$ , and q operations, can you perform all the operations efficiently?

# **Input Format**

The first line contains two space-separated integers denoting the respective values of n (the number of boxes) and q (the number of operations). The second line contains n space-separated integers describing the respective values of  $box_0, box_1, \ldots, box_{n-1}$  (i.e., the integers written on each box).

Each of the q subsequent lines describes an operation in one of the four formats defined above.

#### **Constraints**

- $1 \le n, q \le 10^5$
- $-10^9 \le box_i \le 10^9$
- $0 \le l \le r \le n-1$
- $-10^4 \le c \le 10^4$
- $2 \le d \le 10^9$

### **Output Format**

For each operation of type 3 or type 4, print the answer on a new line.

#### Sample Input 0

```
10 10

-5 -4 -3 -2 -1 0 1 2 3 4

1 0 4 1

1 5 9 1

2 0 9 3

3 0 9

4 0 9
```

16/11/2017 HackerRank

```
4 2 3
```

3 4 5

4 6 7 3 8 9

## Sample Output 0

-2 -2

-2

-2

0 1 1

## **Explanation 0**

Initially, the array of boxes looks like this:



We perform the following sequence of operations on the array of boxes:

1. The first operation is 1 0 4 1, so we add  ${f 1}$  to each  $box_i$  where  $0 \leq i \leq 4$ :



2. The second operation is 1 5 9 1, so we add c=1 to each  $box_i$  where  $5 \leq i \leq 9$ :



3. The third operation is 2 0 9 3, so we divide each  $box_i$  where  $0 \leq i \leq 9$  by d=3 and take the floor:



- 4. The fourth operation is 3 0 9, so we print the minimum value of  $box_i$  for  $0 \le i \le 9$ , which is the result of min(-2,-1,-1,-1,0,0,0,1,1,1) = -2.
- 5. The fifth operation is 4 0 9, so we print the sum of  $box_i$  for  $0 \le i \le 9$ , which is the result of -2+-1+-1+0+0+0+1+1+1=-2.

... and so on.

f in
Submissions:<u>78</u>
Max Score:100
Difficulty: Expert

Rate This Challenge:
☆☆☆☆☆

```
Current Buffer (saved locally, editable) & 49
                                                                                          Java 7
                                                                                                                           Ö
1 ▼ import java.io.*;
   import java.util.*;
3
   import java.text.*;
   import java.math.*;
   import java.util.regex.*;
6
7 ▼ public class Solution {
8
9
        public static void main(String[] args) {
10
            Scanner in = new Scanner(System.in);
            int n = in.nextInt();
11
12
            int q = in.nextInt();
            int[] box = new int[n];
```

16/11/2017 HackerRank

Join us on IRC at #hackerrank on freenode for hugs or bugs.

Contest Calendar | Blog | Scoring | Environment | FAQ | About Us | Support | Careers | Terms Of Service | Privacy Policy | Request a Feature