CSES Problem Set

Range Updates and Sums

Time limit: 1.00 s **Memory limit:** 512 MB

Your task is to maintain an array of n values and efficiently process the following types of queries:

1. Increase each value in range $[a,b]$ by x.
2. Set each value in range $[a,b]$ to x.
3. Calculate the sum of values in range $[a,b]$.

Input

The first input line has two integers n and q: the array size and the number of queries.

The next line has n values $t_1,t_2,\ldots,t_n$: the initial contents of the array.

Finally, there are q lines describing the queries. The format of each line is one of the following: "1 a b x", "2 a b x", or "3 a b".

Output

Print the answer to each sum query.

Constraints

- $1 \le n,q \le 2 \cdot 10^5$
- $1 \le t_i,x \le 10^6$
- $1 \le a \le b \le n$

Example

Input:
```
6 5
2 3 1 1 5 3
3 3 5
1 2 4 2
3 3 5
2 2 4 5
3 3 5
```

Output:
```
7
11
15
```

Range Queries

...
Pizzeria Queries ✓
Subarray Sum Queries ✓
Distinct Values Queries ✓
Increasing Array Queries –
Forest Queries II –
Range Updates and Sums ✓
Polynomial Queries ✓
Range Queries and Copies –

Your submissions

2022-07-11 21:17:05 ✓