

# Swaps and Sum

You are given a sequence  $a_1, a_2, \dots, a_n$ . The task is to perform the following queries on it:

**Type 1.** Given two integers  $l$  and  $r$  ( $1 \leq l < r \leq n$ ;  $r - l + 1$  is even). Reorder the elements of the sequence in such a way (changed part of the sequence is in brackets):

$$a_1, a_2, \dots, a_n \rightarrow a_1, a_2, \dots, a_{l-2}, a_{l-1}, [a_{l+1}, a_l, a_{l+3}, a_{l+2}, \dots, a_r, a_{r-1}], a_{r+1}, a_{r+2}, \dots, a_n$$

That is swap the first two elements of segment  $[l, r]$ , the second two elements, and so on.

**Type 2.** Given two integers  $l$  and  $r$ , print the value of sum  $\sum_{i=l}^r a_i$ .

## Input Format

The first line contains two integers  $n$  and  $q$ . The second line contains  $n$  integers  $a_1, a_2, \dots, a_n$ , denoting initial sequence.

Each of the next  $q$  lines contains three integers  $tp_i, l_i, r_i$ , where  $tp_i$  denotes the type of the query, and  $l_i, r_i$  are parameters of the query. It's guaranteed that for a first-type query  $(r - l + 1)$  will be even.

## Constraints

$$\begin{aligned} 2 &\leq n \leq 2 \times 10^5 \\ 1 &\leq q \leq 2 \times 10^5 \\ 1 &\leq a_i \leq 10^6 \\ 1 &\leq tp_i \leq 2 \\ 1 &\leq l_i \leq r_i \leq n \end{aligned}$$

## Output Format

For each query of the second type print the required sum.

## Sample Input

```
6 4
1 2 3 4 5 6
1 2 5
2 2 3
2 3 4
2 4 5
```

## Example Output

```
5
7
9
```

## Explanation

After the first query the sequence becomes [1, 3, 2, 5, 4, 6].