C - Rotate and Sum Query

Editorial (/contests/abc425/tasks/abc425_c/editorial)

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 350 points

Problem Statement

You are given an integer sequence $A = (A_1, A_2, \ldots, A_N)$ of length N.

Process Q queries in order. There are two types of queries, given in the following formats:

- `1 c`: Perform the operation of moving the first element of A to the end c times.
- `2 l r`: Output the value of $\sum_{i=l}^{r} A_i$.

Constraints

- $1 \leq N \leq 2 \times 10^5$
- $1 \leq Q \leq 2 \times 10^5$
- $1 \leq A_i \leq 10^9$
- $1 \leq c \leq N$
- $1 \leq l \leq r \leq N$
- At least one query of the second type exists.
- All input values are integers.

Input

The input is given from Standard Input in the following format:

$$
\begin{aligned}
&N \quad Q \\
&A_1 \quad A_2 \quad \dots \quad A_N \\
&\mathrm{query}_1 \\
&\mathrm{query}_2 \\
&\vdots \\
&\mathrm{query}_Q
\end{aligned}
$$

Each query query_i is given in one of the following two formats:

$$
1 \quad c
$$

$$
2 \quad l \quad r
$$

Output

Following the instructions in the problem statement, output the answers to the second type queries, separated by newlines.

Sample Input 1 Copy

Copy

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

Sample Output 1 Copy

Copy

```
8
9
```

Each query is processed as follows:

- First query: $A_1 + A_2 + A_3 = 3 + 1 + 4 = 8$, so output 8.
- Second query: $A = (3, 1, 4, 5)$ changes to $A = (1, 4, 5, 3)$.
- Third query: $A_2 + A_3 = 4 + 5 = 9$, so output 9.

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Sample Input 2 Copy

```
5 7
1 2 4 8 16
2 1 5
1 4
1 5
2 1 5
2 2 4
1 1
2 3 3
```

Sample Output 2 Copy

```
31
31
7
4
```

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