CODEFORCES
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ITMO Academy: pilot course » Segment Tree, part 1 » Step 1 » Practice

A. Segment Tree for the Sum

time limit per test: 1 second❓
memory limit per test: 1024 megabytes

In this task, you need to write a regular segment tree for the sum.

Input

The first line contains two integers n and m ($1 \leq n, m \leq 100000$), the size of the array and the number of operations. The next line contains n numbers a_i, the initial state of the array ($0 \leq a_i \leq 10^9$). The following lines contain the description of the operations. The description of each operation is as follows:

- 1 i v: set the element with index i to v ($0 \leq i < n, 0 \leq v \leq 10^9$).
- 2 l r: calculate the sum of elements with indices from l to $r - 1$ ($0 \leq l < r \leq n$).

Output

For each operation of the second type print the corresponding sum.

Example

input Copy
```
5 5
5 4 2 3 5
2 0 3
1 1 1
2 0 3
1 3 1
2 0 5
```

output Copy
```
11
8
14
```

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