

Segment Tree Practice 3

Time limit: 0.6s **Memory limit:** 256M
Java: 5.0s

Given an array A of size N , support the Q of the following operations:

1. Find the maximum prefix sum of the subarray from index l to index r . That is, find the maximum sum of a subarray starting at l and ending in the range $[l, r]$.
2. Update the element at index i to value x .

Constraints

$$1 \leq N, Q \leq 2 \times 10^5$$

$$1 \leq l \leq r \leq N$$

$$1 \leq i \leq N$$

$$-10^9 \leq A_i, x \leq 10^9$$

Input Specification

The first line contains 2 integers N and Q .

The second line contains N integers A_1, A_2, \dots, A_N , the initial elements of A .

The next Q lines are one of two forms:

1. `P l r` representing the first operation.
2. `U i x` representing the second operation.

Output Specification

For each type 1 operation output one integer on its own line, the answer to that query.

Sample Input

```
7 5
-1 3 2 -6 5 -6 7
P 2 6
P 5 7
U 4 -3
P 2 6
P 1 1
```

Sample Output

```
5
6
7
-1
```