Segment Tree Practice 2

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

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

1. Find the value and index of the smallest element from index l to index r. If there are multiple smallest elements, find the index of the earliest one.
2. Update the element at index i to value x.

Constraints

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

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

$1 \leq i \leq N$

$1 \leq A_i, x \leq 10^9$

Input Specification

The first line contains 2 integers N and Q.

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

The next Q lines are one of two forms:

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

Output Specification

For each type 1 operation output two integers, the minimum value and the leftmost index of that value in the given range.

Sample Input

```
5 5
6 3 3 2 4
M 2 4
M 2 3
U 2 6
M 1 2
M 1 3
```

Sample Output

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