Dynamic Range Minimum Test

Time limit: 0.15s	**Memory limit:** 8M
Java: 0.5s	PyPy 2: 128M
PyPy 2: 2.5s	PyPy 3: 128M
PyPy 3: 2.5s	Python 2: 64M
Python 2: 4.0s	Python 3: 64M
Python 3: 4.0s	

Perform the dynamic range minimum query.

Input Specification

The first line of input will contain two space-separated integers: N $(1 \leq N \leq 100\,000)$, the number of elements in the array, and M $(1 \leq M \leq 100\,000)$, the number of operations to perform.

The next N lines each contain one non-negative integer less than $1\,000\,000$. Specifically, line number i will contain element $i - 2$ of the array. Note that the array has zero-based indexing.

The following M lines contain one operation each. Each operation is either of the form `M i x`, indicating that element number i $(0 \leq i < N)$ is to be changed to x $(0 \leq x < 1\,000\,000)$, or the form `Q i j` $(0 \leq i \leq j < N)$ indicating that your program is to find the minimum value of the elements in the index range $[i, j]$ (that is, inclusive) in the current state of the array and print this value to standard output.

Output Specification

One integer, on its own line, for each `Q` statement: the answer to the query.

Sample Input

```
5 10
35232
390942
649675
224475
18709
Q 1 3
M 4 475689
Q 2 3
Q 1 3
Q 1 2
Q 3 3
Q 2 3
M 2 645514
M 2 680746
Q 0 4
```

Sample Output

```
224475
224475
224475
390942
224475
224475
35232
```