B. Segment Tree for the Minimum

time limit per test: 1 second
memory limit per test: 1024 megabytes
input: standard input
output: standard output

Now change the code of the segment tree so that the minimum on the segment is calculated instead of the sum.

Input

The first line contains two integers n and m ($1 \le n, m \le 100000$), the size of the array and the number of operations. The next line contains n numbers a_i, the initial state of the array ($0 \le a_i \le 10^9$). 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 ($0 \le i < n, 0 \le v \le 10^9$).
- 2 l r: calculate the minimum of elements with indices from l to $r - 1$ ($0 \le l < r \le n$).

Output

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

Example

input Copy

```
5 5
5 4 2 3 5
2 0 3
1 2 6
2 0 3
1 3 1
2 0 5
```

output Copy

```
2
4
1
```