Problem M. Yuno And Claris

Input file:	*standard input*
Output file:	*standard output*
Time limit:	6 seconds
Memory limit:	512 mebibytes

Yuno failed in a contest, so she was forced to wear a JK dress. Claris won the contest, so she bought some JK dresses for Yuno to wear. Each dress has a price. Because Claris has lots of money, she bought n dresses and put them in an array $a_1, a_2, \ldots, a_n$.

Because Yuno loves data structures, she invented two kinds of operations:

- "`1 l r x y`": For all the dresses in $a_l, a_{l+1}, \ldots, a_r$, if the price of a dress is x, change its price to y.
- "`2 l r k`": Yuno wants to wear the k-th cheapest dress from $a_l, a_{l+1}, \ldots, a_r$, so tell her the price of this dress.

Input

The first line of the input contains two integers n and m: the number of dresses and the number of operations ($1 \le n, m \le 10^5$). The second line contains n integers $a_1, a_2, \ldots, a_n$: the prices of the dresses ($1 \le a_i \le n$). Each of the following m lines describes an operation. If it is a modification, then the line is formatted as "`1 l r x y`", where $1 \le l \le r \le n$ and $1 \le x, y \le n$. If it is a query, then the line is formatted as "`2 l r k`", where $1 \le l \le r \le n$ and $1 \le k \le r - l + 1$.

Output

For each query, print a single line with a single integer: the answer to the query.

Example

standard input	standard output
3 3 2 3 3 2 1 3 1 1 1 3 3 1 2 1 3 2	2 1