

## D. Yet Another Array Queries Problem

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

You are given an array  $a$  of size  $n$ , and  $q$  queries to it. There are queries of two types:

- 1  $l_i r_i$  — perform a cyclic shift of the segment  $[l_i, r_i]$  to the right. That is, for every  $x$  such that  $l_i \leq x < r_i$  new value of  $a_{x+1}$  becomes equal to old value of  $a_x$ , and new value of  $a_{l_i}$  becomes equal to old value of  $a_{r_i}$ ;
- 2  $l_i r_i$  — reverse the segment  $[l_i, r_i]$ .

There are  $m$  important indices in the array  $b_1, b_2, \dots, b_m$ . For each  $i$  such that  $1 \leq i \leq m$  you have to output the number that will have index  $b_i$  in the array after all queries are performed.

### Input

The first line contains three integer numbers  $n, q$  and  $m$  ( $1 \leq n, q \leq 2 \cdot 10^5, 1 \leq m \leq 100$ ).

The second line contains  $n$  integer numbers  $a_1, a_2, \dots, a_n$  ( $1 \leq a_i \leq 10^9$ ).

Then  $q$  lines follow.  $i$ -th of them contains three integer numbers  $t_i, l_i, r_i$ , where  $t_i$  is the type of  $i$ -th query, and  $[l_i, r_i]$  is the segment where this query is performed ( $1 \leq t_i \leq 2, 1 \leq l_i \leq r_i \leq n$ ).

The last line contains  $m$  integer numbers  $b_1, b_2, \dots, b_m$  ( $1 \leq b_i \leq n$ ) — important indices of the array.

### Output

Print  $m$  numbers,  $i$ -th of which is equal to the number at index  $b_i$  after all queries are done.

### Example

input
6 3 5 1 2 3 4 5 6 2 1 3 2 3 6 1 1 6 2 2 1 5 3
output
3 3 1 5 2