Online, November 15th, 2021



boring ● EN

# Another Boring Problem (boring)

Luca has an array a of length N. Luca need to process Q queries. Each query is one of two types:

- 1  $x \to \text{ what is the value of } a_x \text{ modulo } 10^9 + 7?$
- $2 x, y, b, c \rightarrow \text{ for every } i \text{ in the range } [x, y], a_i \text{ becomes } \max(a_i, b \cdot i^c).$

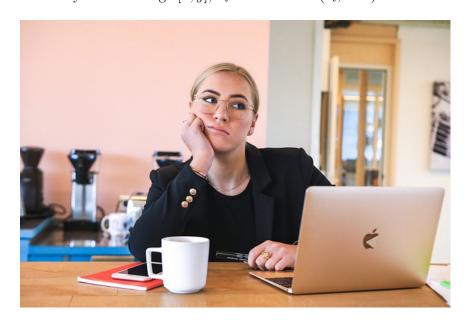


Figure 1: She's bored as well.

Help Luca find the answer to each type 1 query!

Among the attachments of this task you may find a template file boring.\* with a sample incomplete implementation.

#### Input

The first line contains the only integer N. The second line contains N integers  $a_i$ .

The third line contains the only integer Q. The following Q lines can be of the kind 1 x or 2 x y b c, depending on which kind of query they represent.

### Output

For every 1 x query in the input, you should write a line with an integer: the value of of  $a_x$  modulo  $10^9 + 7$ .

The modulo operation  $(a \mod m)$  can be written in C/C++/Python as (a % m) and in Pascal as  $(a \mod m)$ . To avoid the integer overflow error, remember to reduce all partial results through the modulus, and not just the final result!

Notice that if  $x < 10^9 + 7$ , then 2x fits into a C/C++ int and Pascal longint.

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#### **Constraints**

- $1 \le N \le 100000$ .
- $1 \le a_i \le 100\,000$  for each  $i = 1 \dots N$ .
- $1 \le Q \le 200\,000$ .
- $1 \le x \le N$  for each query of the first kind.
- $1 \le x, y \le N$  and  $1 \le b, c \le 100\,000$  for each query of the second kind.

### **Scoring**

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

```
- Subtask 1 (0 points)
                           Examples.
  8888
                           Every number, except for Q, is at most 10.
- Subtask 2 (20 points)
  - Subtask 3 (25 points)
                           c = 1.
  - Subtask 4 (15 points)
                           N \le 1000 and Q \le 100\,000.
  88888
                           N \le 50\,000 and Q \le 100\,000.
- Subtask 5 (20 points)
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- Subtask 6 (20 points)
                           No additional limitations.
  88888
```

### **Examples**

input	output
10	10
5 3 7 8 3 9 10 10 1 2	375
15	192
1 7	5
2 1 5 3 3	72
1 5	98
1 4	200
1 1	10
2 6 10 2 2	10240
1 6	99999307
1 7	824752476
1 10	590490
2 1 10 10 10	
1 1	
1 2	
1 10	
1 7	
1 3	

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## **Explanation**

In the first sample case the array contains 10 elements, which initially are:

The first query asks the value of the 7th element (which is the first 10).

The next query updates the values of the elements in positions 1 to 5. After the update the array contains:

After the second query of type 2, the array contains:

$$5, 24, 81, 192, 375, 72, 98, 128, 162, 200$$

After the last update of type 2, the array contains:

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