

## Problem Statement

Mara broke a number into  $N$  smaller parts. Joining these  $N$  parts together in the same order would create the whole, original number again.

**Example:** A number like 12345678 can be broken into ( $N = 4$ ) smaller parts: 123 45 6 78.

You are given  $N$  parts of the number in the same order in which they would create the original number upon joining. Let's index these parts from 1 to  $N$ . Also, there will be  $Q$  queries of the following two types:

- 1  $i$   $P$  - Replace the part at the  $i^{th}$  position with the new part  $P$ .
- 0  $i$   $j$  - Output the number modulo  $10^9 + 7$  formed by joining the parts from index  $i$  to  $j$  without *rearranging* them in any way.

The first integer in each query is the query type: 1 or 0.

## Constraints:

$$1 \leq N, Q \leq 10^5$$

$$1 \leq i \leq j \leq N$$

$$0 \leq P < 10^{18}$$

## Input Format

- The first line of input contains an integer  $N$ , defined above.
- The next line contains  $N$  space-separated parts.
- The next line contains an integer  $Q$ , denoting the total number of queries.
- The following  $Q$  lines will have three space-separated integers corresponding to the above 2 types of queries: 1  $i$   $P$  and 0  $i$   $j$ .
- Each original/updated part will not have a length of more than 18 and may have **leading zeros**.

## Output Format

For each query of the form 0  $i$   $j$ , print the required answer on a separate line.

## Sample Input

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

## Sample Output

```
12345
11345
```

## Explanation

For **Query 1** (0 1 5), the number formed by joining parts indexed from **1** to **5** is 12345.

For **Query 2** (1 2 1), it updates the part indexed at position[2] from **2** to **1**.

For **Query 3** (0 1 5), the number formed by joining parts indexed from **1** to **5** is 11345.