

Lazy Update

Assignment 2

Computer Programming
Due date: 10 October, 2019

Problem Statement: Given an array A of N integers, you have to perform Q updates on the array A. Each query is of the form: L R x, where you are required to increment all the elements between the Lth index and Rth(inclusive of both) index by x. Output the hash of final array after doing all Q updates.

Note Hash of the final array is defined as:

$$\left(\sum_{i=0}^{N-1} 107^i * A[i] \right) \% (10^9 + 7)$$

Input

First line has N and Q, number of elements in array and number of queries respectively. Second line has N space separated integers, the initial elements of the array. Next Q lines have queries of form L R x. L and R are 0-indexed.

Output

Output single integer, the hash of the final array.

Constraints

$1 \leq N \leq 10^5$
 $1 \leq Q \leq 10^6$
 $0 \leq L \leq R < N$
 $-10^9 \leq x \leq 10^9$

Sample Test Case

Input	Output
3 3 0 0 0 0 0 1 2 2 2 1 1 -1000000000	23648

Explanation

After the update, the final array is: [1, -1000000000, 2]. So final hash of the array is
 $(107 * 0 * 1 + 107^1 * (-1000000000) + 107^2 * 2) \% (10^9 + 7) = (-106999977101) \% (10^9 + 7) = 23648$