K-Query Online

Given a sequence of n numbers $a_1, a_2, ..., a_n$ and a number of k- queries. A k-query is a triple (i, j, k) ($1 \le i \le j \le n$). For each k-query (i, j, k), you have to return the number of elements greater than k in the subsequence $a_i, a_{i+1}, ..., a_j$.

Input

- Line 1: n ($1 \le n \le 30000$).
- Line 2: n numbers $a_1, a_2, ..., a_n$ ($1 \le a_i \le 10^9$).
- Line 3: q ($1 \le q \le 200000$), the number of k- queries.
- In the next q lines, each line contains 3 numbers a, b, c representing a k-query. You should do the following:
- i = a xor last_ans
- j = b xor last_ans
- k = c xor last_ans
- After that $1 \le i \le j \le n$, $1 \le k \le 10^9$ holds.

Where last_ans = the answer to the last query (for the first query it's 0).

Output

- For each k-query (i, j, k), print the number of elements greater than k in the subsequence $a_i, a_{i+1}, ..., a_j$ in a single line.

Example

Input:

```
6
8 9 3 5 1 9
5
2 3 5
3 3 7
0 0 11
0 0 2
3 7 4
```

Output:

```
1
1
0
0
2
```