Cman and XOR numbers
Time limit : 1 sec

Cman has an array of N integers. Cman has to answer Q queries where each query is processed in the following way:

1. Two integers *l* and *r* ($1 \le l \le r \le n$) are specified — bounds of query segment.
2. Integers, presented in array segment [*l*, *r*] (in sequence of integers $a_l, a_{l+1}, ..., a_r$) **odd number of times**, are written down.
3. XOR-sum of written down integers is calculated, and this value is the answer for a query. Formally, if integers written down in point 2 are $x_1, x_2, ..., x_k$, then Cman wants to know the value $x_1 \oplus x_2 \oplus \ldots \oplus x_k$, where $\oplus$ — operator of exclusive bitwise OR.

Note: The operator for bitwise XOR is '^' in C/C++

Constraints:
1 ≤ N ≤ 10^5
1 ≤ Q ≤ 10^5
1 ≤ l ≤ r ≤ N
0 <= A[i] <= 10000

Input:
First line contains the integer N. Second line contains N integers representing A[i]. The 3rd line contains the integer Q denoting number of queries. Next Q lines contains two integers l and r.

Output:
For each query print the required answer.

Sample Input:
5
1 2 2 3 1
2
2 3
2 4

Sample Output:
0
3