

D. Inversion Counting

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

A permutation of size n is an array of size n such that each integer from 1 to n occurs exactly once in this array. An inversion in a permutation p is a pair of indices (i, j) such that $i > j$ and $a_i < a_j$. For example, a permutation $[4, 1, 3, 2]$ contains 4 inversions: $(2, 1)$, $(3, 1)$, $(4, 1)$, $(4, 3)$.

You are given a permutation a of size n and m queries to it. Each query is represented by two indices l and r denoting that you have to reverse the segment $[l, r]$ of the permutation. For example, if $a = [1, 2, 3, 4]$ and a query $l = 2, r = 4$ is applied, then the resulting permutation is $[1, 4, 3, 2]$.

After each query you have to determine whether the number of inversions is odd or even.

Input

The first line contains one integer n ($1 \leq n \leq 1500$) — the size of the permutation.

The second line contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq n$) — the elements of the permutation. These integers are pairwise distinct.

The third line contains one integer m ($1 \leq m \leq 2 \cdot 10^5$) — the number of queries to process.

Then m lines follow, i -th line containing two integers l_i, r_i ($1 \leq l_i \leq r_i \leq n$) denoting that i -th query is to reverse a segment $[l_i, r_i]$ of the permutation. All queries are performed one after another.

Output

Print m lines. i -th of them must be equal to `odd` if the number of inversions in the permutation after i -th query is odd, and `even` otherwise.

Examples

input
3 1 2 3 2 1 2 2 3
output
odd even

input
4 1 2 4 3 4 1 1 1 4 1 4 2 3
output
odd odd odd even

Note

The first example:

1. after the first query $a = [2, 1, 3]$, inversion: $(2, 1)$;
2. after the second query $a = [2, 3, 1]$, inversions: $(3, 1), (3, 2)$.

The second example:

1. $a = [1, 2, 4, 3]$, inversion: $(4, 3)$;
2. $a = [3, 4, 2, 1]$, inversions: $(3, 1), (4, 1), (3, 2), (4, 2), (4, 3)$;
3. $a = [1, 2, 4, 3]$, inversion: $(4, 3)$;
4. $a = [1, 4, 2, 3]$, inversions: $(3, 2), (4, 2)$.