16/11/2017 HackerRank

Yet Another Minimax Problem





You are given n non-negative integers, $a_0, a_1, \ldots, a_{n-1}$. We define the *score* for some permutation (p) of length n to be the maximum of $a_{p_i} \oplus a_{p_{i+1}}$ for $0 \le i < n-1$.

Find the permutation with the minimum possible score and print its score.

Note: ⊕ is the exclusive-OR (XOR) operator.

Input Format

The first line contains single integer, n, denoting the number of integers.

The second line contains n space-separated integers, $a_0, a_1, \ldots, a_{n-1}$, describing the respective integers.

Constraints

- $2 \le n \le 3000$
- $0 \le a_i \le 10^9$

Output Format

Print a single integer denoting the minimum possible score.

Sample Input 0

1 2 3 4

Sample Output 0

5

Sample Input 1

3 1 2 3

Sample Output 1

2

Explanation

Sample Case 0:

The permutation with the *minimum score* is (3, 2, 1, 4):

$$a_0 \oplus a_1 = 3 \oplus 2 = 1$$

16/11/2017 HackerRank

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a_1 \oplus a_2 = 2 \oplus 1 = 3
a_2 \oplus a_3 = 1 \oplus 4 = 5
```

Because the permutation's score is the maximum of these values, we print 5 on a new line.

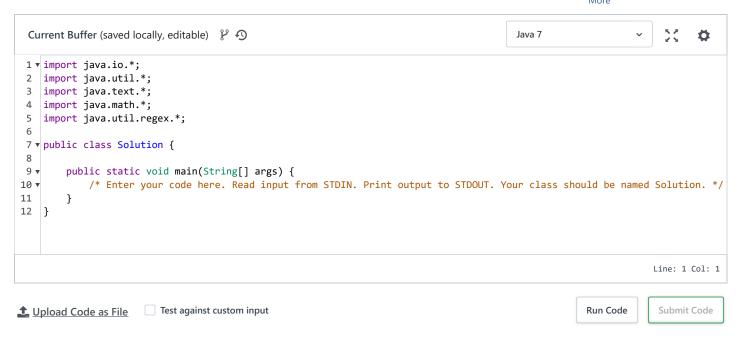
Sample Case 1:

The permutation with the minimum score is (1, 3, 2):

```
a_0 \oplus a_1 = 1 \oplus 3 = 2
a_1 \oplus a_2 = 3 \oplus 2 = 1
```

Because the permutation's score is the maximum of these values, we print 2 on a new line.

f in Submissions:1232
Max Score:30
Difficulty: Medium
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More



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