Max XOR Subsequence

Input file:	`standard input`
Output file:	`standard output`
Time limit:	0.25 seconds
Memory limit:	256 megabytes

Given a sequence of N non-negative integers $A_1, A_2, ..., A_N$, You are to find some subsequence $A_{i_1}, A_{i_2}, ..., A_{i_k}$ $(1 \leq i_1 < i_2 < ... < i_k \leq N)$ such, that $A_{i_1} \oplus A_{i_2} \oplus ... \oplus A_{i_k}$ has a maximum value.

Note: The $\oplus$ means the bitwise XOR operation.

Input

The first line contains a single integer N $(1 \leq N \leq 10^3)$, denoting the length of the sequence.

The next line contains N numbers, $(1 \leq A_i \leq 10^{18})$

Output

A single line containing the answer to the problem.

Example

standard input	standard output
3 11 9 5	14