An Easy Problem

Given an array A with N non-negative integers a_i ($1 \leq i \leq N$),find the longest subsequence B, where b_i & b_{i-1} is not 0.

NOTE: & is the bitwise and operation. A subsequence is a sequence that can be derived from another sequence by deleting some elements without changing the order of the remaining elements. The two adjacent elements in the subsequence B don't have to be consecutive in the original array A.

Input Specification

The first line consists of one integer N ($1 \leq N \leq 100\,000$) The second line consists of N non-negative integers, a_i ($0 \leq a_i \leq 10^9$)

Output Specification

One integer, the longest length of the subsequence B.

Sample Input 1

```
4
1 2 3 4
```

Sample Output 1

```
2
```

Sample Input 2

```
8
1 2 1 2 1 2 1 4
```

Sample Output 2

```
4
```