Problem G. Almost Arithmetical Progression

Time limit 1000 ms
Mem limit 262144 kB

Gena loves sequences of numbers. Recently, he has discovered a new type of sequences which he called an almost arithmetical progression. A sequence is an *almost arithmetical progression*, if its elements can be represented as:

- $a_1 = p$, where p is some integer;
- $a_i = a_{i-1} + (-1)^{i+1} \cdot q$ $(i > 1)$, where q is some integer.

Right now Gena has a piece of paper with sequence b, consisting of n integers. Help Gena, find there the longest subsequence of integers that is an almost arithmetical progression.

Sequence $s_1, s_2, \ldots, s_k$ is a subsequence of sequence $b_1, b_2, \ldots, b_n$, if there is such increasing sequence of indexes $i_1, i_2, \ldots, i_k$ $(1 \le i_1 < i_2 < \ldots < i_k \le n)$, that $b_{i_j} = s_j$. In other words, sequence s can be obtained from b by crossing out some elements.

Input

The first line contains integer n $(1 \le n \le 4000)$. The next line contains n integers $b_1, b_2, \ldots, b_n$ $(1 \le b_i \le 10^6)$.

Output

Print a single integer — the length of the required longest subsequence.

Sample 1

Input	Output
2 3 5	2

Sample 2

Input	Output
4 10 20 10 30	3

Note

In the first test the sequence actually is the suitable subsequence.

In the second test the following subsequence fits: $10, 20, 10$.