Inversion MIS

Input file:	`stdin`
Output file:	`stdout`
Time limit:	2 seconds
Memory limit:	64 megabytes

Kraw the Krow is playing a game! Being the loner he is, he's playing the game with himself :(

This game involves finding the maximum independent set of a very special graph. The Maximum Independent Set (MIS) of a graph the largest subset of vertices such that no pair of vertices are adjacent to each other. He constructs the graph as follows:

First, he chooses N distinct numbers. Then, he writes them out in a random order, equally spaced in a row. Then, he writes them out in sorted order, equally spaced in a row below the first row.

Next, for each number, he finds its position in the first and second row and draws a straight line connecting them. He labels the line according to the number for which the line represents.

Then, for every pair of intersecting lines representing numbers i and j, he draws an undirected edge between nodes i and j in his graph.

After playing the game many times, Kraw the Krow has become lazy. Help him with his task!

Input

The first line contains an integer N, which is the number of numbers in the set.

The second line contains the N positive integers k_i in the order that they are written in the first row.

$N \leq 100,000$
$k_i \leq 1,000,000,000$

Output

A single integer indicating the size of the maximum independent set.

Examples

stdin	stdout
3 3 2 1	1

Note

Sample input explanation:

If you draw the lines out yourself, you'll see that every line intersects every other line, thus the graph is complete. And as we all know, the size of the MIS in a complete graph is 1.