

Lalith Dosa

Lalith is going to have dinner and he has N dosas in front of him with their prices represented by sequence of integers $a_1, a_2, a_3 \dots a_n$.

And he has decided to eat in a different manner . You are free to replace the price of any dosa with any positive integer.

How many prices(integers) must be replaced to make the resulting sequence strictly increasing?

Input

The first line of the test case contains an integer N - the number of dosas.

The next line contains N space separated integers where the i th integer is a_i , representing the price of i -th dosa.

Output

Output the minimal number of prices(integers) that should be replaced to make the sequence strictly increasing.

Constraints

$$0 < N \leq 10^6$$

$$0 < a_i \leq 10^9$$

Sample Input #01

6

1 7 10 2 20 22

Sample Output #01

1

Sample Input #02

5

1 2 2 3 4

Sample Output #02

3

Explanation

In the first sample input, we can replace 2 with any integer between 11 and 19 to make the price sequence strictly increasing, hence the output is 1.

In the second sample input, we can obtain 1, 2, 3, 4, 5 by changing the last three elements of the price sequence.