

# Flipping the Middle

Input file:            **standard input**  
Output file:           **standard output**  
Time limit:            2 seconds  
Memory limit:         1024 megabytes

For a sequence  $A$  of length  $N$  and  $1 \leq i \leq j \leq N$ , let  $f(i, j)$  be the sequence obtained by reversing the contiguous subsequence of  $A$  from the  $i$ -th element to the  $j$ -th element. For example, if  $A = [3, 1, 4, 1, 5]$ , then  $f(2, 3) = [3, 4, 1, 1, 5]$ ,  $f(1, 5) = [5, 1, 4, 1, 3]$ , and  $f(1, 1) = [3, 1, 4, 1, 5]$ .

For  $f(i, j)$ , there are  $\frac{N(N+1)}{2}$  different ways to select  $i$  and  $j$ . Given the sequence  $A$ , find the number of unique sequences among all possible  $f(i, j)$ s.

## Input

The first line of input contains  $N$ , denoting the length of sequence  $A$ . ( $1 \leq N \leq 500\,000$ )

The second line of input contains  $N$  space-separated integers  $A_1, A_2, \dots, A_N$ , denoting the elements of  $A$ . ( $1 \leq A_i \leq 10^9$ )

## Output

In the first line, print the number of unique sequences among all possible  $f(i, j)$ s.

## Examples

standard input	standard output
4 3 1 4 1	6
1 20250726	1

## Note

In the first example, the following are all possible  $f(i, j)$  sequences.

- $f(1, 1) = f(2, 2) = f(2, 4) = f(3, 3) = f(4, 4) = [3, 1, 4, 1]$
- $f(1, 2) = [1, 3, 4, 1]$
- $f(1, 3) = [4, 1, 3, 1]$
- $f(1, 4) = [1, 4, 1, 3]$
- $f(2, 3) = [3, 4, 1, 1]$
- $f(3, 4) = [3, 1, 1, 4]$