

Inversions

Time Limit: 2.0s **Memory Limit:** 64M
Python 3: 3.0s

Given a permutation of the integers 1 to N , print out the number of inversions in the array.

An inversion is defined as a pair of indices, i, j such that $i \neq j, i < j, a_i > a_j$.

Input Specification

The first line will contain the integer N ($1 \leq N \leq 10^5$).

The second line will contain N integers, a_1, a_2, \dots, a_N ($1 \leq a_i \leq N$).

It is guaranteed the second line will contain a valid permutation of the integers from 1 to N .

Output Specification

Output the number of inversions in the permutation.

Sample Input

```
4
3 2 1 4
```

Sample Output

```
3
```