

Inversions

Time: 1 sec / Memory: 256 MB

Problem Statement

You are given an array A of N integers. An inversion in the array is a pair of indices (i, j) such that $i < j$ and $A_i > A_j$. Your task is to count the total number of such inversions in the array.

Hint: Use `long long` type for computing the answer to avoid integer overflow.

Input

The first line contains one integer N .

The second line contains N integers A_1, A_2, \dots, A_n .

Output

Output the total number of inversions in the array.

Constraints

$$3 \leq N \leq 2 \cdot 10^5$$

$$1 \leq A_i \leq 10^9$$

Example

Input1:

```
6
3 4 2 5 3 2
```

Output1:

```
8
```

