Problem C
Counting Inversions

Time limit: 1 second
Memory limit: 2048 megabytes

Problem Description

Given an array a, which is a permutation of integers $1, 2, \ldots, n$, count the number of inversions in it. In other words, count the number of integer pairs (i, j) such that $1 \leq i < j \leq n$ and $a_i > a_j$.

Input Format

The first line of the input contains an integer n. The second line of the input contains n space-separated integers $a_1, \ldots, a_n$.

Output Format

Output the number of inversions in a in one line.

Technical Specification

- $1 \leq n \leq 3 \times 10^5$
- $1 \leq a_i \leq n$ for $i = 1, 2, \ldots, n$
- It is guaranteed that $a_1, \ldots, a_n$ is a permutation of $1, 2, \ldots, n$.

Scoring

1. (4 points) $1 \leq n \leq 1000$
2. (16 points) No additional constraints.

Sample Input 1

```
5
2 5 3 4 1
```

Sample Output 1

```
6
```

Sample Input 2

```
7
4 2 5 7 6 3 1
```

Sample Output 2

```
12
```

Sample Input 3

```
1
1
```

Sample Output 3

```
0
```