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Inversions

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Inversions

2.0/2.0 points (graded)

Input file:	inversions.in
Output file:	inversions.out
Time limit:	2 seconds
Memory limit:	256 megabytes

Recall that an inversion in an integer sequence A is a situation when i < j, but $A_i > A_j$.

Given a sequence of integers. Your task is to count the number of inversions in it.

Hint: to make it faster, you may adapt the mergesort algorithm to solve this problem.

Input

The first line of the input file contains an integer n ($1 \leq n \leq 100\,000$) – the number of elements in the sequence. The sequence itself follows in the second line. All numbers in this sequence do not exceed 10^9 by the absolute value.

Output

Output the number of inversions in the first and only line of the output file.

Example

inversions.in	inversions.out
10 1 8 2 1 4 7 3 2 3 6	17
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Discussion
Topic: 06: 3rd Week Problems / Inversions

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