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984 . Assignment 3 - Inversions (Deadline: 2019-10-05 23:59:59)

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Description

The **inversion number** – the count of **inversions** of an array – is a common measure of the unsortedness of an array.
Given an array a, find the **inversion number** of a.

We call a pair (i, j) an **inversion** if $i < j$ and $a_i > a_j$.

Input Format

Input begins with n which indicates the size of a.
The next line contains n integers which form a.

- $2 \leq n \leq 10^7$
- $-10^8 \leq a_i \leq 10^8$

Output Format

Output the **inversion number** of a
As the number can be quite large, output it **modulo** 524287.

Sample Input #1

```
4
4 3 2 1
```

Sample Output #1

```
6
```