Chaos Strings

Little Lovro likes to play games with words. During the last few weeks he realized that some words don't like each other.

The words A and B don't like each other if the word A is lexicographically before the word B, but the word B' is lexicographically before the word A', where X' stands for the word X reversed (if X="kamen" then X'="nemak"). For example, the words "lova" and "novac" like each other, but the words "aron" and "sunce" don't like each other.

Given some set of the words, we define the degree of chaos of the set as the number of pairs of different words that don't like each other.

Write a program that, given a set of words, finds the chaos degree for the set.

Input

The first line of input contains an integer N, $2 \le N \le 100\,000$.

Each of the following N lines contains one word – a sequence of at most 10 lowercase letters of the English alphabet ('a'-'z'). There will be no two identical words in the set.

Output

The first and only line of output should contain a single integer – the chaos degree of the given set of words.

Note: use 64-bit signed integer type (int64 in Pascal, long long in C/C++).

Sample

input

2
lopta
kugla

output

0

input

4
lova
novac
aron
sunce

input

branimir
vladimir
tom
kruz
bred
pit
zemlja
nije
ravna
ploca
zapalio
zito

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