Problem N. Challenge Problem 1

Time limit   2000 ms

Mem limit   262144 kB

After learning a lot about space exploration, a little girl named Ana wants to change the subject.

Ana is a girl who loves palindromes (string that can be read the same backwards as forward). She has learned how to check for a given string whether it's a palindrome or not, but soon she grew tired of this problem, so she came up with a more interesting one and she needs your help to solve it:

You are given an array of strings which consist of only small letters of the alphabet. Your task is to find **how many** palindrome pairs are there in the array. A palindrome pair is a pair of strings such that the following condition holds: **at least one** permutation of the concatenation of the two strings is a palindrome. In other words, if you have two strings, let's say "`aab`" and "`abcac`", and you concatenate them into "`aababcac`", we have to check if there exists a permutation of this new string such that it is a palindrome (in this case there exists the permutation "`aabccbaa`").

Two pairs are considered different if the strings are located on **different indices**. The pair of strings with indices (i, j) is considered **the same** as the pair (j, i).

Input

The first line contains a positive integer N ($1 \leq N \leq 100\,000$), representing the length of the input array.

Eacg of the next N lines contains a string (consisting of lowercase English letters from '`a`' to '`z`') — an element of the input array.

The total number of characters in the input array will be less than $1\,000\,000$.

Output

Output one number, representing **how many palindrome pairs** there are in the array.

Examples

Input	Output
3 aa bb cd	1

Input	Output
6 aab abcac dffe ed aa aade	6

Note

The first example:

1. $aa + bb \rightarrow abba$.

The second example:

1. $aab + abcac = aababcac \rightarrow aabccbaa$
2. $aab + aa = aabaa$
3. $abcac + aa = abcacaa \rightarrow aacbcaa$
4. $dffe + ed = dffeed \rightarrow fdeedf$
5. $dffe + aade = dffeaade \rightarrow adfaafde$
6. $ed + aade = edaade \rightarrow aeddea$