

HOME TOP CATALOG CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

D. Palindrome Pairs

time limit per test: 4.0 s memory limit per test: 256 megabytes input: standard input output: standard output

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 ($1 \le N \le 100\,000$), 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

Сору
Сору
Сору

Note

output

ed aa

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. $dffe + aade = dffeaade \rightarrow adfaafde$

 $6. \text{ ed} + \text{aade} = \text{edaade} \rightarrow \text{aeddea}$

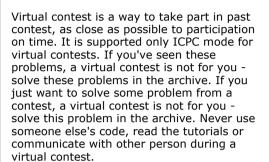
<u>Topic Stream Mashup: Bitwise</u> <u>Operations</u>

Finished

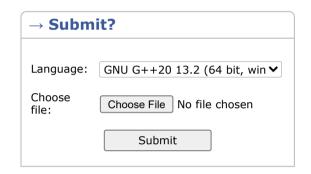
Practice



→ Virtual participation



Start virtual contest



→ Last submissions		
Submission	Time	Verdict
268683137	Jul/04/2024 00:43	Accepted
268679061	Jul/03/2024 23:53	Wrong answer on test 1

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→ Contest materials

• Topic tutorial video (en)

Сору