

Dadud Inudaed

You and your friend C.J. Rofling are studying magic arts at the Hogwarts School of Witchcraft and Wizardry. After lots of practice and learning, the two of you discovered that the same magic spell effect can be produced by not just one, but in fact by many different magic words.

If two magic words produce the same effect, they are called *harmonic*. Your conjecture is that two (unordered) magic words A and B are harmonic if and only if they are of equal length and the following conditions hold for all characters in the words:

- If two characters of A are equal, then the corresponding characters of B are also equal. Formally, whenever we have $A_i = A_j$ for two positions i and j in word A , then $B_i = B_j$ must also hold.
- If two characters of A are different, then the corresponding characters of B are also different. Formally, whenever we have $A_i \neq A_j$ for two positions i and j , then $B_i \neq B_j$ must also hold.

Now you are wondering how many of the spells that you've learned produce the same magical effect. You are given a list of common magic words, and your task is to count the number of harmonic word pairs.

Input

The first line of the input contains an integer N ($1 \leq N \leq 100\,000$), the number of magic words. After this, there are N lines, each containing a string: the magic words. Each string consists of characters A-Z and has a length of at most 50 characters.

Output

Print a single integer: the number of harmonic pairs.

Examples

input	output
6 AAB ABKA SSG TSGT ZZZZ KEAK	4
2 DADUDINUDAED AVADAKEDAVRA	1

Explanation

The harmonic pairs in the first sample input are (AAB, SSG), (ABKA, TSGT), (ABKA, KEAK) and (TSGT, KEAK).