

# **Incantations**

## **Description**

“bomibolomi...”, Master Lotus defeated the Ben priests with his sophisticated and powerful incantations. The story happened hundreds of years ago in Tibet, when Master Lotus was invited by the Tsenpo to preach Buddhism but was opposed by the Bens.

Many Tibetans admired Master Lotus’ powerfulness, but few knew the difficulties he had faced.

That was a war between two parties of incantators: Lotus and the Bens. The Ben priests, like Lotus, were also sophisticated in cursing (i.e evil incantations). In order to defeat them, Lotus must first study the evil incantations of the Bens. He got a series of incantations of the Bens from the Tsenpo (king of Tibet).

However, Master Lotus did not have much time in Tibet. There are duplicates in the list of evil incantations. To save time, he wanted de-duplicate and know the total length of the distinct evil incantations.

## **Input**

The first line of the input contains an integer N, which is length of the series.

This is followed by N lines, each of which contains a string which denotes an incantation. For convenience, Acer has modified the incantations such that they contain only lower case Latin letters.

$1 \leq N \leq 100000$ .

Length of each incantation is between 1 and 10 (inclusive).

## **Output**

Output the total length of the distinct evil incantations.

## Sample Input 1

6

letitbe

mihon

mihon

omi

omi

letitbe

## Sample Output 1

15

Explanation: there are 3 distinct incantations, namely “letitbe”, “omi”, “mihon”.

## Hints

Possible solutions:

1.  $O(N^2)$  solution. For every incantation, use a for loop to check whether there exist same incantations as it. This solution can only pass 60% of the test data.
2. Binary search. For every incantation, use binary search to check whether it is already in the list. If not, insert in to the list.
3. Sorting. Although this is not in the scope of this PE, you may use it if you want to.
4. Hashing. Although this is not in the scope of this PE, you may use it if you want to.