Treasure Hunt

The pirates are on a hunt to the biggest treasure chase of the millenium. The found 'N' clues each consisting of a string in each clue. Let the N strings be - a1,a2,a3 …… an. To find the code of the treasure box they need to find the sum of total number of combination (i, j) [the combination are unordered] such that - length of longest common prefix of (ai, aj) = M. They need to do this for all k that lies in [0, max(length(ai))].

Constraints:

1 <= N <= 10^5

Sum of all length of all strings is greater than 1 and lesser than 10^6.

Input Format:

First line of the test case will be the number of strings N .

Then N lines follows. On each line you will find a string.

Output Format:

The output contains an single integer denoting the sum of all the number combinations that can be produced

Sample Input

3

ab

abc

m

Sample Output

3

Difficulty

Hard

Explanation

Total LCP of length 0 = 2 i.e. (1,3) , (2,3)

Total LCP of length 1 = 0

Total LCP of length 2 = 1 i.e. (1,2)

Total LCP of length 3 = 0