Time Limit: 1 sec.

Whu is building a new filesystem which she claims to be much more efficient than the existing ones. This Whu File System works as following,

1. It takes a list of filenames one by one.
2. Calculates the hash value for every filename (procedure of the hash value calculation is given below)
3. For every file, all the files that came before the current file and with a larger hash value, they all need to move one step to make space for the current file.
4. Doing the same for all the files in the list, we get the files sorted according to their hash values.

Now for the hash value calculation,

1. To calculate the hash value for a file, take only the file names that have come before the current file.
2. Take the prefix of length 1 as a substring from the current filename and count how many other files have the same prefix on their names
3. Then take the prefix of length 2 as a substring and count how many files have it too and so on up to the whole filename.
4. Multiply all those numbers which are positive and take the mod of N (total number of files in the file system), the found number is the hash value.
5. If there are no such positive numbers then the hash value is 1.

Given a list of file names (only includes 0, 1, … 9 characters), all having the same length. File names can be duplicate, consider them as different files. Count the number of file moves for the given file name list according to the Whu file system.

Input:
On the first line the total number of file names in the file system **N (5<=N<=10^5)**.
On every of the next **N** lines, there will be a filename all having the same length (maximum length will be **16**) which will come sequentially in Whu's filesystem.

Output:
Print the total number of file moves in a single line according to the Whu file system.

Sample input:

4
1246
1244
1111
1241

Sample output:

3

Explanation:

Total number of files in the file system is 4.

For file name 1246 there are no previous file names, so the hash value is 1

For file name 1244 there is only one file with prefix 1 and one file with prefix 12, one file for prefix 124 and none for the prefix 1244. So the hash value is (1*1*1)%4 which is 1. There are no files with a larger hash value, so no file movements.

Similarly, for file name 1111 the hash value is 1 as there are no files with any of its prefixes.

And finally, for 1241, there are three files with prefix 1, two files with prefix 12, two files with prefix 124 and none for the prefix 1241. So the hash value is (3*2*2)%4 which is 0, As all the other files have larger hash value than this file, all of them have to move. So there are 3 file movements in total. Hence the output is 3.