

Problem 4

Given **N** strings, print the rank of the strings when sorted in lexicographical order. Rank of a string is defined as the position of string in the input starting from **1**. No string is repeated in the input.

Input

First line contains **N**, the number of strings. The next **N** lines contain one string **S** per line.

Output

Print **N** integers one per line denoting the rank of strings.

Example

Input:

4
z
b
a
c

Output:

3
2
4
1

Constraints:

N = 100000

|S| = 20

Strings are made up lowercase letters only.