B. New Problem

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Coming up with a new problem isn't as easy as many people think. Sometimes it is hard enough to name it. We'll consider a title original if it doesn't occur as a substring in any titles of recent Codeforces problems.

You've got the titles of n last problems — the strings, consisting of lowercase English letters. Your task is to find the shortest original title for the new problem. If there are multiple such titles, choose the lexicographically minimum one. Note, that title of the problem can't be an empty string.

A *substring* $s[l \ldots r]$ $(1 \le l \le r \le |s|)$ of string $s = s_1 s_2 \ldots s_{|s|}$ (where $|s|$ is the length of string s) is string $s_l s_{l+1} \ldots s_r$.

String $x = x_1 x_2 \ldots x_p$ is *lexicographically smaller* than string $y = y_1 y_2 \ldots y_q$, if either $p < q$ and $x_1 = y_1, x_2 = y_2, \ldots, x_p = y_p$, or there exists such number r $(r < p, r < q)$, that $x_1 = y_1, x_2 = y_2, \ldots, x_r = y_r$ and $x_{r+1} < y_{r+1}$. The string characters are compared by their ASCII codes.

Input

The first line contains integer n $(1 \le n \le 30)$ — the number of titles you've got to consider. Then follow n problem titles, one per line. Each title only consists of lowercase English letters (specifically, it doesn't contain any spaces) and has the length from 1 to 20, inclusive.

Output

Print a string, consisting of lowercase English letters — the lexicographically minimum shortest original title.

Examples

input
5 threehorses goodsubstrings secret primematrix beautifulyear

output
j

input
4 aa bdefghijklmn opqrstuvwxyz c

output
ab

Note

In the first sample the first 9 letters of the English alphabet (`a, b, c, d, e, f, g, h, i`) occur in the problem titles, so the answer is letter `j`.

In the second sample the titles contain 26 English letters, so the shortest original title cannot have length 1. Title `aa` occurs as a substring in the first title.