

## C. Fox And Names

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

Fox Ciel is going to publish a paper on FOCS (Foxes Operated Computer Systems, pronounce: "Fox"). She heard a rumor: the authors list on the paper is always sorted in the *lexicographical* order.

After checking some examples, she found out that sometimes it wasn't true. On some papers authors' names weren't sorted in *lexicographical* order in normal sense. But it was always true that after some modification of the order of letters in alphabet, the order of authors becomes *lexicographical*!

She wants to know, if there exists an order of letters in Latin alphabet such that the names on the paper she is submitting are following in the *lexicographical* order. If so, you should find out any such order.

*Lexicographical* order is defined in following way. When we compare  $s$  and  $t$ , first we find the leftmost position with differing characters:  $s_i \neq t_i$ . If there is no such position (i. e.  $s$  is a prefix of  $t$  or vice versa) the shortest string is less. Otherwise, we compare characters  $s_i$  and  $t_i$  according to their order in alphabet.

### Input

The first line contains an integer  $n$  ( $1 \leq n \leq 100$ ): number of names.

Each of the following  $n$  lines contain one string  $name_i$  ( $1 \leq |name_i| \leq 100$ ), the  $i$ -th name. Each name contains only lowercase Latin letters. All names are different.

### Output

If there exists such order of letters that the given names are sorted lexicographically, output any such order as a permutation of characters 'a'-'z' (i. e. first output the first letter of the modified alphabet, then the second, and so on).

Otherwise output a single word "Impossible" (without quotes).

### Examples

input
3 rivest shamir adleman
output
bcdefghijklmnopqrsatuvwxyz

input
10 tourist petr wjmzbr yeputons vepifanov scottwu oooooooooooooooooooo subscriber rowdark tankengineer
output
Impossible

### Codeforces Round #290 (Div. 2)

Finished

#### → Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

#### → Problem tags

dfs and similar

graphs

sortings

No tag edit access

#### → Contest materials

• Announcement



• Tutorial



input
10 petr egor endagorion feferivan ilovetanyaromanova kostka dmitriyh maratsnowbear bredorjaguartumik cgyforever
output
aghjlnopefikdmbcqrstuvwxyz

input
7 car care careful carefully becarefuldontforgetsomething otherwiseyouwillbehacked goodluck
output
acbcdefhijklmnogpqrstuvwxyz