

A. Anonymous Alphabet

time limit per test: 1 second

memory limit per test: 256 megabytes

An unknown civilization uses a unique alphabet. You will be given a dictionary of words from their language. The words are sorted lexicographically according to the rules of their alphabet. Your task is to deduce the correct order of characters in their alphabet.

If multiple solutions exist, return any of them. If it is impossible to determine a valid alphabet order, output "Doh".

Input

- The first line of the input contains the integer N ($1 \leq N \leq 100$) – the number of the words in the dictionary.
- The next following N lines contains a single non-empty word. Each for consists of lowercase English letters ('a'-'z'), with lengths between 1 and 100 characters.

Output

- Output a string representing any valid alphabet order according to the given dictionary.
- If there is no valid alphabet order, output Doh.

Example

input

Скопировать

```
5
mnp
mnq
mo
z
zx
```

output

Скопировать

```
xpnmqoz
```