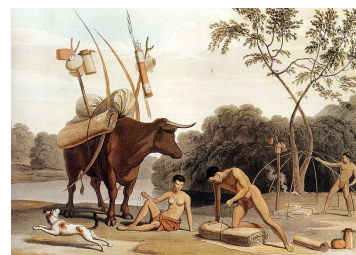


K Khoikhoi Dralinpome

Time limit: 1s

Despite being barred from speaking at the Boring Annual Palindrome Convention for being too progressive, your girlfriend Jeannetta has continued her research on dralinpomes. A dralinpome is, of course, a word in which the letters can be rearranged to form a palindrome. For example, *khoikhoi* is a dralinpome, because you can rearrange the letters to form the string *khoiiohk*, which is a palindrome, since it reads the same forwards and backwards.



The Khoikhoi are a people from Southern Africa. Public Domain by Samuel Daniell on Wikimedia Commons

Last year, Jeannetta found all the dralinpomes in the dictionary, but she's not satisfied yet. Luckily, she discovered that in Dutch, you can concatenate nouns to make a compound word. Even if it means setting a stand somewhere in a dark corner outside of the convention center, people have to hear her breakthrough talk **HOW THE DUTCH DOMINATE DRALINPOMES!**

Unfortunately, Jeannetta is not quite satisfied with her talk. The longest dralinpome she could come up with was *khoikhohuttententoonstellingsbudgetbeheerder* (treasurer for the famously long exposition of African housings), with only 45 characters! She's fairly sure no one will show up to her talk without a longer example, so she has asked you to help.

Given a list of n nouns, determine the longest dralinpome that can be formed by concatenating some of them. You may use each noun no more times than it is provided.

Input

The input consists of:

- One line with an integer n ($1 \leq n \leq 32$), the number of nouns.
- n lines, each with a string w ($1 \leq |w| \leq 20$), a noun. The nouns only consist of English lowercase letters (a-z).

Output

If it is possible to form a dralinpomic compound word, output “possible” followed by a longest possible such word. Otherwise, output “impossible”.

If there are multiple valid solutions, you may output any one of them.

Sample Input 1

```
2
multinomiaal
coefficient
```

Sample Output 1

```
possible
multinomiaalcoefficient
```

Sample Input 2

```
5
auto
band
ventiel
dopjes
fabriek
```

Sample Output 2

```
impossible
```

Input 3

```
7
khoikhoi
soldaten
hutten
tentoonstellingen
terreinen
budget
beheerder
```

Output 3

```
possible
khoikhoihuttententoonstellingenbudgetbeheerder
```

Sample Input 4

```
3
ei
ei
ei
```

Sample Output 4

```
possible
eiei
```