

I International Interpolation

Time limit: 1s

It is your first day at work in your new job, what an exciting day! You have recently got a job at the Student Support Desk of RUG, sometimes called the Glorious Adolescent Problem-solving Center (GAPC).

Your first task is to print letters of admission for new international students that are coming to the RUG. Unfortunately, this can be quite problematic because international students have many non-standard characters in their names that your computer cannot handle.



However, as you also work part-time at Klippa, you have a bunch of ideas on how to work with documents, so you quickly found a solution! What if instead of displaying these characters you find the letter that is in the alphabet exactly halfway between the two surrounding letters and replace it with that? And if there are two candidates, you can just pick the one that goes first in the alphabet. If the character appears at the start of the word in a name, then you can just put “a” and if it is at the end of the word, you can insert “z”. I am sure nobody will notice, and internationals are used to having their names butchered anyway...

However, if there are two non-standard characters somewhere in a row, then you should not print the name, as you do not have enough information to infer from. (This rule also applies to adding letters at the start and end of the word.)

Input

The input consists of:

- One line with an integer n ($1 \leq n \leq 200$), the number of names in the input sequence.
- n lines each containing a non-empty string of maximum length 10^3 , representing a name of an international student with some characters replaced by “#” to indicate the presence of a non-standard character.

Output

Output the modified names, each on a separate line.

If there are two non-standard characters in a row output “impossible” instead.

Sample Input 1

```
2
a#d
a##e
```

Sample Output 1

```
abd
impossible
```

Sample Input 2

```
2
a#c
#a#e#
```

Sample Output 2

```
abc
aacez
```