

Problem SCROBBLE: Scrobble

You are playing a word game called *Scrobble* with your friends. The game consists of a number of 6-sided dice with one letter on each side. The letters on the dice do not have to be distinct, so there can be a die with 6 a's.

You can arrange dice next to each other on the table and then a word is formed by letters on the top side of the dice from left to right. Note that rotating 'p' upside down would read like 'd', but this is not allowed since all letters on the dice have clearly marked orientation and cannot be rotated.

Each player is given N dice and tries to build the longest English word that can be found in the huge Oxford English dictionary your friends have. You thought of an English word w but you are not sure if this word can be built using the N dice you were assigned, so you decided to write a program that will help you with the game.

Input

The first line contains a word w of length at least 1 and at most 200. The next line contains an integer N , $1 \leq N \leq 200$. The next N lines each contain a six-letter word describing the letters on one of your dice.

All letters in the input will be lower-case and from 'a' to 'z'.

Output

If it is possible to build word w from the N dice you were given, print `Possible`. Otherwise print `Impossible`.

Sample Input 1

```
photographer
12
abcdef
qwerty
hjklop
ground
rrrrrr
oooooo
aaaaaa
pppppp
hhhhhh
oooooo
tttttt
eeeeee
```

Sample Output 1

```
Impossible
```

Sample Input 2

```
dog
4
abcdef
qwerty
hjklop
ground
```

Sample Output 2

```
Possible
```