CSE 241 Assignment #2 - Decryption Spring 2015

**Due date: Mar. 19 (Thu) - 20:00**

## Description

A common but insecure method of encrypting text is to permute the letters of the alphabet. That is, in the text, each letter of the alphabet is consistently replaced by some other letter. So as to ensure that the encryption is reversible, no two letters are replaced by the same letter.

A common method of cryptanalysis is the known plaintext attack. In a known plaintext attack, the cryptanalist manages to have a known phrase or sentence encrypted by the enemy, and by observing the encrypted text then deduces the method of encoding.

Your task is to decrypt several encrypted lines of text, assuming that each line uses the same set of replacements, and that one of the lines of input is the encrypted form of the plaintext

`the quick brown fox jumps over the lazy dog`

## Input

The input begins with a single positive integer on a line by itself indicating the number of the cases following, each of them as described below. This line is followed by a blank line, and there is also a blank line between two consecutive inputs.

The input consists of several lines of input. Each line is encrypted as described above. The encrypted lines contain only lower case letters and spaces and do not exceed 80 characters in length. There are at most 100 input lines.

## Output

For each test case, the output must follow the description below. The outputs of two consecutive cases will be separated by a blank line.

Decrypt each line and print it to standard output. If there is more than one possible decryption (several lines can be decoded to the key sentence), use the first line found for decoding.

If decryption is impossible, output a single line:

`No solution.`

## Sample Input

```
1

vtz ud xnm xugm itr pyy jttk gmv xt otgm xt xnm puk ti xnm fprxq
xnm ceuob lrtzv ita hegfd tsmr xnm ypwq ktj
frtjrpgguvj otvxmdxd prm iev prmvx xnmq
```

## Sample Output

```
now is the time for all good men to come to the aid of the party
the quick brown fox jumps over the lazy dog
programming contests are fun arent they
```

## Submitting Your Code and Report

Your file name must be "assign2.cpp", and it is the only file you should submit. Please do not submit the executable file of your program. Turn in your project using the "oopsubmit" command as follows:

```
$ oopsubmit assign2 assign2.cpp
```

Late submissions will lose 20 points per day.

If you do not follow this submission guideline, you will lose 10 points out of 100.

You should also submit a hard copy of your code to TA. Your report must have a cover page with your student ID and name. In the report, your code must be well commented to explain your algorithm. Also, the sample input and the output of your program must be included in the report.