

7902 Mr. Panda and Fantastic Beasts

Mr. Panda loves fantastic beasts, he is going to use a magic spell to figure out where to find them. Given N strings S_1, S_2, \dots, S_N where S_i only contains lowercase alphabet letters, the magic spell is the shortest string which is only contained in the first string as a substring. If there is at least one solution, output the lexicographically smallest one.

If there is no solution, output 'Impossible' instead.

Input

The first line of the input gives the number of test cases, T . T test cases follow.

Each test case contains an integer N which is the number of strings.

Following is N lines, each line has a non-empty string S_i which only contains lowercase alphabet letters.

Output

For each test case, output one line containing 'Case # x : y ', where x is the test case number (starting from 1) and y is the the answer string or 'Impossible'.

Limits:

- $1 \leq T \leq 42$.
- $2 \leq N \leq 50000$.
- $N \leq S_1 + S_2 + \dots + S_N \leq 250000$.
- the sum of S_i in all test cases doesn't exceed 3×10^6 .

Sample Input

```
3
2
aba
bab
3
qnu
cvbb
bnu
3
a
aa
aaa
```

Sample Output

```
Case #1: aba
Case #2: q
Case #3: Impossible
```