



```
cout << "hello, world!" << endl;
```

Practice Mode

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Round 1A 2016

A. The Last Word[B. Rank and File](#)[C. BFFs](#)[Contest Analysis](#)[Questions asked](#)

- Submissions

The Last Word

9pt	Not attempted 10121/10327 users correct (98%)
11pt	Not attempted 9565/10061 users correct (95%)

Rank and File

14pt	Not attempted 4532/6054 users correct (75%)
21pt	Not attempted 4041/4454 users correct (91%)

BFFs

16pt	Not attempted 1793/3458 users correct (52%)
29pt	Not attempted 1275/1463 users correct (87%)

- Top Scores

nika	100
sourspinach	100
Swistakk	100
semiexp.	100
ACMonster	100
mnbvmar	100
sevenkplus	100
Merkurev	100
waterfalls	100
xyz111	100

Problem A. The Last Word

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the [Quick-Start Guide](#) to get started.

 Small input
9 points

Solve A-small

 Large input
11 points

Solve A-large

Problem

On the game show *The Last Word*, the host begins a round by showing the contestant a string **S** of uppercase English letters. The contestant has a whiteboard which is initially blank. The host will then present the contestant with the letters of **S**, one by one, in the order in which they appear in **S**. When the host presents the first letter, the contestant writes it on the whiteboard; this counts as the first *word* in the game (even though it is only one letter long). After that, each time the host presents a letter, the contestant must write it at the beginning or the end of the word on the whiteboard before the host moves on to the next letter (or to the end of the game, if there are no more letters).

For example, for **S** = CAB, after writing the word C on the whiteboard, the contestant could make one of the following four sets of choices:

- put the A before C to form AC, then put the B before AC to form BAC
- put the A before C to form AC, then put the B after AC to form ACB
- put the A after C to form CA, then put the B before CA to form BCA
- put the A after C to form CA, then put the B after CA to form CAB

The word is called the *last word* when the contestant finishes writing all of the letters from **S**, under the given rules. The contestant wins the game if their last word is the last of an alphabetically sorted list of all of the possible last words that could have been produced. For the example above, the winning last word is CAB (which happens to be the same as the original word). For a game with **S** = JAM, the winning last word is MJA.

You are the next contestant on this show, and the host has just showed you the string **S**. What's the winning last word that you should produce?

Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each consists of one line with a string **S**.

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 winning last word, as described in the statement.

Limits
 $1 \leq T \leq 100$.
Small dataset
 $1 \leq \text{length of } S \leq 15$.
Large dataset
 $1 \leq \text{length of } S \leq 1000$.
Sample

Input	Output
7	Case #1: CAB
CAB	Case #2: MJA
JAM	Case #3: OCDE
CODE	Case #4: BBAAA
ABAAAB	Case #5: CCCABBBAB
CABCBABBC	Case #6: CCCBAABAB
ABCABCABC	Case #7: ZXCASDQWE
ZXCASDQWE	

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