

code jam

```
printf("hello, africa!");
```

Qualification Round Africa
2010

[A. Store Credit](#)

[B. Reverse Words](#)

C. T9 Spelling

[Questions asked \(1\)](#)

Submissions

Store Credit

8pt	Not attempted 279/321 users correct (87%)
25pt	Not attempted 245/277 users correct (88%)

Reverse Words

8pt	Not attempted 277/288 users correct (96%)
25pt	Not attempted 272/276 users correct (99%)

T9 Spelling

8pt	Not attempted 248/267 users correct (93%)
25pt	Not attempted 238/248 users correct (96%)

Top Scores

ahmed.aly	99
amrSamir	99
mkaimbi	99
Atef	99
MohamedMonem	99
mohamedafattah	99
ll931110	99
ghooo	99
tamer.eldeeb	99
mohammad.kotb	99

Practice Mode

[Contest scoreboard](#) | hyperactivehuman@gmail.com | [Sign out](#)

Problem C. T9 Spelling

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
8 points

Solve C-small

Large input
25 points

Solve C-large

Problem

The Latin alphabet contains 26 characters and telephones only have ten digits on the keypad. We would like to make it easier to write a message to your friend using a sequence of keypresses to indicate the desired characters. The letters are mapped onto the digits as shown below. To insert the character B for instance, the program would press 2. In order to insert two characters in sequence from the same key, the user must pause before pressing the key a second time. The space character ' ' should be printed to indicate a pause. For example, 2 2 indicates AA whereas 2 2 indicates B.



Input

The first line of input gives the number of cases, **N**. **N** test cases follow. Each case is a line of text formatted as

```
desired_message
```

Each message will consist of only lowercase characters a-z and space characters ' '. Pressing zero emits a space.

Output

For each test case, output one line containing "Case #x: " followed by the message translated into the sequence of keypresses.

Limits

$1 \leq N \leq 100$.

Small dataset

$1 \leq \text{length of message in characters} \leq 15$.

Large dataset

$1 \leq \text{length of message in characters} \leq 1000$.

Sample

Input	Output
4	Case #1: 44 444
hi	Case #2: 999337777
yes	Case #3: 333666 6660 022
foo bar	2777
hello	Case #4: 4433555
world	555666096667775553

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