TK1114 Computer Programming

Lab 8

String & String Processing II

Problem Solving

22 – 24 November 2016

Name : _____

Matric Number : _____

8A	# SECRET MESSAGE
	Input Standard input
	Output Standard output
	Topic String : problem solving

Problem Description

Heri Putar intends to send a secret message to his colleague Markonah. The message is encrypted based on the so-called Caesar Cipher where each letter is shifted a certain number of places left or right through the alphabet. In this context, the alphabet is treated as being circular so that the first letter follows after the last letter, and the last letter precedes the first letter. Heri applies these ideas separately to uppercase letters, lower case letters, and digits. In this case, each alphabet is shifted by 1, 'A' becomes 'B', 'Z' becomes 'A', 'a' becomes 'b', 'z' becomes 'a', '0' becomes '1', '9' becomes '0'. Spaces, punctuation, and any other symbols are not affected in this scheme.

Your task is to help Heri writes his secret message.

Input

Each line of input consists of a string of 1 to 200 arbitrary characters and represents a fragment of the text to be encrypted. A single '#' on a line by itself indicates the end of input.

Output

For each test case, the output contains a line in the format "Case #x: ", where x is the case number (starting from 1) follows by the corresponding encrypted text fragments.

Sample Input Output

Sample Input
| ```
Clear text!
Ron and Mione's wedding, March 2002, London
Secret garden
#
``` |

Sample Output
| ```
Case #1: Dmfbs ufyu!
Case #2: Spo boe Njpof't xfeejoh, Nbsdi 3113, Mpoepo
Case #3: Tfdsfu hbsefo
``` |

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8B	# ISBN-10 CHECK DIGIT

Input	Standard input
Output	Standard output
Topic	String : problem solving

Problem Description

An ISBN is a unique numeric commercial book identifier. An ISBN is assigned to each edition and variation of a book. ISBN-10 is 10 digit long ISBN.

On the other hand, a check digit is a form of redundancy check used for error detection. It consists of a single digit computed from the other digits in the number.

The ISBN-10 check digit is the last digit of the ten digit ISBN must be such that the sum of all the ten digits, each multiplied by its (integer) weight, descending from 10 to 1, is a multiple of 11.

For example, the check digit for ISBN-10 code 030640615 is calculated as follows:

$$s = (11 - (((0 \times 10) + (3 \times 9) + (0 \times 8) + (6 \times 7) + (4 \times 6) + (0 \times 5) + (6 \times 4) + (1 \times 3) - (5 \times 2)) \bmod 11) \bmod 11$$
$$= (11 - (0 + 27 + 0 - 42 + 24 + 0 + 24 + 3 + 10) \bmod 11) \bmod 11$$
$$= (11 - (130 \bmod 11)) \bmod 11 = (11 - (9)) \bmod 11 = (2) \bmod 11 = 2$$

Thus the check digit is 2, and the complete sequence is 030640615**2**.

Write a program to find ISBN-10 check digit

Input

The first line of input is an integer N ($1 \leq N \leq 50$) that represents the number of test cases, followed by N lines of input, that contains a 9 digit integer.

Output

For each test case, the output contains a line in the format "`Case #x: `", where x is the case number (starting from 1) follows by the ISBN-10 check digit.

Sample Input Output

Sample Input	Sample output
3 030640615 034001381 123456789	Case #1: 2 Case #2: 8 Case #3: 10

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8C	IS IT THE SAME?	
	Input	Standard input
	Output	Standard output
	Topic	String : problem solving

Problem Description

Puan Ruqayyah, Madam Chong and Miss Lela teach their dyslexia students to identify characters. They tested randomly on strings of characters and numbers. They found that a few children get excited when they read certain series of strings. The teachers were curious and began to find out that these kids love strings that have series of characters that can be read similarly from right and from left.

There are not that many meaningful words and numbers with such pattern. The teachers are interested to collect these meaningful words and numbers to share with their dyslexia students. Examples of such strings are CIVIC, KAPAK, 2102012 (which is 2nd Oct 2012), 1102011 (which is 1st Oct 2011), among others.

Now, you are to help Puan Ruqayyah and her colleagues to select such strings. Write a program that reads in a sequence of characters and determine if it can be read similarly from right and from left.

Input

The first line of input is an integer N ($1 \leq N \leq 50$) that represents the number of test cases, followed by N lines of input. Each of the input contains a string of alpha-numeric characters. The string will have less than 50 characters.

Output

For each test case, output a line in the format "Case #x: " where x is the case number (starting from 1), follow by either Yes or No.

Sample Input Output

Sample Input	Sample Output
4 RACECAR mirror 1991 Civic	Case #1: Yes Case #2: No Case #3: Yes Case #4: Yes

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