第二題

Description

The "*reverse and add*" method is simple: choose a number, reverse its digits and add it to the original. If the sum is not a palindrome (which means, it is not the same number from left to right and right to left), repeat this procedure.

```
            195    Initial number
            591
           ____
            786
            687
           ____
For example: 1473
            3741
           ____
            5214
            4125
           ____
            9339    Resulting palindrome
```

In this particular case the palindrome '9339' appeared after the 4th addition. This method leads to palindromes in a few step for almost all of the integers. But there are interesting exceptions. 196 is the first number for which no palindrome has been found. It is not proven though, that there is no such a palindrome.

You must write a program that give the resulting palindrome and the number of iterations (additions) to compute the palindrome.

You might assume that all tests data on this problem:

- will have an answer ,

- will be computable with less than 1000 iterations (additions),

- will yield a palindrome that is not greater than 4,294,967,295.

Input

The first line will have a number N $(0 < N \le 100)$ with the number of test cases, the next N lines will have a number P to compute its palindrome.

Output

For each of the N tests you will have to write a line with the following data : $minimum_number_of_iterations(additions)_to_get_to_the_palindrome$ and $the_resulting_palindrome_itself$ separated by one space.
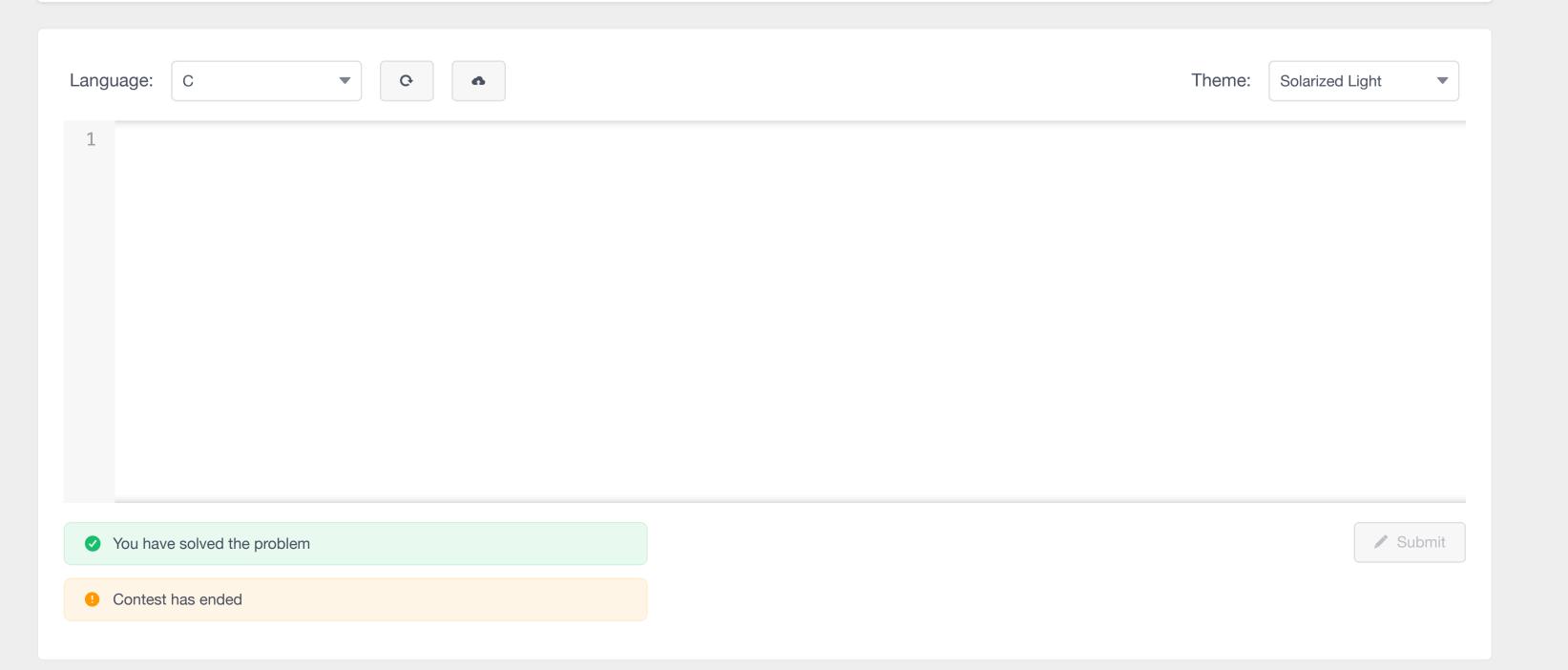
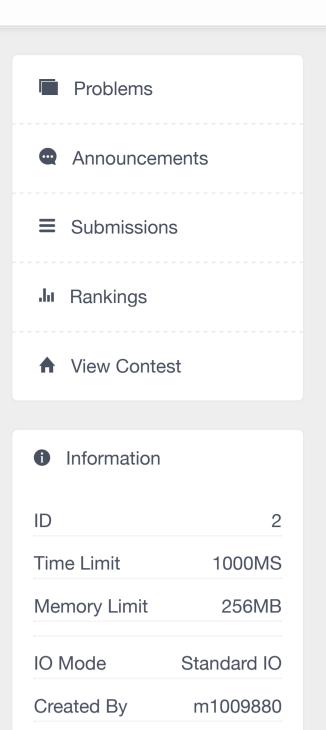(minimum number of iterations(additions) to get to the palindrome and the resulting palindrome itself)
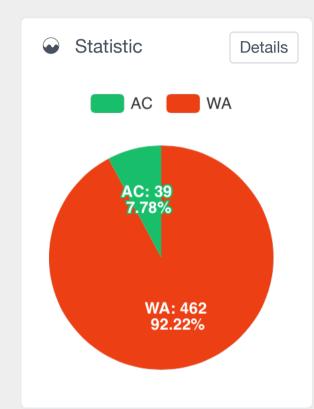
Sample Input 1

```
4
195
265
750
15786
```

Sample Output 1

```
4 9339
5 45254
3 6666
11 2797227972
```

Information

ID	2
Time Limit	1000MS
Memory Limit	256MB
IO Mode	Standard IO
Created By	m1009880
Level	Low
Tags	Show

Statistic　Details

AC　WA

AC: 39
7.78%

WA: 462
92.22%

Language: C　　　Theme: Solarized Light

1

✓ You have solved the problem

⚠ Contest has ended

✏ Submit