Machine Problems

Problem 1
VOWEL LETTERS
Program: vowel.cpp / vowel.java
Input file: vowel.in

The English department requested you to create a program that will determine if the letters found in a given file is a vowel or consonant.

Input:
The first line of the input contains a single integer T (1<= T <= 100) – the number of test cases. Each test case consists of a single line that contains the letter.

Output:
For each test case, print vowel or not vowel.

Example:

vowel.in	Standard Output
4 A M O C	Vowel Not Vowel Vowel Not Vowel

Problem 2
PALINDROME
Program: pal.cpp / pal.java
Input file: pal.in

ABC Construction Company is a new company dealing with construction of roads. They purchase vehicles like cars, trucks and others. The owner like to have an identification of plate numbers. As the plate number has many digits, the company like to apply for special numbers that should be palindrome type.

A digit is a five digit number. These digits can be 12521, 63036, 35253 and so on. The ROP is planning to issue the next set of digits. Digits to be issued are not necessarily palindrome type. You will be asked to create a program that will make the digits to appear like mirror image.

Input:
The set of plate numbers / digits.

Output:
For each test case, print the palindrome equivalent

pal.in	Standard output
62900	62926
12312	12321
10000	10001
99000	99099

Problem 3

MINIMUM AND MAXIMUM

Program: minmax.cpp / minmax.java

Input file: minmax.in

Ali is given an integer N, he needs to determine the lowest and the highest in a set of numbers.

Input:

The first line of the input contains a single integer T ($1 <= T <= 100$) – the number of test cases. Each test case consists of a single line that contains an integer N ($1 <= N <= 10^4$)

Output:

For each test case, print the lowest and the highest number.

Example:

Minmax.in	Standard Output
5 10 20 12 5 8	5 20

Problem 4
Riyal Denomination

Program: riyal.cpp / riyal.java
Input file: riyal.in

Ahmed is request by Bank Dhofar to create a program for displaying the riyal denomination of a certain amount. The program should display the number of denominations (see denominations)
50 OMR, 20 OMR, 10 OMR, 5 OMR, 1OMR, for a certain amount.
For example, the amount is 387,
Number of 50 OMR is 7, (7 x 5=350), remaining amount will be 37,

50 OMR	: 7	(7 X 5 = 350, remaining amount will be 37)
20 OMR	: 1	(1 X 20=20, remaining amount will be 17)
10 OMR	: 1	(1 X 10=10, remaining amount will be 7)
5 OMR	: 1	(1 X 5=5, remaining amount will be 2)
1 OMR	: 2	

Input :
Amount of currency

Output:

The number of denominations for the currency

Riyal.in	Standard Output
542	10 2 0 0 2

Problem 5.
Program: notes.cpp / notes.java
Input file: notes.in

Currency note dispenser

Fareb was assigned with the job of deciding the denomination of currencies to be dispensed in the ATM machine for every payment withdrawn from the machine. Let the payment should be confirmed in multiples of 5 rials only. The denominations in the machine may be considered fully loaded in the morning sufficient enough to meet two days payment at least. The denominations are 50, 20, 5 rial only. For every payment it is decided to render 5rial denominations, inorder to help customers with smaller denominations.

Example:
1) if payment is 180 rials, then the currencies dispensed are 50 rials x 3 = 150, 20 rials x 1 = 20, 5 rials x 2.
2) if payment is 185 rial, then the currencies dispensed are 50 rials x 3 = 150, 20 rials x 1 = 20, 5 rials x 3.
2) if payment is 190 rial, then the currencies dispensed are 50 rials x 3 = 150, 20 rials x 1 = 20, 5 rials x 4.
3) if payment is 195 rial, then the currencies dispensed are 50 rials x 3 = 150, 20 rials x 2 = 40, 5 rials x 1.
4) if payment is 200 rial, then the currencies dispensed are 50 rials x 3 = 150, 20 rials x 2 = 40, 5 rials x 4.

You may help Fareb to design the java program that can accept a payment as valid input and print the denominations of 5 rial only as output.

Input:
The first line of the input contains a single integer T (1<=T <= 100) – the number of test cases.
Each test case consists of a single line that contains an integer N.

Output:
The number of 5 riyals denomination in each amount.

notes.in	Standard output
3 425 40 530	1 4 2

Problem 6. eMail domain

Program: email.cpp / email.java
Input file: email.in

Consider the email address sara@gmail.com, the part before @ symbol is the user and gmail.com is known as the eMail domain. The domain contains two parts as separated by the dot(.). In the email address sara@shct.edu.om, the email domain contains three parts. Note that email domain cannot have single part, if that happens it is considered invalid.

Design a program to print the number of parts that appear in the email domain of the email address.

Input

The input file contains standard email addresses

Output

The number of parts of the email domain.

email.in	Standard output
mohana.murthy@shct.edu.om	3
khaled@com	Invalid
ayish@govt.min.edu.om	4
nahed@gmail.om	2
myra.patalay@yahoo.com	2

Problem-2: Doubles **Color : Blue**

File Name : Blue.cpp
Text File : Blue.txt

After correcting mid-term question papers of Programing-I course, the teachers were willing to analyze student marks. The analysis consists of finding number of marks in each list are twice that other mark in the same list.
The program should scan the lists and output correct answer for each one.

For example, given the list

1 4 3 2 9 7 18 22

Your program should answer 3, as 2 is twice 1, 4 is twice 2, and 18 is twice 9.

For example, given the list

7 5 11 13 1 3

Your program should answer **0 [No mark is twice than other mark in the list]**

Input
The input file will consist of one or more lists of numbers.
There will be one list of numbers per line. Each list will contain from 2 to 15 unique positive integers. No integer will be larger than 99.
Each line will be terminated with the integer **0**, which is not considered part of the list. A line with the single number **–1** will mark the end of the file. The example input below shows three separate lists. Some lists may not contain any doubles.

Output
The output will consist of one line per input list, containing a count of the items that are double some other item.

Sample Input [Blue.txt]	Sample Output
1 4 3 2 9 7 18 22 0 2 4 8 10 10 0 7 5 11 13 1 3 0 -1	3 2 0

Problem 7
Lucky number

You are to enter a 5-digit number.

If all the numbers are in ascending order having consecutive numbers, display message "Luck Up".

If all the numbers are in descending order having consecutive numbers, display message "Down Luck".
If the first half of numbers are in ascending order and the second half is repeating display the message 'Luck'.

Input **Output**

Input:
The first line of the input contains a single integer T (1<= T <= 100) – the number of test cases. Each test case consists of a single line that contains an integer N (1 <= N <= 10^4)

Example:

lucky.in	Standard Output
3 23456 87654 45645	Luck Up Down Luck Luck

Problem 8
Ordering the numbers

Write a program that will check whether the order of the digits in an input is in proper order.

Input:
The first line of the input contains a single integer T (1<= T <= 100) – the number of test cases. Each test case consists of a single line that contains an integer N (1 <= N <= 10^4)

Example:

order.in	Standard Output
4 1234567 23456789 3212345 6789	Order Order Not in order Order