Q1. Study the flowchart given below.

	Customer Type	Amount	Product Type
a.	Not Student	8000	TV
b.	Student	4000	Phone
c.	Not Student	15,000	Phone

Calculate the discount for the following inputs:

Q.2. Write an algorithm to check that a year is a leap year or not. A leap year is exactly divisible by 4 except for century years (years ending with 00). The century year is a leap year only if it is perfectly divisible by 400.

For example,

> 1999 is not a leap year
>
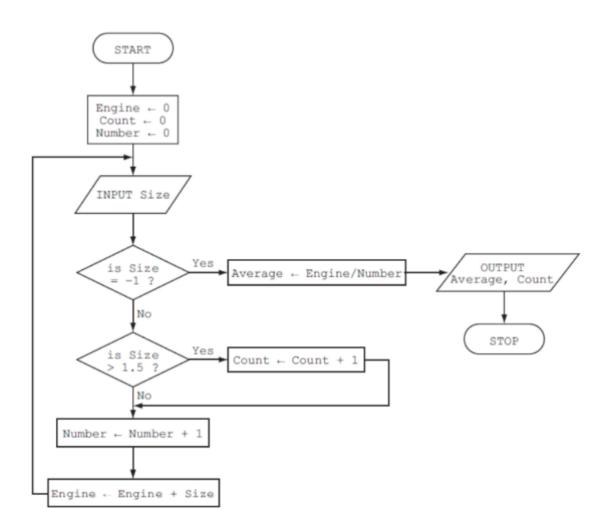> 2000 is a leap year
>
> 2004 is a leap year

Q.3 Make a flow chart for the following :

> In a company, there are deductions from the salary of the employees for a fund. The deductions rules are as follows: -
>
> a. If salary is less than Rs.10,000 then no deduction.
> b. If salary is equal to or more than Rs.10,000 and less than Rs.20,000 then deduct Rs.1,000 as fund.
> c. If salary is equal to or more than 20,000 then deduct 7 % of the salary for fund
>
> Input salary from user and after appropriate deduction show the net payable amount

Q.4 What will be output of the following flowchart if Size is given as input in the following order: **3 2 1.5 0 1.** Complete the trace table given below for each iteration.
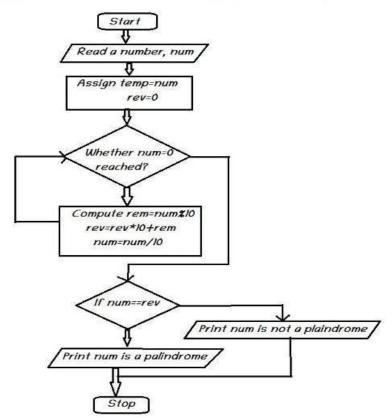
Engine	Count	Number	Size	Average	OUTPUT

Q.5 Write an Algorithm that will convert seconds to hour, minute and seconds.

   a.   86399 seconds : 23 hours 59 minutes 59 seconds

Q.6 What will be output of the following flowchart if number = 343 and num =343 is given as input. Complete the trace table given below for each iteration.

Program to check whether a number is palindrome or not.

```
                    Start
                      ↓
            Read a number, num
                      ↓
             Assign temp=num
                   rev=0
                      ↓
              Whether num=0
                 reached?
                      ↓
          Compute rem=num%10
             rev=rev*10+rem
               num=num/10
                      ↓
              If num==rev
                                    Print num is not a plaindrome
                      ↓
        Print num is a palindrome
                      ↓
                    Stop
```
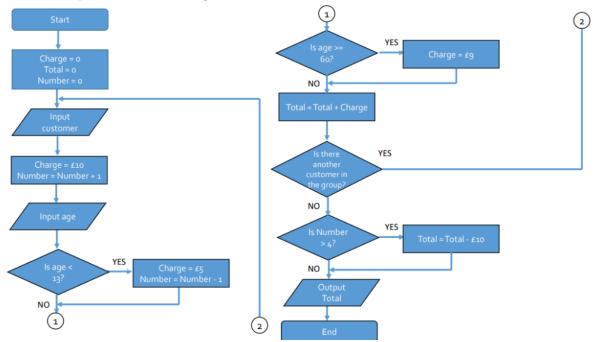
Q.7: Write an Algorithm to Reverse a 3-digit number (Int). For Example, if 123 is given as input the output would be 321.

Q.8 What will be output of the following flowchart if the following data is given as input:

    a. Customer: John Age: 7
    b. Customer: Peter Age: 65
    c. Customer: Dave Age: 43
    d. Complete the trace table given below for each iteration.

Start

Charge = 0
Total = 0
Number = 0

Input customer

Charge = £10
Number = Number + 1

Input age

Is age < 13? — YES → Charge = £5 / Number = Number - 1

NO

(1)

Is age >= 60? — YES → Charge = £9

NO

Total = Total + Charge

Is there another customer in the group? — YES → (2)

NO

Is Number > 4? — YES → Total = Total - £10

NO

Output Total

(2)

End

Charge	Total	Number	customer	age	charge	Total