Assignment 4

1. Write a Python program to check whether a year is leap year or not

2. Write a Python program to accept 5 numbers. Count the number of positive numbers, number of negative numbers, number of odd numbers and number of even numbers

3. Write a Python program to accept 5 alphabets and count the number of small letters, number of capital letters, count the number of vowels and number of consonants

4. Write a Python program to calculate tax on the basis of marks obtained by the student using an *if-elif-else* statement

Cost in Rs	Tax
>100000	15%
>50000 and <=100000	10%
<=50000	5%

5. Write a Python program to assign a grade on the basis of marks obtained by the student using an *if-elif-else* statement.

Range	Grade
[90-100]	O
[80-89]	A
[70-79]	B
[60,69]	C
[50,59]	D
[40,49]	E
[<40]	F

6. Write a program that checks whether a given 3 digit number is an Armstrong number or not. A 3 digit number is an Armstrong number whose sum of the cubes of the digits is equal to the number itself. For Example, $370 = 3^3 + 7^3 + 0^3$

Sample executions
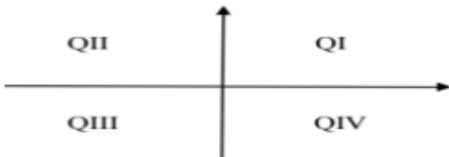Enter a number : 370
Yes it is an Armstrong number
Enter a number :450
No it is not an Armstrong number

7. Write a python program that takes two integer values m and d from the command line and prints true if day d of month m is between 3/20 and 6/20, false otherwise

8.   Write a program to print the number of 20 rupee notes, 10 rupee notes, 5 rupee and 1 rupee notes a person has if the total amount of money with that person is given (assuming that only the given denominations are there with the person).

9.   Write a python program that takes the x – y coordinates of a point in the Cartesian plane and prints a message telling either an axis on which the point lies or the quadrant in which it is found.

Sample lines of output:
(-1.0, -2.5) is in quadrant III
(0.0, 4.8) is on the y-axis

10.   Write a python program that prompts the user to enter an integer for today'sday of the week (Sunday is 0, Monday is 1... and Saturday is 6). Also prompt the user to enter the number of days after today for a future day and display the future day of the week.

Here are some sample runs:
Enter today's day: 1
Enter the number of days elapsed since today: 3
Today is Monday and thefuture day is Thursday
Enter today's day: 0
Enter the number of days elapsed since today: 31
Today is Sunday and thefuture day is Wednesday

11.   Write a python program to calculate electricity bill according to the following conditions. Input the number of units consumed from keyboard.

Unit	Price
First 100 units	no charge
Next 100 units	Rs 5 per unit
After 200 units	Rs 10 per unit
(For example if input unit is 350 than total bill amount is Rs2000)	

12.   Write a python program to check whether the input 3 digit number is a perfect number or not.

13.   Write a python program which displays an appropriate name for a person, using a combination of nested ifs and compound conditions. Ask the userfor a gender, first name, last name and age. If the person is female and 20 or over, ask if she is married. If so, display "Mrs." in front of her name. If not, display "Ms." in front of her name. If the female is under 20, display herfirst and last name. If the person is male and 20 or over, display "Mr." in front of his name. Otherwise,

display his first and last name. Note thatasking a person if they are married should only be done if they are femaleand 20 or older, which means you will have a single if and else nested insideone of your if statements.

Sample runs

What is your gender (M or F): F
First name: Riya
Last name: Sen
 Age: 32
Are you married, Riya (y or n)? y
Then I shall call you Mrs.Riya Sen.

What is your gender (M or F): F
First name: Anjali
Last name: Roy
 Age: 48
Are you married, Anjali(y or n)? n
Then I shall call you Ms. Anjali Roy

What is your gender (M or F): M
First name: Dhruti
Last name: Mohanty
Age: 23
Then I shall call you Mr.DhrutiMohanty

What is your gender (M or F): M
First name: Rajat
Last name: Pati
 Age: 15
Then I shall call you RajatPati

14. Write a python program that allows to enter an integer between 1 and 12 from command line and displays the English month name January, February... December for thenumber 1, 2... 12, accordingly.

15. Write a python program that displays the following table("\t" in print function).

a	b	pow(a, b)
1	2	1
2	3	8
3	4	81
4	5	1024
5	6	15625