**Assignment No:4 Date: 18.11.23**

**Topic : Constructors, Array of object, Command-line arguments**

1. Define a class ‘Box’ that uses a parameterized constructor to initialize the dimensions of a box. The dimensions of the Box are width, height, depth. The class should have a method that can return the volume of the box. Create an object of the Box class and test the functionalities
2. Design a class ‘ComplexNum’ to manipulate Complex numbers having data members as real and img. The class should have a parameterized constructor to initialize its data members. It should also have methods displayCompNumber() to display the complex number (in the format 5+3i for example), addCompNumber() to add two Complex numbers. Test these methods by creating main method in another class.
3. Design a class ‘Point’ with data members as xCo and yCo. The class should have a parameterized constructor to initialize its data members. Define a method distanceBetPoints() which returns the distance between two points.
4. Design a class ‘Time’ having data members as hour, minute and second. The class should have a parameterized constructor to initialize its data members. It should also have methods displayTime() to display the time in HH:MM:SS format and addTime() to add two times. Test these methods by creating a main method in another class.
5. Define a class Employee with the following members:

Data members:

private String empName

private String empNo

private int dependentCnt

Methods:

Employee(String name, String eno, intdepcnt): constructor

void showEmpDetails():displaysempNoandempName

intdepCount(): returns dependentCnt

Write a separate class called EmpTest with a main method that define an array of n employees where the value of n will be inputted from the user. Read and store the information of all n employees. Display the details of the employees with more than two dependents.

1. Create a class Account having data members accNo, balance, timePeriod and int InYears(as static and initialize with 7.5%). The class should also contain the following

methods:

float calculateInterst() which calculates and returns the interest amount.

void showAccDetails() which displays account number, balance and calculated interest amount.

static void changeIntRate(float newRate) which changes the interest rate to newRate.

Create an array of object of the class Account. Store the details of each object through the parameterized constructor. Display all the account details by calling the method showAccDetails(). Change the interest rate to a new one by calling the method changeIntRate(). Finally display the account details after the change in interest rate.

1. Write a program that will take two integer numbers from the command prompt and find their GCD and LCM. If the user does not provide exactly two numbers of argument then the program should display error message.
2. Write a program that will take employee id, employee name, manager id, department number, salary, job from the command prompt. If the user does not provide exactly two numbers of argument then the program should display error message. Use methods display() to display the record of employee.