**Assignment No: 4**

**Class and Object, Constructor, this and static Date:03/10/2024**

1. Write a program to print the average of three numbers entered by user by creating a class named 'Average' having a method to calculate and print the average. Define another driver class to demonstrate the basic operation.
2. Write a program to create a class named 'Student' with members 'name', 'roll\_no', ‘branch’. Declare two methods to input the student details and display the details of the student. Create a driver class to test the functionalities of the above class.
3. Declare a class Complex with member real and imaginary part. Define a method initialise() to input the two complex numbers, show() to display the complex number and add() to add the two complex numbers. Declare another class to illustrate the operations of the Complex class.
4. Write a program to print the area of a rectangle by creating a class named 'Area' having two methods. First method named as 'setDim ()' takes length and breadth of rectangle as parameters and the second method named as 'getArea ()' returns the area of the rectangle. Length and breadth of rectangle are entered through keyboard. [use ‘this’ keyword]
5. Write a program to declare a class employee with data members empid, ename, dept, sal. Add a method getData(), putData() to accept and display the details of n employees. Define a driver class to create the objects of employee class and perform basic operations.
6. Define a class Student having the attribute regNo, stdName, branch and CGPA. Write 2 methods to accept and display the student details. Read the details of 50 students using an array of Student class object. Display the student details who has secured the highest CGPA.
7. 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[use this keyword].
8. 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.
9. 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.
10. 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.