

Problem Statement:

P1) Write a program in Java to create a class Student with data members 'name, city and age' along with the method setData() to set the values and printData() to display the data.

//Source code//

```
class Student{
    String name,city;
    int age;

    void setData(){
        this.name="Partha Sarathi Manna";
        this.age=18;
        this.city="Mecheda";
    }

    void PrintData(){
        System.out.println("Student Name:"+this.name);
        System.out.println("Student Age:"+this.age);
        System.out.println("Student City:"+this.city);
    }
}

public class p1{
    public static void main(String[] args){
        Student s1 = new Student();
        s1.setData();
        s1.PrintData();
    }
}
```

//Output//

```
Student Name:Partha Sarathi Manna
Student Age:18
Student City:Mecheda
```

P2) Define a Student class (roll: integer, number: string, marks: float). Define parameterized setter method to set the student data members and display method to print student details. Instantiate a student object using parameterized setter method and use display method to print the details of the student.

//Source Code//

```
class Student2{

    String name;
    int roll;
    float marks;

    void SetData(String n,int r,float m){
        this.name=n;
        this.roll=r;
        this.marks=m;
    }

    void PrintData(){
        System.out.println("Student Name: "+name);
        System.out.println("Student Roll: "+roll);
        System.out.println("Student marks: "+marks);
    }

}

public class p2{
    public static void main(String[] args){
        Student2 s2 = new Student2();
        s2.SetData("Sayak",25,99.9f);

        s2.PrintData();
    }
}
```

//Output//

```
Student Name: Sayak
Student Roll: 25
Student marks: 99.9
```

P3)Write a program in Java to create a class Animal having a method eat() to print the message “all Animal can eat”. From this Animal class create a child class of name Dog. Dog has its own member method called bark() to print the message “Dogs are barking”. Now create an object of Dog to print its eating and barking nature.

//Source Code//

```
class Animal{
    void eat(){
        System.out.println("All Animal Can Eat");
    }
}

class Dog extends Animal{
    void bark(){
        System.out.println("Dogs are barking");
    }
}

class p3{
    public static void main(String[] args){
        Dog d1 = new Dog();
        d1.eat();
        d1.bark();
    }
}
```

//Output//

All Animal Can Eat
Dogs are barking

P4)Write a program to design a class AreaCalculation and then find out the area (using method overloading) of a circle whose radius is 7cm, area of rectangle whose length is 4.5cm and breadth is 4cm and also the area of cuboid whose length, breadth & height are 3cm, 2cm & 4cm respectively

//Source Code//

```
class AreaCalculation{

    float pi = 3.14f;
    void area(float r){
        System.out.println("Area of Circle: "+(pi*r*r));
    }

    void area(float length,float breadth){
        System.out.println("Area of Rectangle: "+(length * breadth));
    }

    void area(float length,float breadth,float height){
        System.out.println("Area of cuboid:
"+(2*((length*breadth)+(breadth*height)+(height*length))));
    }

}

public class p4{
    public static void main(String[] args){
        AreaCalculation a = new AreaCalculation();
        a.area(7f);
        a.area(4.5f,4f);
        a.area(3f,2f,4f);
    }
}
```

//Output//

Area of Circle: 153.86002
Area of Rectangle: 18.0
Area of cuboid: 52.0

P5) Define a Student class (roll: integer, number: string, marks: float). Define no-argument and parameterized getter methods for initializing student object. Create two student objects. One object is initialized using parameterized getter method and second one is initialized using no-argument getter methods. Also print the contents of each object using display() method. (Use of method overloading)

//Source Code//

```
class Student3{
    String name;
    int roll;
    float marks;
    void SetData(){
        this.name = "Partha Sarathi Manna";
        this.roll = 28;
        this.marks = 82f;
    }
    void SetData(String n,int r,float m){
        this.name = n;
        this.roll = r;
        this.marks = m;
    }
    void PrintData(){
        System.out.println("Student Name :"+this.name);
        System.out.println("Student Roll :"+this.roll);
        System.out.println("Student Marks :"+this.marks);
    }
}

public class p5{
    public static void main(String[] args){
        Student3 s1 = new Student3();
        Student3 s2 = new Student3();

        s1.SetData();
        s2.SetData("Anwesha Manna",30,90f);

        System.out.println("Student 1 Details:");
        s1.PrintData();
        System.out.println();
        System.out.println("STudent 2 Details:");
        s2.PrintData();
    }
}
```

//Output//

Student 1 Details:
Student Name :Partha Sarathi Manna
Student Roll :28
Student Marks :82.0

STudent 2 Details:
Student Name :Anwesha Manna
Student Roll :30
Student Marks :90.0

