Lab 2

Assignment-1

- Write a Java program named **Car**.
- The Car class should have the following attributes: make (String), model (String) , year (short) , and price(int).
- The car class should have a constructor that takes all the attributes.
- Add a main method to instantiate car objects.
- The program should allow the user to create and display objects of each Car class.

Program

```
import java.util.Scanner;

public class Car {
    String make, model;
    short year;
    int price;

    public Car(String make, String model, short year, int price) {
        this.make = make;
        this.model = model;
        this.year = year;
        this.price = price;
    }

    public void display() {
        System.out.println("Make: " + make);
        System.out.println("Model: " + model);
        System.out.println("Year: " + year);
        System.out.println("Price: " + price);
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter car make: ");
        String make = scanner.nextLine();

        System.out.print("Enter car model: ");
        String model = scanner.nextLine();
```

```
        System.out.print("Enter car year: ");
        short year = scanner.nextShort();

        System.out.print("Enter car price: ");
        int price = scanner.nextInt();

        Car car = new Car(make, model, year, price);
        car.display();
    }
}
```

Output

```
PS D:\Venshu\College\Engg\TPCell-Training\Sem5-Java\Anudip-Practicals\lab-assignments\lab2> javac Car.java
PS D:\Venshu\College\Engg\TPCell-Training\Sem5-Java\Anudip-Practicals\lab-assignments\lab2> java Car
Enter car make: Hyundai
Enter car model: Creta
Enter car year: 2022
Enter car price: 100000
Make: Hyundai
Model: Creta
Year: 2022
Price: 100000
```

Assignment-2

- Write a Java program that demonstrates method overloading by creating a class called **Calculator**.
- Add three methods called add().
- The first add() method should take two int variables as arguments and return their sum as int.
- The second add() method should take three int variables as arguments and return their sum as int.
- The third add() method should take two doubles as arguments and return their sum as double.
- The program should allow the user to display the results of each method.

Program

```
import java.util.Scanner;

public class Calculator {
    public int add(int a, int b) {
        return a + b;
    }

    public int add(int a, int b, int c) {
        return a + b + c;
    }

    public double add(double a, double b) {
        return a + b;
    }

    public static void main(String[] args) {
        Calculator calculator = new Calculator();
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter first integer: ");
        int num1 = scanner.nextInt();
        System.out.print("Enter second integer: ");
        int num2 = scanner.nextInt();

        System.out.println("Addition of " + num1 + " and " + num2 + ": " +
calculator.add(num1, num2));

        System.out.print("Enter third integer: ");
        int num3 = scanner.nextInt();
```

```
        System.out.println("Addition of " + num1 + ", " + num2 + " and " +
num3 + ": " + calculator.add(num1, num2, num3));

        System.out.print("Enter first double: ");
        double num4 = scanner.nextDouble();
        System.out.print("Enter second double: ");
        double num5 = scanner.nextDouble();

        System.out.println("Addition of " + num4 + " and " + num5 + ": " +
calculator.add(num4, num5));
    }
}
```

Output

```
PS D:\Venshu\College\Engg\TPCell-Training\Sem5-Java\Anudip-Practicals\lab-assignments\lab2> javac Calculator.java
PS D:\Venshu\College\Engg\TPCell-Training\Sem5-Java\Anudip-Practicals\lab-assignments\lab2> java Calculator
Enter first integer: 15
Enter second integer: 34
Addition of 15 and 34: 49
Enter third integer: 91
Addition of 15, 34 and 91: 140
Enter first double: 80.45
Enter second double: 64.115
Addition of 80.45 and 64.115: 144.565
```

Assignment-3

- Create a **Java Bean Class Student**
- Add three attributes
  - private String name;
  - private int age;
  - private String department;
- Add a constructor that takes all three attributes as parameters.
- Add setter and getter methods.
- Compile the program.

Program

```
public class Student {
    private String name;
    private int age;
    private String department;

    public Student(String name, int age, String department) {
        this.name = name;
        this.age = age;
        this.department = department;
    }

    public String getName() {
        return name;
    }

    public int getAge() {
        return age;
    }

    public String getDepartment() {
        return department;
    }

    public void setName(String name) {
        this.name = name;
    }

    public void setAge(int age) {
        this.age = age;
    }
```

```
    public void setDepartment(String department) {
        this.department = department;
    }

    public static void main(String[] args) {
        Student student = new Student("Venshu Anandani", 20, "Computer
Engineering");

        System.out.println("Name: " + student.getName());
        System.out.println("Age: " + student.getAge());
        System.out.println("Department: " + student.getDepartment());

        student.setName("Pratik Kolhe");
        student.setAge(20);
        student.setDepartment("Computer Science (AI and DS)");

        System.out.println("Updated Name: " + student.getName());
        System.out.println("Updated Age: " + student.getAge());
        System.out.println("Updated Department: " + student.getDepartment());
    }
}
```

Output

```
PS D:\Venshu\College\Engg\TPCell-Training\Sem5-Java\Anudip-Practicals\lab-assignments\lab2> javac Student.java
PS D:\Venshu\College\Engg\TPCell-Training\Sem5-Java\Anudip-Practicals\lab-assignments\lab2> java Student
Name: Venshu Anandani
Age: 20
Department: Computer Engineering
Updated Name: Pratik Kolhe
Updated Age: 20
Updated Department: Computer Science (AI and DS)
```