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**Department:** CSE

**Section:**3

**Semester:** 4<sup>th</sup>

**Subject:** Java Lab

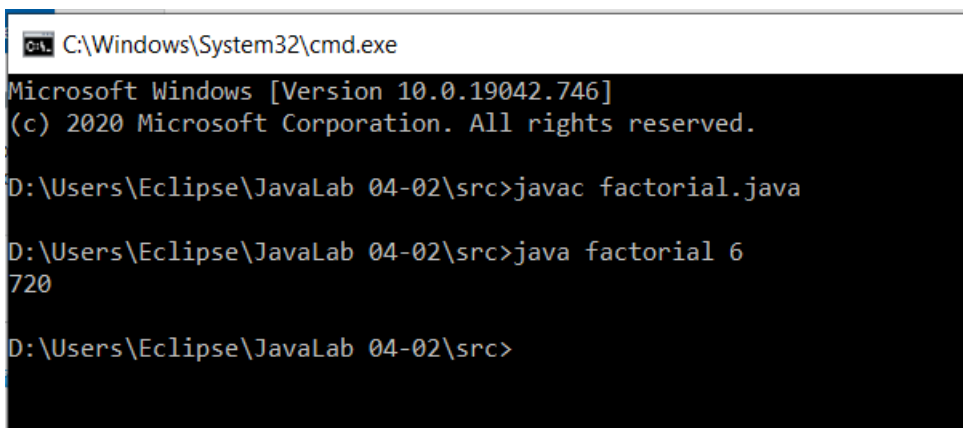
**Date:** 06-02-2021

**Subject Code:** CSE230

## JAVA: LAB-ASSIGNMENT 1

1. Write a JAVA program to calculate the factorial of a number, input should be given through the command line argument.

```
public class factorial {  
  
    public static void main(String[] args) {  
        // TODO Auto-generated method stub  
        long n, fact=1;  
  
        n=Long.parseLong(args[0]);  
  
        for(int i=1; i<=n; i++)  
        {  
            fact=fact*i;  
        }  
  
        System.out.println(fact);  
    }  
}
```



```
C:\Windows\System32\cmd.exe  
Microsoft Windows [Version 10.0.19042.746]  
(c) 2020 Microsoft Corporation. All rights reserved.  
  
D:\Users\Eclipse\JavaLab 04-02\src>javac factorial.java  
  
D:\Users\Eclipse\JavaLab 04-02\src>java factorial 6  
720  
  
D:\Users\Eclipse\JavaLab 04-02\src>
```

2. Write a JAVA program to initialize and display the attribute values of a class “vehicle” variables using constructor.

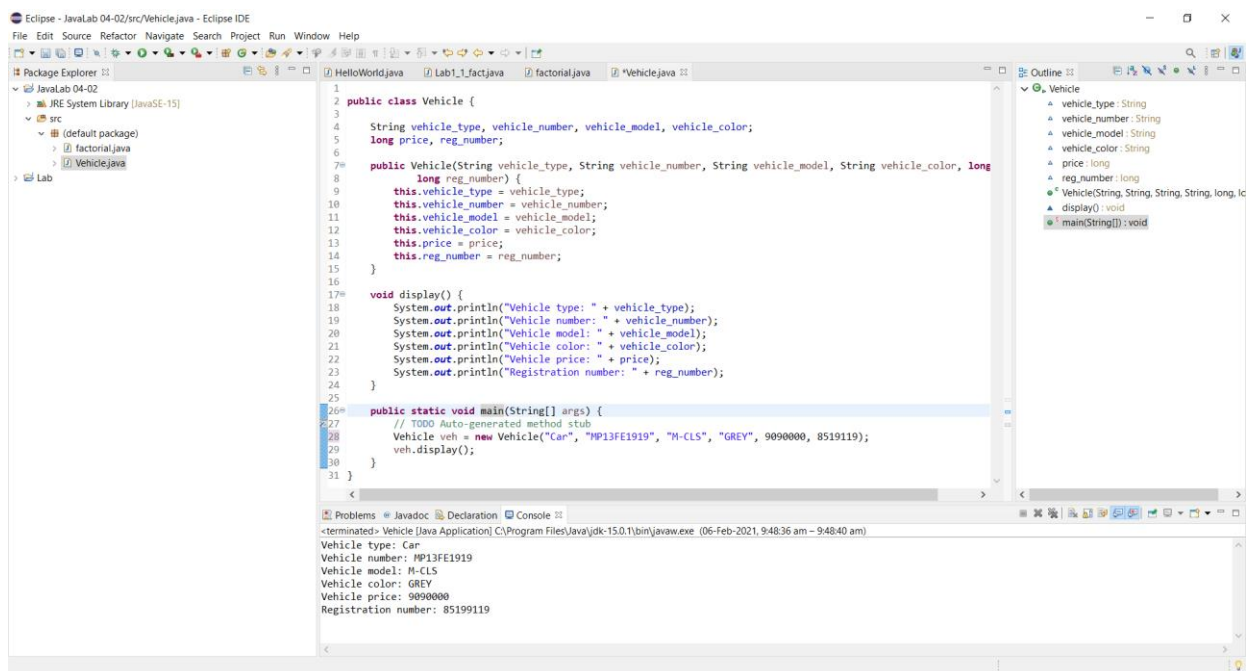
```
public class Vehicle {

    String vehicle_type, vehicle_number, vehicle_model, vehicle_color;
    long price, reg_number;

    public Vehicle(String vehicle_type, String vehicle_number, String
vehicle_model, String vehicle_color, long price,
                    long reg_number) {
        this.vehicle_type = vehicle_type;
        this.vehicle_number = vehicle_number;
        this.vehicle_model = vehicle_model;
        this.vehicle_color = vehicle_color;
        this.price = price;
        this.reg_number = reg_number;
    }

    void display() {
        System.out.println("Vehicle type: " + vehicle_type);
        System.out.println("Vehicle number: " + vehicle_number);
        System.out.println("Vehicle model: " + vehicle_model);
        System.out.println("Vehicle color: " + vehicle_color);
        System.out.println("Vehicle price: " + price);
        System.out.println("Registration number: " + reg_number);
    }

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Vehicle veh = new Vehicle("Car", "MP13FE1919", "M-CLS", "GREY",
9090000, 8519119);
        veh.display();
    }
}
```



3. Create an interface 'vehicle' and implement the methods of the interface in class 'bike' to get and display the attribute values.

Vehicle\_interface.java

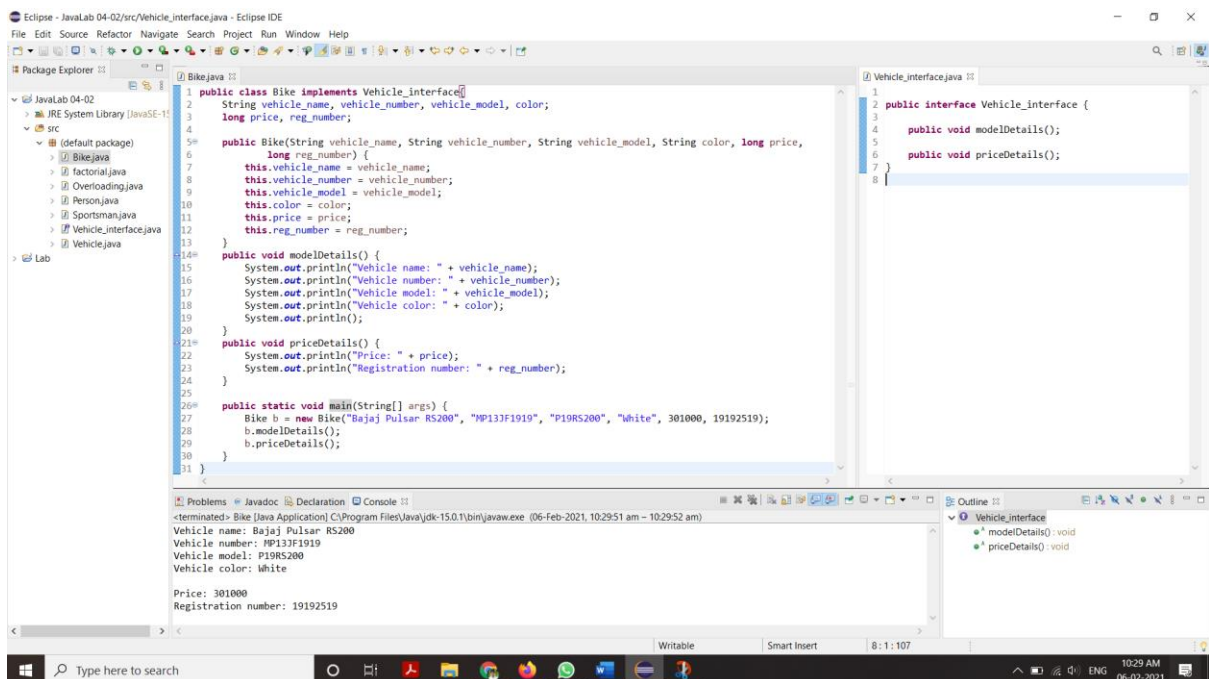
```
public interface Vehicle_interface {  
  
    public void modelDetails();  
  
    public void priceDetails();  
}
```

Bike.java

```
public class Bike implements Vehicle_interface{  
    String vehicle_name, vehicle_number, vehicle_model, color;  
    long price, reg_number;  
  
    public Bike(String vehicle_name, String vehicle_number, String  
vehicle_model, String color, long price,  
        long reg_number) {  
        this.vehicle_name = vehicle_name;  
        this.vehicle_number = vehicle_number;  
        this.vehicle_model = vehicle_model;  
        this.color = color;  
        this.price = price;  
        this.reg_number = reg_number;  
    }  
    public void modelDetails() {  
        System.out.println("Vehicle name: " + vehicle_name);  
        System.out.println("Vehicle number: " + vehicle_number);  
        System.out.println("Vehicle model: " + vehicle_model);  
        System.out.println("Vehicle color: " + color);  
        System.out.println();  
    }  
    public void priceDetails() {  
        System.out.println("Price: " + price);  
        System.out.println("Registration number: " + reg_number);  
    }  
  
    public static void main(String[] args) {  
        Bike b = new Bike("Bajaj Pulsar RS200", "MP13JF1919", "P19RS200",  
"White", 301000, 19192519);  
        b.modelDetails();  
        b.priceDetails();  
    }  
}
```

```
Problems Javadoc Declaration Console
<terminated> Bike [Java Application] C:\Program Files\Java\jdk-
Vehicle name: Bajaj Pulsar RS200
Vehicle number: MP13JF1919
Vehicle model: P19RS200
Vehicle color: White

Price: 301000
Registration number: 19192519
```



4. Write a JAVA program, in which create a sportsman class that inherits the class person to initialize the basic attributes of a sportsman object.

Person.java

```
public class Person {
    String name;
    double height, weight;
    int age;

    public Person() {
        name = "";
        height = 0;
        weight = 0;
        age = 0;
    }

    public Person(String name, double height, double weight, int age) {
        this.name = name;
        this.height = height;
        this.weight = weight;
        this.age = age;
    }

    public void display() {
        System.out.println("Name: " + name);
        System.out.println("Height: " + height);
        System.out.println("Weight: " + weight);
        System.out.println("Age: " + age);
    }
}
```

Sportsman.java

```
public class Sportsman extends Person {

    String sport;
    char gender;

    public Sportsman(String name, double height, double weight,
        int age, String sport, char gender) {
        super(name, height, weight, age);
        this.sport = sport;
        this.gender = gender;
    }

    public void display() {
        super.display();
        System.out.println("Sport: " + sport);
        System.out.println("Gender: " + gender);
    }

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Sportsman s = new Sportsman("Ronaldo", 179, 70, 30, "Football", 'M');
        s.display();
    }
}
```

Problems Javadoc Declaration Console

<terminated> Sportsman [Java Application] C:\Program Files\Java\jdk

Name: Ronaldo  
Height: 179.0  
Weight: 70.0  
Age: 30  
Sport: Football  
Gender: M

Eclipse - JavaLab 04-02/SportsmanJava - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- JavaLab 04-02
  - JRE System Library [JavaSE-11]
  - src
    - (default package)
      - factorial.java
      - Overloading.java
      - Person.java
      - Sportsman.java
      - Vehicle.java

Lab

Sportsman.java

```
1 public class Sportsman extends Person {
2
3     String sport;
4     char gender;
5
6
7     public Sportsman(String name, double height, double weight,
8         int age, String sport, char gender) {
9         super(name, height, weight, age);
10        this.sport = sport;
11        this.gender = gender;
12    }
13
14    public void display() {
15        super.display();
16        System.out.println("Sport: " + sport);
17        System.out.println("Gender: " + gender);
18    }
19
20    public static void main(String[] args) {
21        // TODO Auto-generated method stub
22        Sportsman s = new Sportsman("Ronaldo", 179, 70, 30, "Football", 'M');
23        s.display();
24    }
25
26
27 }
```

Person.java

```
1 public class Person {
2     String name;
3     double height, weight;
4     int age;
5
6     public Person() {
7         name = "";
8         height = 0;
9         weight = 0;
10        age = 0;
11    }
12
13    public Person(String name, double height, double weight, int age) {
14        this.name = name;
15        this.height = height;
16        this.weight = weight;
17        this.age = age;
18    }
19
20    public void display() {
21        System.out.println("Name: " + name);
22        System.out.println("Height: " + height);
23        System.out.println("Weight: " + weight);
24        System.out.println("Age: " + age);
25    }
26 }
```

Outline

- Sportsman
  - sport: String
  - gender: char
  - Sportsman(String, double, double, int, String, char)
  - display(): void
  - main(String[]): void

Problems Javadoc Declaration Console

<terminated> Sportsman [Java Application] C:\Program Files\Java\jdk-15.0.1\bin\javaw.exe (06-Feb-2021, 10:09:12 am - 10:09:15 am)

Name: Ronaldo  
Height: 179.0  
Weight: 70.0  
Age: 30  
Sport: Football  
Gender: M

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10:13 AM 06-02-2021

5. Create a JAVA program to perform method overloading to perform addition of float and integer numbers.

```
public class Overloading {  
  
    public int add(int x, int y) {  
        return x + y;  
    }  
  
    public float add(float x, float y) {  
        return x + y;  
    }  
  
    public static void main(String[] args) {  
        // TODO Auto-generated method stub  
  
        Overloading m = new Overloading();  
        System.out.println("Sum of 1 and 9 is: " + m.add(1, 9));  
        System.out.println("Sum of 1.7 and 9.5 is: " + m.add(1.7f, 9.5f));  
    }  
}
```

