CT/2021/015-Wijewardhana.N.P

Lab Worksheet 03-Defining Classes

Q01) Code:

```
package Q_01_AND_Q_02;

public class Temperature {
    private double celsius;
    public Temperature(){

    }
    public Temperature(double celsius){
        this.celsius=celsius;
    }

    public double tocelsius(){
        return celsius;
    }

    public double toFahrenheit(){
        return (celsius*((double)9/5)+32 );
    }
    public void setcelsius(double celsius){
        this.celsius=celsius;
    }

    public void setFahrenheit(double fahrenheit){
        this.celsius=(fahrenheit-32)*((double)5/9 );
    }

}
```

```
package Q_01_AND_Q_02;
import java.util.Scanner;
public class Main {
    public static void main(String[] args) {
        Scanner scan=new Scanner(System.in);

        System.out.println("Enter the temperature celsius:");
        double celsius=scan.nextDouble();

        Temperature temp=new Temperature();
        temp.setcelsius(celsius);
        System.out.println("the celsius is convert in to
fahrenheit:"+temp.toFahrenheit());
    }

}
```

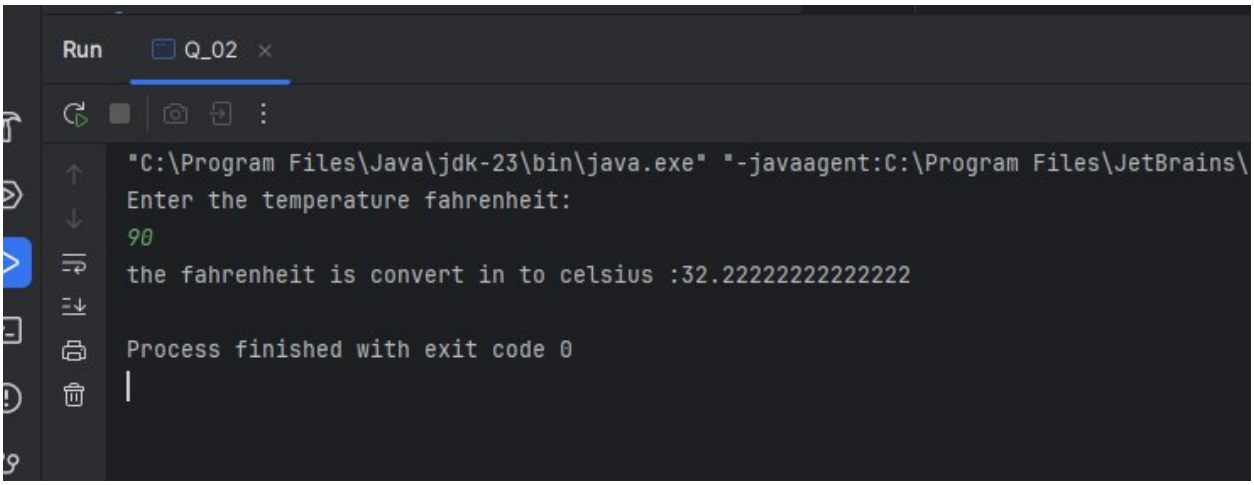
Output:


Run
Main
"C:\Program Files\Java\jdk-23\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA
Enter the temperature celsius:
120
the celsius is convert in to fahrenheit:248.0
Process finished with exit code 0

Q02) Code:

```
package Q_01_AND_Q_02;
import java.util.Scanner;

public class Main_Q_02 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);

        System.out.println("Enter the temperature fahrenheit:");
        double fahrenheit=scan.nextDouble();

        Temperature temp1=new Temperature();
        temp1.setFahrenheit(fahrenheit);
        System.out.println("the fahrenheit is convert in to
celsius :"+temp1.tocelsius());


    }

}
```

Output:

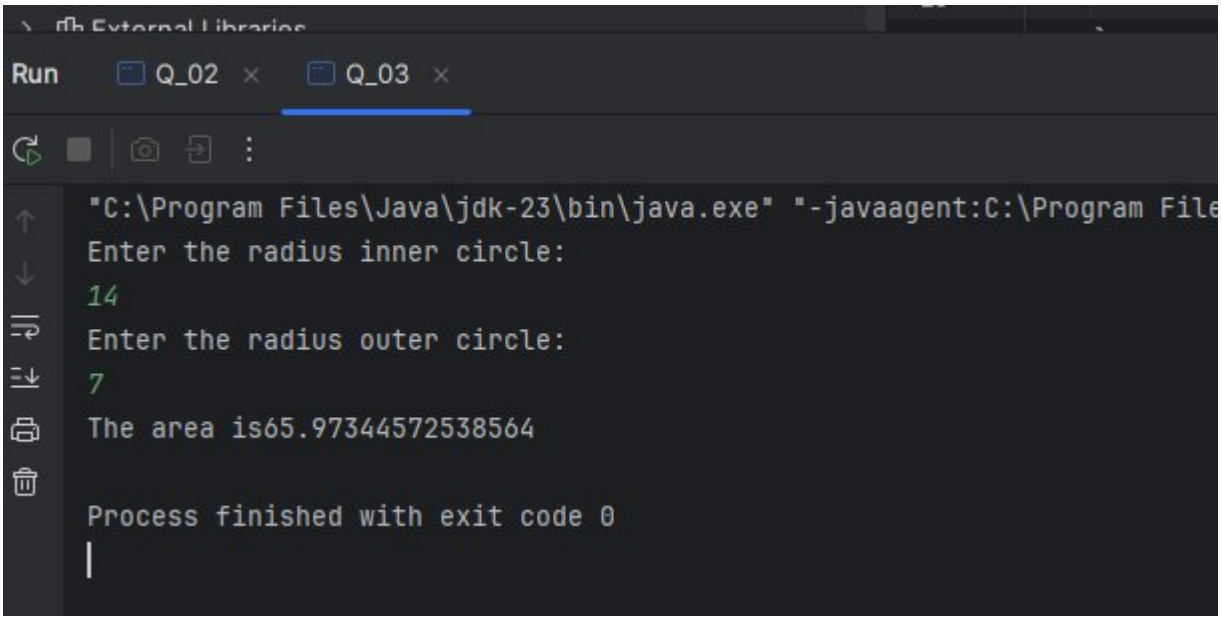


Q03) Code:

```
package Q_03;
public class Circle {
    private double r;

    public Circle() {
    }
    public Circle(double r){
        this.r=r;
    }

    public double getR() {
        return r;
    }

    public void setR(double r) {
        this.r = r;
    }

    public double computeArea(){
        return Math.PI*r*r;
    }

    public double computeCircumference(){
        return 2*Math.PI*r;
    }
}
```

```
package Q_03;
import java.util.Scanner;
public class Q_03 {
    public static void main(String[] args) {
        Scanner scan=new Scanner(System.in);

        System.out.println("Enter the radius inner circle:");
        double innerRadius=scan.nextDouble();

        System.out.println("Enter the radius outer circle:");
        double outerRadius=scan.nextDouble();

        Circle outerCircle=new Circle(outerRadius);
        Circle innerCircle=new Circle(innerRadius);
        double area=outerCircle.computeArea()-
innerCircle.computeCircumference();
        System.out.println("The area is"+area);
    }
}
```

Output:


External Libraries
Run
Q_02
Q_03
"C:\Program Files\Java\jdk-23\bin\java.exe" "-javaagent:C:\Program File
Enter the radius inner circle:
14
Enter the radius outer circle:
7
The area is65.97344572538564
Process finished with exit code 0

Q04) code:

```
package Q_04;

public class Owner {
    // Data Member
    private String ownerName;
    private String phoneNo;


    public Owner(String name,String num) {
     this.ownerName = name;
     this.phoneNo = num;
    }

    public String getOwnerName() {
        return ownerName;
    }

    public void setOwnerName(String name) {
        ownerName = name;
    }
    public String getPhoneNo() {
        return phoneNo;
    }

    public void setPhoneNo(String num) {
        phoneNo = num;
    }
    }
```

```
package Q_04;

public class BicycleNew {
    Owner bicycleOwner;

    public BicycleNew(Owner bicycleOwner ) {
        this.bicycleOwner = bicycleOwner;
    }

    public Owner getBicycleOwner() {
        return bicycleOwner;
    }

    public void setBicycleOwner(Owner bicycleOwner) {
        this.bicycleOwner = bicycleOwner;
    }
}
```

```java
package Q_04;

public class Q_04_Main {
    public static void main(String[] args) {
        Owner Piyumi=new Owner("Piyumi","077-1234567");
        BicycleNew tomahawk=new BicycleNew(Piyumi);
        System.out.println("Owner
Name:"+tomahawk.getBicycleOwner().getOwnerName());
        System.out.println("Owner Tel-
Num:"+tomahawk.getBicycleOwner().getPhoneNo());
    }
}
```

Output:

Q_05) Code:

```
package Q_05;

public class Course {
    private String CourseName;
    private String CourseCode;
    private Lecturer lecturerIncharge;

    public String getCourseName() {
        return CourseName;
    }

    public void setCourseName(String courseName) {
        CourseName = courseName;
    }

    public String getCourseCode() {
        return CourseCode;
    }

    public void setCourseCode(String courseCode) {
        CourseCode = courseCode;
    }

    public Lecturer getLecturerIncharge() {
        return lecturerIncharge;
    }

    public void setLecturerIncharge(Lecturer lecturerIncharge) {
        this.lecturerIncharge = lecturerIncharge;
    }
}
```

```
package Q_05;

public class Lecturer {
    private String LecturerName;
    private String CourseTeaching;

    public String getLecturerName() {
        return LecturerName;
    }

    public void setLecturerName(String lecturerName) {
        LecturerName = lecturerName;
    }

    public String getCourseTeaching() {
        return CourseTeaching;
    }

    public void setCourseTeaching(String courseTeaching) {
        CourseTeaching = courseTeaching;
    }
}
```

```java
package Q_05;

public class Student {
    private String StudentName;
    private String DegreeName;
    private String CourseFollowing;

    public String getStudentName() {
        return StudentName;
    }

    public void setStudentName(String studentName) {
        StudentName = studentName;
    }

    public String getDegreeName() {
        return DegreeName;
    }

    public void setDegreeName(String degreeName) {
        DegreeName = degreeName;
    }

    public String getCourseFollowing() {
        return CourseFollowing;
    }

    public void setCourseFollowing(String courseFollowing) {
        CourseFollowing = courseFollowing;
    }
}
```

```java
package Q_05;

public class Main {
    public static void main(String[] args) {
        Course course=new Course();
        course.setCourseName("OOP");
        course.setCourseCode("CTEC-22043");


        Lecturer lecturer=new Lecturer();
        lecturer.setLecturerName("Dr.A.B.Perera");
        lecturer.setCourseTeaching("OOP");

        Student student=new Student();
        student.setStudentName("Piyumi");
        student.setCourseFollowing("OOP");
        student.setDegreeName("BICT");

        System.out.println("Course Name:"+course.getCourseName());
        System.out.println("Course Code:"+course.getCourseCode());

        System.out.println("Lecture Name:"+lecturer.getLecturerName());
        System.out.println("Course Teaching:"+lecturer.getCourseTeaching());
```

```
        System.out.println("Student Name:"+student.getStudentName());
        System.out.println("DegreeName:"+student.getDegreeName());
        System.out.println("Course Following:"+student.getCourseFollowing());

    }
}
```

Output: