**Lab Report**

**Course Tittle:** Object Oriented Programming Lab

**Course Code:** CSE 215

**Experiment No:** 02

**Experiment Name:** Implementation of Java class, object, construction, method overriding, method overloading, this keyword, super keyword, Inheritance

**Submitted To:**

**Name:** Mst. Umme Ayman

**Designation:** Lecturer

**Department of CSE**

**Daffodil International University**

**Submitted By**

**Name:** Md Raduan Ahamed

**ID:** 0242220005101839

**Section:** 63\_O

**Department of CSE**

**Daffodil International University**

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import java.util.Scanner;  
public class Shape {  
 double a;  
 double b;  
 double c;  
 String color = "Default";  
 void displayVariables(){  
 System.*out*.print("Three sides of the triangle are: ");  
 System.*out*.println(a + " " + b + " " + c);  
 }  
}  
class Circle extends Shape{  
 double pi = 3.1416;  
 String color = "Red";  
 Circle(double a){  
 this.a = a;  
 }  
 *//Constructor Overloading* Circle(double r, String color) {  
 a = r;  
 super.color = color; *// super key-word* }  
 void display(){  
 System.*out*.println("Radius of the circle is: " + a);  
 System.*out*.println("Circumference is: " + (2.0\*pi\*a));  
 System.*out*.println("Area is: " + (pi\*a\*a));  
 System.*out*.println("Original color is " + color); *// Red* System.*out*.println("Re-painted color is " + super.color); *// input color* }  
}  
class Triangle extends Shape{  
 double height;  
 @Override  
 void displayVariables(){  
 System.*out*.print("Three sides of the triangle are: ");  
 System.*out*.println(a + " " + b + " " + c);  
 System.*out*.println("Height: " + height);  
 }  
}

import java.util.Scanner;  
  
public class Main {  
 public static void main(String[] args) {  
 System.*out*.println("Hello! Welcome to our Lab Project. " +  
 "What shape do you want to work with?\n 1. Triangle" +  
 "\n 2. Circle");  
 Scanner sc = new Scanner(System.*in*);  
 Scanner sc2 = new Scanner(System.*in*);  
 int choice = sc.nextInt();  
 if (choice == 2) {  
 System.*out*.print("Enter the radius you want: ");  
 double radius = sc.nextDouble();  
 System.*out*.println("Color of your circle? ");  
 String color = sc2.nextLine();  
 *// overloading* Circle obj\_1 = new Circle(radius);  
 Circle obj\_2 = new Circle(radius, color);  
 obj\_2.display();  
 } else {  
 System.*out*.print("Enter three sides of the triangle: ");  
 Shape obj\_1 = new Shape();  
 obj\_1.a = sc.nextDouble();  
 obj\_1.b = sc.nextDouble();  
 obj\_1.c = sc.nextDouble();  
 System.*out*.print("Enter three sides and also the height: ");  
 Triangle obj\_2 = new Triangle();  
 obj\_2.a = sc.nextDouble();  
 obj\_2.b = sc.nextDouble();  
 obj\_2.c = sc.nextDouble();  
 obj\_2.height = sc.nextDouble();  
 *//override* obj\_1.displayVariables();  
 obj\_2.displayVariables();  
 }  
 }  
}

**Output:**

Hello! Welcome to our Lab Project. What shape do you want to work with?

1. Triangle

2. Circle

2

Enter the radius you want: 5

Color of your circle?

red

Radius of the circle is: 5.0

Circumference is: 31.416

Area is: 78.54

Original color is Red

Re-painted color is red