CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

DEVANG PATEL INSTITUTE OF ADVANCE TECHNOLOGY & RESEARCH

Information Technology

PART -IV
Inheritance, Interface, Package

Aim: Assume you want to capture shapes, which can be either circles (with a radius and a color) or rectangles (with a length, width, and color). You also want to be able to create signs (to post in the campus center, for example), each of which has a shape (for the background of the sign) and the text (a String) to put on the sign. Create classes and interfaces for circles, rectangles, shapes, and signs. Write a program that illustrates the significance of interface default method.

Code:

```
import java.util.Scanner;
class signs {
   Scanner sc = new Scanner(System.in);
   double Area;
   String text, color;

   signs() {
      System.out.print("Color : ");
      color = sc.nextLine();
      System.out.print("Text  : ");
      text = sc.nextLine();
      if (text == "") {
```

```
            text = sc.nextLine();
        }
    }
}

interface shapes {
    public  void input();
    public  void output();
}

class circle extends signs implements shapes {
    double r;

    public void input() {
        System.out.print("Radius : ");
        r = sc.nextDouble();
        Area = 3.14 * r * r;
    }

    public void output() {
        System.out.print("\n# Circle \nColor : "+color+"\nText : "+text+"\nArea : "+Area);
    }
}
class rectangle extends signs implements shapes {
    double l,w;

    public void input() {
        System.out.print("length : ");
        l = sc.nextDouble();
        System.out.print("Width : ");
        w = sc.nextDouble();
```

```
        Area =  l * w;
    }
    public void output() {
        System.out.print("\n# Rectangle \nColor : "+color+"\nText  : "+text+"\nArea : "+Area);
    }
}
public class clg4_6 {
    public static void main(String[] args) {
    Scanner sc = new Scanner(System.in);
    int a;
    System.out.print("\nMenu\n1. Circle\n2. Rectangle\n# ");
    a = sc.nextInt();
    switch (a) {
        case 1:
            System.out.print("\nCiecle\n");
            circle c = new circle();
            c.input();
            c.output();
            break;

        case 2:
            System.out.print("\nRectangle\n");
            rectangle r = new rectangle();
            r.input();
            r.output();
            break;

        default:
        System.out.print("\nInvaild Input!\n");
        break;
    }
```

```
    System.out.println("\n                    -- Name : Malav Patel\n                    Id  : 20DIT059 ");
    }
}
```

Output:

```
PS C:\Users\4217m\Desktop\Code\pic\clg> cd "c:\Users\4217m\Desktop\Code\pic\clg\"
ava clg4_6 }

Menu
1. Circle
2. Rectangle
# 1

Ciecle
Color : Red
Text  : Center
Radius : 2

# Circle
Color : Red
Text : Center
Area : 12.56
                                        -- Name : Malav Patel
                                           Id   : 20DIT059
PS C:\Users\4217m\Desktop\Code\pic\clg>
```

```
Menu
1. Circle
2. Rectangle
# 2

Rectangle
Color : Blue
Text  : Left
length : 2
Width : 4

# Rectangle
Color : Blue
Text  : Left
Area : 8.0
                                        -- Name : Malav Patel
                                           Id   : 20DIT059
PS C:\Users\4217m\Desktop\Code\pic\clg> cd "c:\Users\4217m\Desktop\Code\pic\clg\" ; if ($?) { javac clg4_
ava clg4_6 }

Menu
1. Circle
2. Rectangle
# 3

Invaild Input!

                                        -- Name : Malav Patel
                                           Id   : 20DIT059
PS C:\Users\4217m\Desktop\Code\pic\clg>
```

Conclusion:

The usage of the keyword super to call the constructors of the super class from the base class is learned from this program.