Họ và tên : Phạm Văn Phúc

MSSV:

Code

Class : Shape

public class Shape {

    protected String color;

    protected boolean filled;

    public Shape() {

*this*.color = "red";

*this*.filled = true;

    }

    public Shape(String *color*, boolean *filled*) {

*this*.color = *color*;

*this*.filled = *filled*;

    }

    public void setColor(String *color*) {

*this*.color = *color*;

    }

    public String getColor() {

        return *this*.color;

    }

    public boolean isFilled() {

        return *this*.filled;

    }

    public void setFilled(boolean *filled*) {

*this*.filled = *filled*;

    }

    public String toString() {

        return "Color : " + color + ", Filled : " + filled + "|";

    }

}

Class : Circle

public class Circle extends Shape {

    private double radius;

    public Circle() {

*super*();

*this*.radius = 1.0;

    }

    public Circle(double *radius*, String *color*, boolean *filled*) {

*super*(*color*, *filled*);

*this*.radius = *radius*;

    }

    public double getRadius() {

        return *this*.radius;

    }

    public void setRadius(double *radius*) {

*this*.radius = *radius*;

    }

    public double getArea() {

        return *this*.radius \* *this*.radius \* 3.14;

    }

    public double getPerimeter() {

        return *this*.radius \* 2 \* 3.14;

    }

    public String toString() {

        return *super*.toString() + " Circle : radius = " + radius + ", Area = " + getArea() + ", Perimeter = "

                + getPerimeter();

    }

}

Class : Rectangle

public class Rectangle extends Shape {

    protected double width;

    protected double length;

    public Rectangle() {

*super*();

*this*.width = 1.0;

*this*.length = 1.0;

    }

    public Rectangle(double *width*, double *length*) {

*super*();

*this*.width = *width*;

*this*.length = *length*;

    }

    public Rectangle(double *width*, double *length*, String *color*, boolean *filled*) {

*super*(*color*, *filled*);

*this*.width = *width*;

*this*.length = *length*;

    }

    public double getWidth() {

        return *this*.width;

    }

    public void setWidth(double *width*) {

*this*.width = *width*;

    }

    public double getLength() {

        return *this*.length;

    }

    public void setLength(double *length*) {

*this*.length = *length*;

    }

    public double getArea() {

        return *this*.width \* *this*.length;

    }

    public double getPerimeter() {

        return (*this*.length + *this*.width) \* 2;

    }

    public String toString() {

        return *super*.toString() + " Rectangle : width =  " + width + ", length =  " + length + ", Area = " + getArea()

                + "|";

    }

}

Class : Square

public class Square extends Rectangle {

    private double side;

    public Square() {

*this*.side = 1.0;

    }

    public Square(double *side*) {

*super*(*side*, *side*);

*this*.side = *side*;

    }

    public Square(double *side*, String *color*, boolean *filled*) {

*this*.side = *side*;

*this*.color = *color*;

*this*.filled = *filled*;

*super*.setLength(*side*);

*super*.setWidth(*side*);

    }

    public double getSide() {

        return *this*.side;

    }

    public void setSide(double *side*) {

*this*.side = *side*;

*super*.setLength(*side*);

*super*.setWidth(*side*);

    }

    public double getLength() {

        return *this*.length;

    }

    public void setLength(double *length*) {

*super*.setLength(*length*);

*this*.side = *length*;

    }

    public void setWidth(double *length*) {

*super*.setWidth(*length*);

*this*.side = *length*;

    }

    public String toString() {

        return *super*.toString() + "Square: side = " + side;

    }

}

Class test

public class test {

    public static void main(String[] *args*) {

        Shape shape1 = new Shape("red", false);

        Circle circle1 = new Circle(5, "blue", false);

        Rectangle rectangle1 = new Rectangle(4, 3, "brown", true);

        Square square1 = new Square(6, "grey", false);

        shape1.setColor("pink");

        System.out.println(shape1.toString());

        circle1.setColor("pink");

        System.out.println(circle1.toString());

        rectangle1.setLength(8);

        System.out.println(rectangle1.toString());

        square1.setSide(3);

        System.out.println(square1.toString());

    }

}

Màn hình chạy

