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// Lab 10 UML Diagrams //

Problem 13.1

GeometricObject
- color : String - filled : boolean - dateCreated : java.util.Date
+ GeometricObject() + GeometricObject(color : String, filled : boolean) + getColor() + setColor(color : String) + isFilled() + setFilled(filled : boolean) + getDateCreated() + toString() + getArea() + getPerimeter()

Triangle {extends **GeometricObject**}
- side1 : double - side2 : double - side3 : double
+ Triangle() + Triangle(side1 : double, side2 : double, side3 : double) + getSide1() + getSide2() + getSide3() + setSide1(side : double) + setSide2(side : double) + setSide3(side : double) + getArea() + getPerimeter() + toString() + <u>isTriangle(side1 : double, side2 : double, side3 : double)</u> + checkTriangle()

GeometricObject {implements **Comparable**<GeometricObject>}

- color : String
- filled : boolean
- dateCreated : java.util.Date

+ GeometricObject()
+ GeometricObject(color : String, filled : boolean)
+ getColor()
+ setColor(color : String)
+ isFilled()
+ setFilled(filled : boolean)
+ getDateCreated()
+ toString()
+ getArea()
+ getPerimeter()
+ compareTo(o : GeometricObject)
+ <u>max(go1 : GeometricObject, go2 : GeometricObject)</u>

Rectangle {extends GeometricObject implements
Comparable<GeometricObject>}

- width : double
- height : double

+ Rectangle()
+ Rectangle(newWidth : double, newHeight : double)
+ getArea()
+ getPerimeter()
+ toString()

Circle2D {extends GeometricObject implements
Comparable<GeometricObject>

- x : double
- y : double
- radius : double

+ Circle2D()
+ Circle2D(x : double, y : double, radius : double)
+ getX()

+ getY()
+ getRadius()
+ getArea()
+ getPerimeter()
+ contains(x : double, y : double)
+ contains(circle : Circle2D)
+ overlaps(circle : Circle2D)
+ toString()
+ equals(circle : Circle2D)

Problem 13.7

Colorable (interface)
+ howToColor()

GeometricObject {implements **Comparable**<GeometricObject>}
- color : String
- filled : boolean
- dateCreated : java.util.Date
+ GeometricObject()
+ GeometricObject(color : String, filled : boolean)
+ getColor()
+ setColor(color : String)
+ isFilled()
+ setFilled(filled : boolean)
+ getDateCreated()
+ toString()
+ getArea()
+ getPerimeter()
+ compareTo(o : GeometricObject)
+ <u>max(go1 : GeometricObject, go2 : GeometricObject)</u>

Square {extends GeometricObject implements **Colorable**}
- x : double
- y : double
- side : double

```
+   Square()
+   Square(x : double, y : double, side : double)
+   getArea()
+   getPerimeter()
+   howToColor()
+   getX()
+   setX(x : double)
+   getY()
+   setY(y : double)
+   getSide()
+   setSide(side : double)
```

Problem 13.9

```
GeometricObject {implements Comparable<GeometricObject>}

-   color : String
-   filled : boolean
-   dateCreated : java.util.Date

+   GeometricObject()
+   GeometricObject(color : String, filled : boolean)
+   getColor()
+   setColor(color : String)
+   isFilled()
+   setFilled(filled : boolean)
+   getDateCreated()
+   toString()
+   getArea()
+   getPerimeter()
+   compareTo(o : GeometricObject)
+   max(go1 : GeometricObject, go2 : GeometricObject)
```

```
Circle2D {extends GeometricObject implements
Comparable<GeometricObject>

-   x : double
-   y : double
-   radius : double

+   Circle2D()
+   Circle2D(x : double, y : double, radius : double)
+   getX()
```

+ getY()
+ getRadius()
+ getArea()
+ getPerimeter()
+ contains(x : double, y : double)
+ contains(circle : Circle2D)
+ overlaps(circle : Circle2D)
+ toString()
+ equals(circle : Circle2D)

Problem 13.11

Circle2D {extends GeometricObject implements **Comparable**<GeometricObject>
- x : double
- y : double
- radius : double
+ Circle2D()
+ Circle2D(x : double, y : double, radius : double)
+ getX()
+ getY()
+ getRadius()
+ getArea()
+ getPerimeter()
+ contains(x : double, y : double)
+ contains(circle : Circle2D)
+ overlaps(circle : Circle2D)
+ toString()
+ equals(circle : Circle2D)

Octagon {extends GeometricObject implements **Cloneable**}
- side : double
+ Octagon()
+ Octagon(side : double)
+ getArea()
+ getPerimeter()
+ clone()
+ equals(object : Object)