CS 2334: Lab 10
Graphics

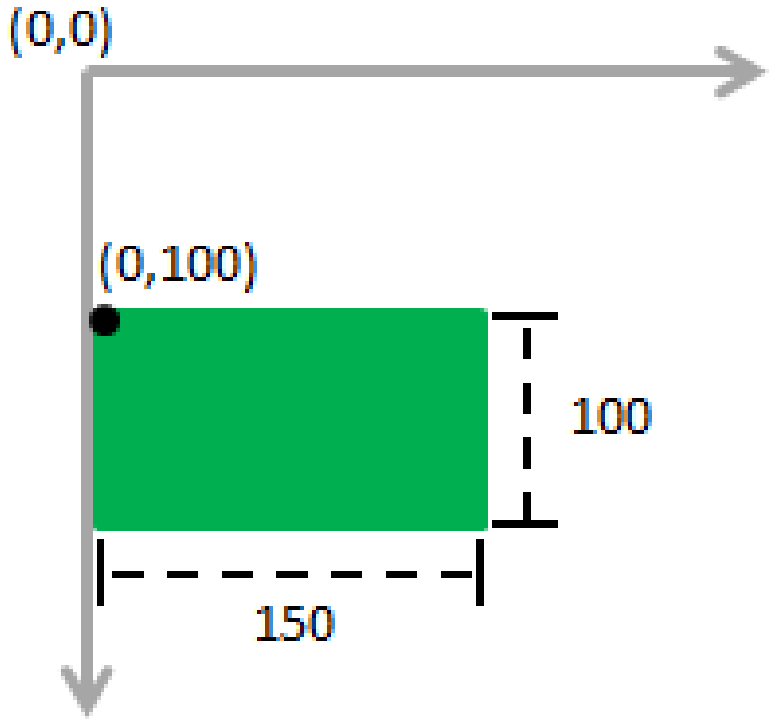
How do I draw?

- All components come with their own paintComponent(Graphics g) method
- Extend JPanel (a subclass of JComponent)
- Override protected void paintComponent(Graphics g)
  - The first call that this method makes should generally be to super.paintComponent()
  - Draw your graphics inside paintComponent
  - Called autonomously by the Java graphics system (not by your code)

Drawing Shapes

- Graphics class provides a LOT of useful drawing utilities
  - drawLine, drawArc, drawRect, drawString, …
  - Many have fill versions: fillArc, fillRect, …
- Examine Graphics API

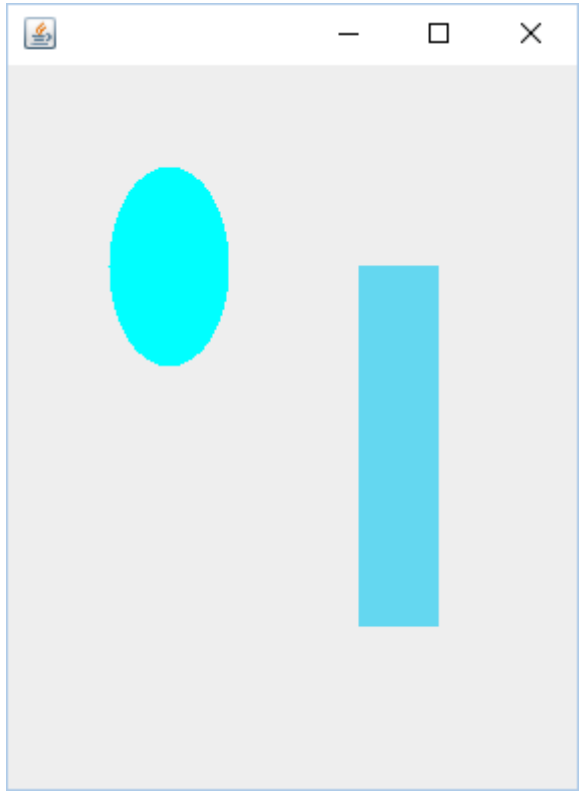
Coordinate Frame



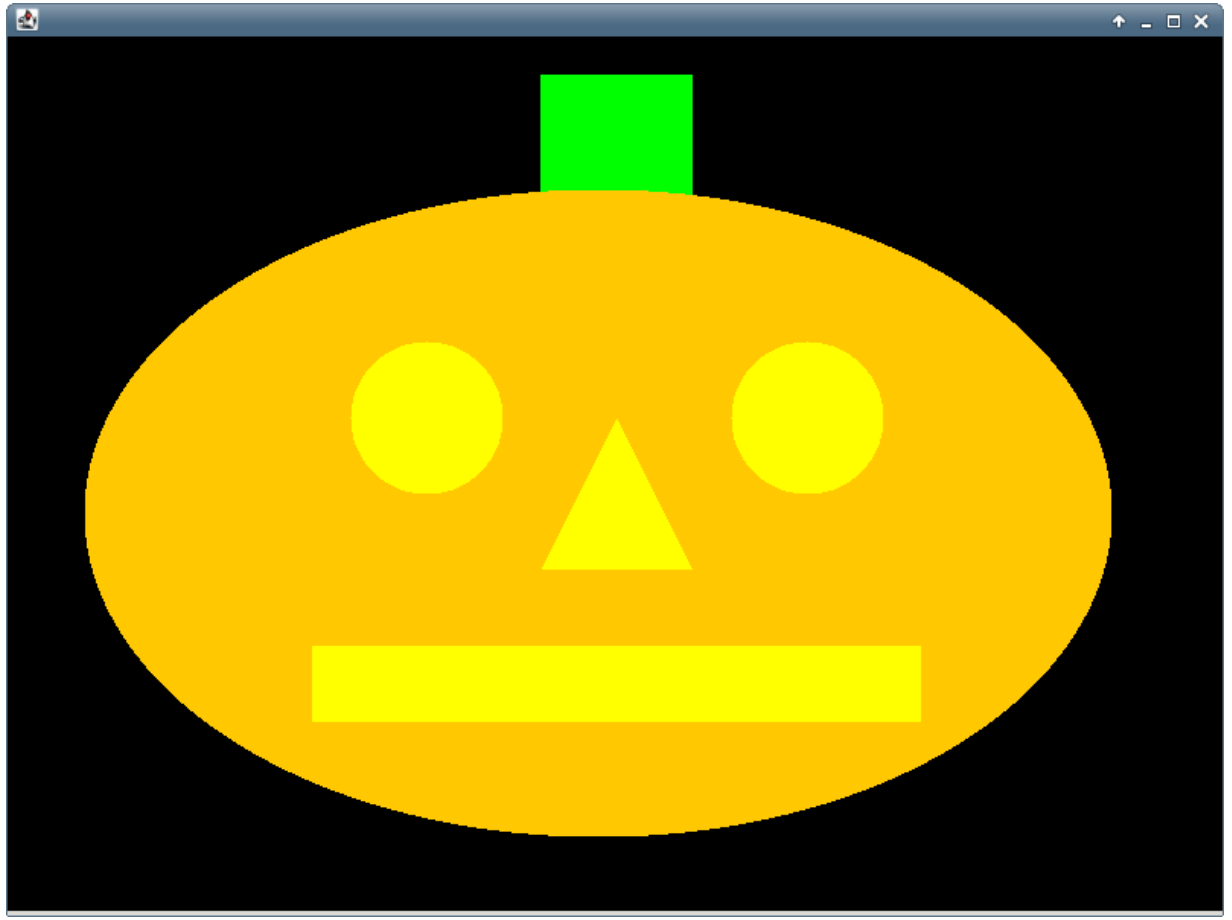
Taken from Zyante

Example

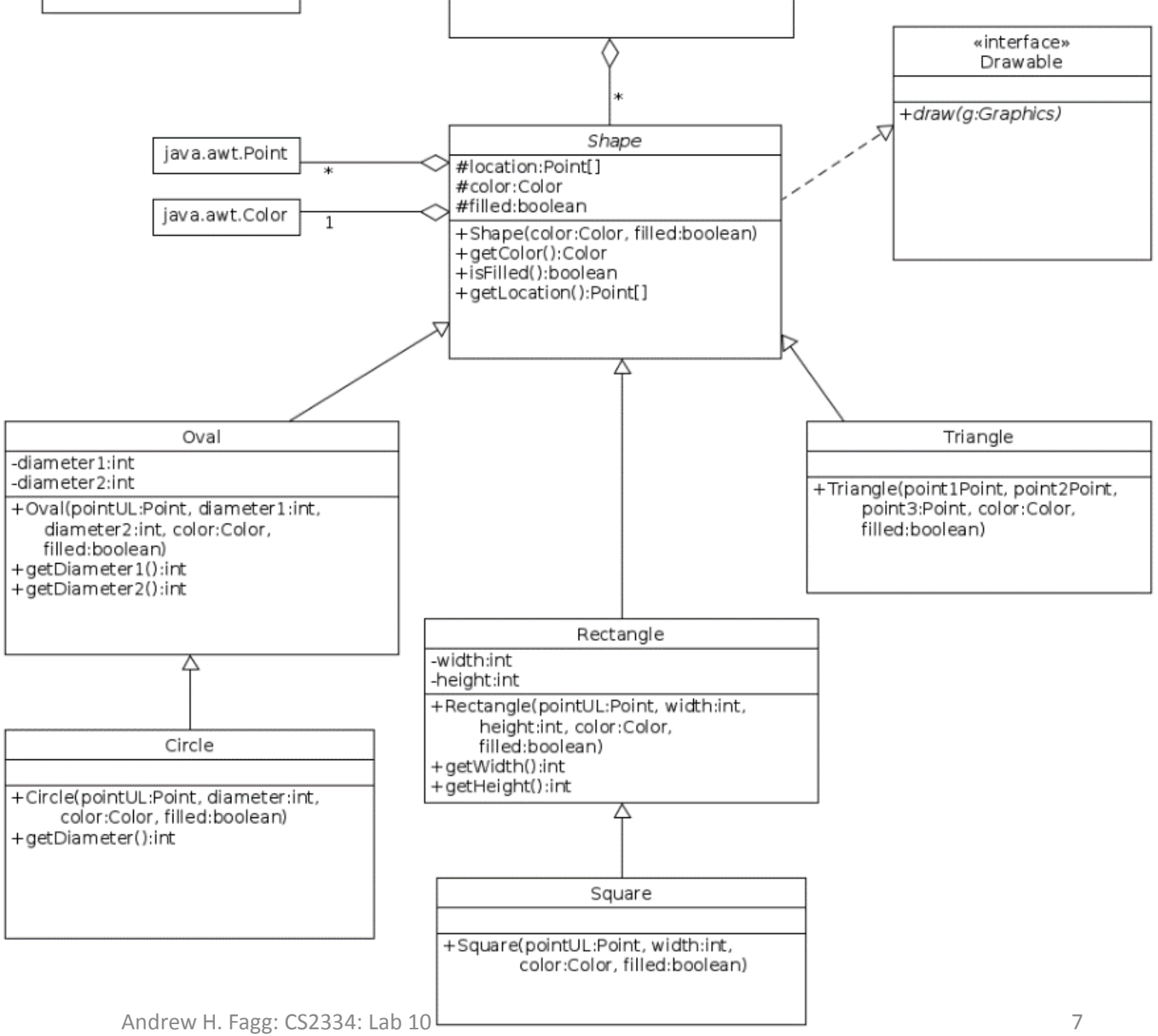
```
protected void paintComponent(Graphics g){
        // Clears the contents of the JPanel
        super.paintComponent(g);
        // Fill shapes
        g.setColor(Color.CYAN);
        g.fillOval(50, 50, 60, 100);
        g.setColor(new Color(100, 215, 240));
        g.fillRect(175, 100, 40, 180);
}
```



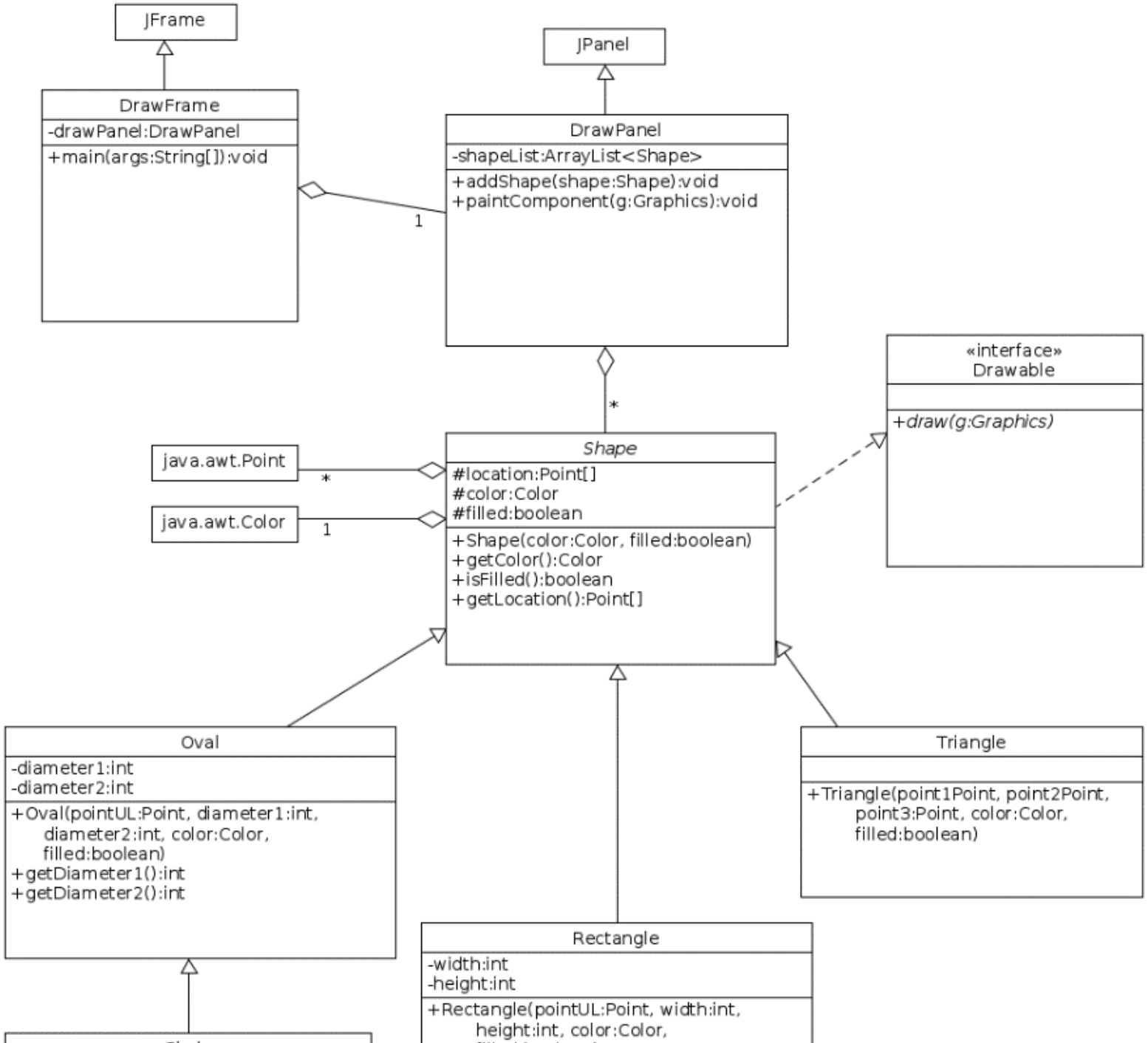
Lab 8: Spooky Pumpkin



UML: Shapes


«interface»
Drawable
+draw(g:Graphics)
*
Shape
#location:Point[]
#color:Color
#filled:boolean
+Shape(color:Color, filled:boolean)
+getColor():Color
+isFilled():boolean
+getLocation():Point[]
java.awt.Point
*
java.awt.Color
1
Oval
-diameter1:int
-diameter2:int
+Oval(pointUL:Point, diameter1:int, diameter2:int, color:Color, filled:boolean)
+getDiameter1():int
+getDiameter2():int
Triangle
+Triangle(point1Point, point2Point, point3:Point, color:Color, filled:boolean)
Rectangle
-width:int
-height:int
+Rectangle(pointUL:Point, width:int, height:int, color:Color, filled:boolean)
+getWidth():int
+getHeight():int
Circle
+Circle(pointUL:Point, diameter:int, color:Color, filled:boolean)
+getDiameter():int
Square
+Square(pointUL:Point, width:int, color:Color, filled:boolean)

UML: Frame/Panel



Lab 8

- Make sure that all variables and methods shown in the UML are included in your implementation of these classes
- Modify the code according to the TODO instructions given in the comments
- Important: Only one class provides paintComponent(), but it should call other methods to do the actual drawing
- Provide unit tests for the shape constructors

Submission

- Submit only one file: lab10.zip (casing matters)
- Due date: Friday, October 30th @11:59pm
- Submit to lab10 dropbox on D2L