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C212 Week 02 Attendance
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R2.1: A class houses objects, and objects are simply members of a class.

R2.2: Three objects of the String class are “Hello world!”, “rubiksCube”, and “1234”. System.out belongs to the PrintStream class.

R2.8:

```
public static void wow(int n)
{
        System.out.println(n + " is a cool number!");
}

public static int decade(int m)
{
        return (m + 10);
}
```

R2.13 & R2.16:

```
package com.company;
import javax.swing.*;
import java.awt.Graphics;
import java.awt.Graphics2D;
import java.awt.Rectangle;
import javax.swing.JComponent;

public class Rectangle {
   private int width;
   private int height;
   private int x;
   private int y;
   public Rectangle(int height , int width, int x, int y)
   {
       this.height = height;
       this.width = width;
       this.x = x;
       this.y = y;
   }
   public static void main(String[] args)
   {
       JFrame frame = new JFrame();
       frame.setSize(150, 250);
       frame.setTitle("Rectangles!");
       frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
       rectangleDraw rect1 = new rectangleDraw();
```

```
        frame.add(rect1);
        frame.setVisible(true);
    }
}
public class rectangleDraw extends JComponent
{
    public void paintComponent(Graphics g)
       {
          Graphics2D g2 = (Graphics2D) g;
          Rectangle q = new Rectangle(12, 30, 10, 10);
          g2.draw(q);
          Rectangle square = new Rectangle(10,20, 40, 40);
          g2.draw(square);
          square.translate(10, 0);
          g2.draw(square);
       }
}
```

R2.18: a. needs to be Rectangle r = new Rectangle(5, 10, 15, 20);

b. you just call *r.getWidth();* because you can't call the new rectangle in the declaration like that.

c. the variable *r* hasn't been initialized yet.

d. calling a new rectangle requires the user to enter all of the int arguments (height width x & y) as well.

R2.19: Accessor: getX, getY

Mutator: translate, setSize

R2.20:

- *x.concat(y)*; adds *y* to the end of *x*; String class; takes and returns String
- *x.trim();* removes trailing and leading whitespace; String class; takes and returns String
- *toString();* returns string version of rectangle; Rectangle class; takes Rect. returns String
- *getBounts();* done after adding rectangles together; Rectangle class; takes Rects. returns ints
- *r.nextFloat();* returns a float between 0 and 1; Random class; takes Rand. returns double

R2.21:

The object reference is simply the name that refers to the memory location of the actual object being used.

E2.12:

```
package com.company;
import java.util.Random;

public class DieSimulator {

   public static void main(String[] args)
   {
       Random num = new Random();
       System.out.println(1+num.nextInt(6));
   }
}
```

P2.13:

```
package com.company;
import javax.swing.*;

public class FaceViewer {
   public static void main(String[] args)
   {
       JFrame frame = new JFrame();
       frame.setSize(250,250);
       frame.setTitle("SmileyGuy :)");
       frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
       FaceComponent yuh = new FaceComponent();
       frame.add(yuh);
       frame.setVisible(true);
   }
}
package com.company;

import javax.swing.*;
import java.awt.*;
import java.awt.geom.Ellipse2D;
import java.awt.geom.Line2D;
import java.awt.geom.Rectangle2D;

public class FaceComponent extends JComponent {
   public void paintComponent(Graphics g)
   {
       Graphics2D g2 = (Graphics2D) g;
       Ellipse2D.Double head = new Ellipse2D.Double(5,10,150,150);
       g2.draw(head);

       g2.setColor(Color.BLUE);
       Ellipse2D eye = new Ellipse2D.Double(25, 70, 15, 15);
       g2.draw(eye);
       eye = new Ellipse2D.Double(100, 70, 15, 15);
```

```
        g2.draw(eye);
        Line2D.Double mouth = new Line2D.Double(30,110,120,110);
        g2.setColor(Color.RED);
        g2.draw(mouth);
    }
}
```

P2.4:

```
package com.company;
import javax.swing.*;
import java.awt.Rectangle;


public class intersectDemo {
    public static void main(String[] args)
    {
        JFrame frame = new JFrame();
        frame.setSize(250,250);
        frame.setTitle("Intersections are scary! D:");
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        Rectangle rekt = new Rectangle(12,20,40,40);
        Rectangle rokt = new Rectangle(8, 12, 30, 80);
        System.out.println(intersectionPrinter(rokt, rekt));

        rectComponent aye = new rectComponent();
        frame.add(aye);

        frame.setVisible(true);

        double area1 = rekt.getX()*rekt.getY();
        double area2 = rokt.getX()*rokt.getY();

        double area3 = (area1+area2) -
(rokt.intersection(rekt).getY()*rokt.intersection(rekt).getX());

        System.out.println("Remaining area: "+area3);
    }
    public static Rectangle intersectionPrinter(Rectangle r, Rectangle s)
    {
        Rectangle wow = r.intersection(s);
        return wow;
    }
}
```

```
package com.company;

import javax.swing.*;
import java.awt.*;
```

```
public class rectComponent extends JComponent {
   public void paintComponent(Graphics g)
   {
       Graphics2D g2 = (Graphics2D) g;
       Rectangle rekt = new Rectangle(12,20,40,40);
       g2.draw(rekt);
       Rectangle rokt = new Rectangle(8, 12, 30, 80);
       g2.draw(rokt);

       Rectangle inters = new Rectangle(rekt.intersection(rokt));
       g2.fill(inters);

   }
}
```