

```
cd cs111  
cp /Courses/cs111/examples/GUIExample.java.
```

space ↓

<http://cs.gettysburg.edu/~cpresser/cs111/GUIExample.java.html>

```
//import the Graphical Interface compnents
import javax.swing.*;

//import the drawing and event components
import java.awt.*;

//GUIExampe is a kind of panel
public class GUIExampe extends JPanel{

    //paintComponent: this method gets called automatically
    // anytime the screen needs to be redrawn.
    // The Graphics object is what has all the drawing methods
    public void paintComponent(Graphics g){

        //There are certain things every panel must do to draw
        //itself, this takes care of them.
        super.paintComponent(g);

        //We may need to use the width and height to draw.
        //These might change (when the window is resized), so
        //check them every time.
        int width = getWidth();
        int height = getHeight();

    }
}
```

```
public static void main(String[] args){
    //Create an instance of our Panel
    GUIExample panel = new GUIExample();

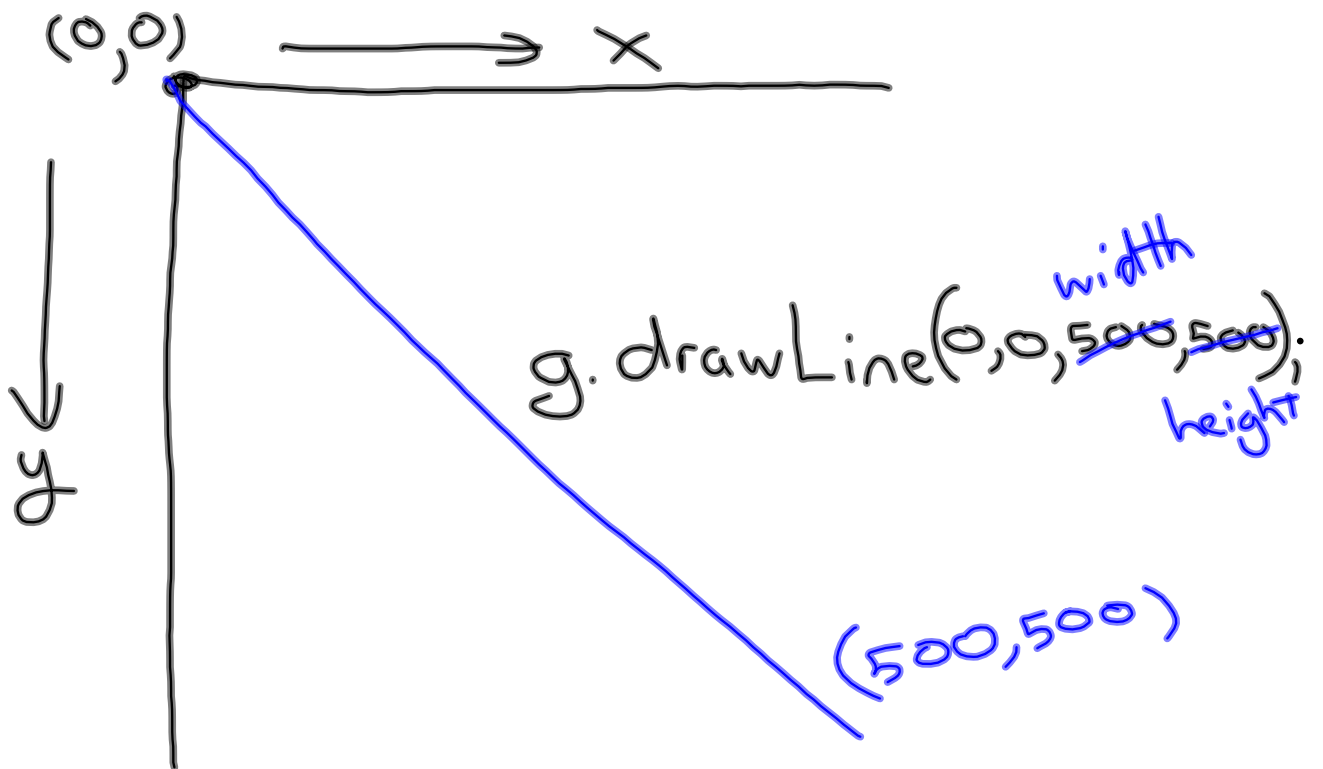
    //Create a window to hold our application.
    JFrame app = new JFrame();

    //Set up how the app should handle clicking the "x"
    app.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

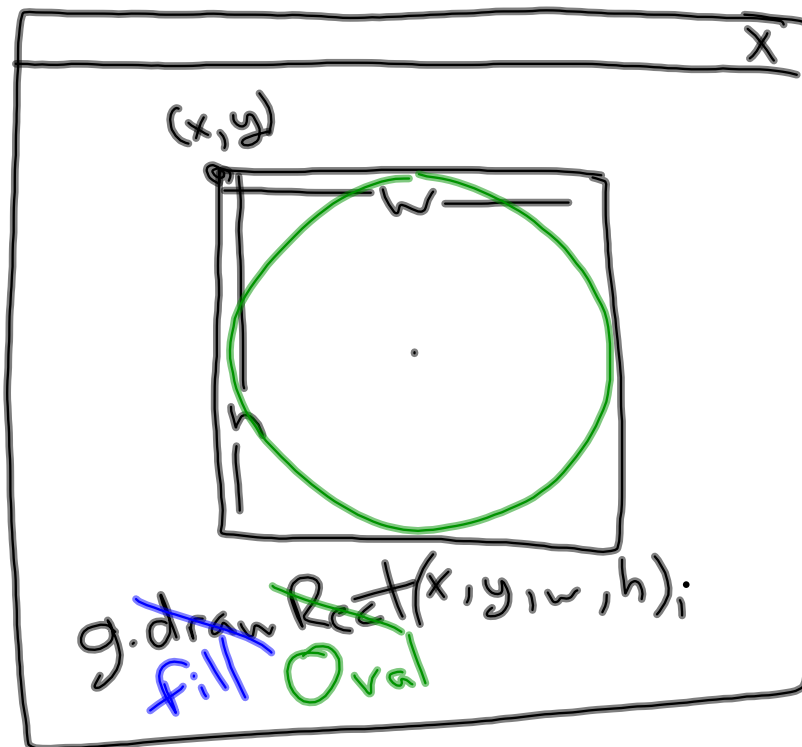
    //add our panel to the app
    app.add(panel);

    //set the size of the app
    app.setSize(500, 500);

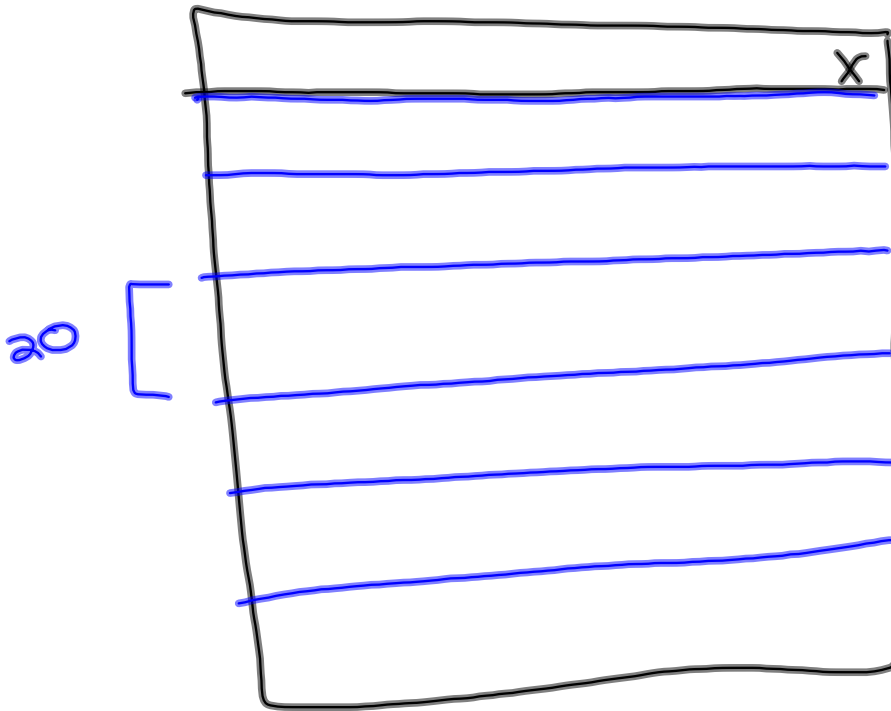
    //display the app's window
    app.setVisible(true);
}
```



```
g.setColor(Color.BLUE);  
g.drawString("Hello", width/2,  
height/2);
```



- green
- centered
- $w = \text{width}/2$
- $h = \text{height}/2$



```
g.setColor(new Color(128,0,128));
```

```
int h = 0;  
while (h < height) {  
    g.drawLine(0, h, width, h);  
    h += 20 height/10;  
}
```