Lesson 15: Applets and Graphics

1. An applet is a program that is called within another application—often a Web browser. It can contain any number of components, such as buttons, text fields, and pictures. To write an applet you, must import the JApplet class by using:

   ```
   import javax.swing.JApplet.*;
   ```

2. When you write an applet, you almost always want to use other components from the swing package as well.

   ```
   Import javax.swing.*;
   ```

3. **2 ways to run an applet:**
   a. **choose a Web Browser (Google Chrome, Mozilla, Edge) run or open an html file**

   Writing an HTML Document to HOST an Applet

   - Write the applet in Java and save it with a .java file extension, just as when you write a Java application.
   - Compile the applet into bytecode using the javac command, just as when you write a Java application.Write an HTML document that includes a statement to call your compiled Java class.

   HTML File

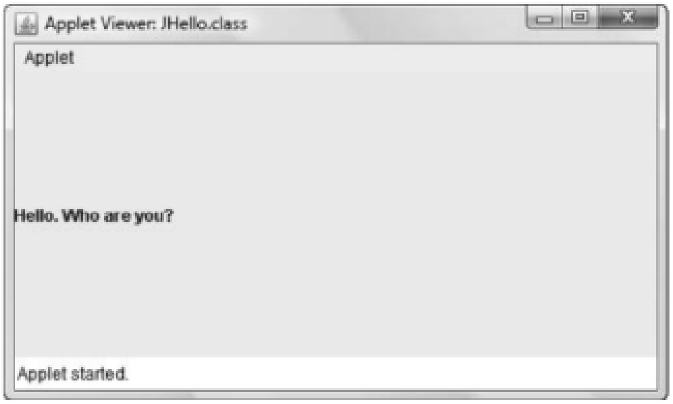
   ```
   <html>
   <object code = "JHello.class" width = 450 height = 200></object>
   </html>
   ```

   - code = is followed by the name of the compiled applet you are calling.
   - width = is followed by the width of the applet on the screen.
   - height = is followed by the height of the applet on the screen.

   Java File

   ```
   import javax.swing.*;
   import java.awt.*;
   public class JHello extends JApplet
   {
           JLabel greeting = new JLabel("Hello. Who are you?");
   public void init()
   {
           add(greeting);
   }
   }
   ```

   b. **Applet Viewer**



Hello. Who are you?

Applet started.

- Save the file JHello.java and compile it
- Run Applet Viewer using the command appletviewer TestJHello.html and save the file.

4. Methods

a. paint() - The paint()method is always called after the init() and start()methods execute. It is also called if an applet needs repainting.

    public void paint(Graphics g)

b. init() - init()method initialized tasks to perform, such as setting up user interface components

    public void init()

c. start() - method executes after the init()method, and it executes again every time the applet becomes active after it has been inactive

    public void start()

d. stop() - This method is invoked whenever a user leaves the web page. It is used to suspend the threads which are not required when the applet is in the background or is not visible on the screen. These can be easily resumed using the start() method.

    public void stop()

e. destroy() - (same definition as “stop()”)

    public void destroy()

5. Shapes and Color

a. Graphics.setColor()**-** This is the setColor() method which is the Graphics class method imported by the java.awt.*; package. This method sets the color for the object by specified color. Here is the syntax of the setColor() method :

    g.setColor(Color.color_name);

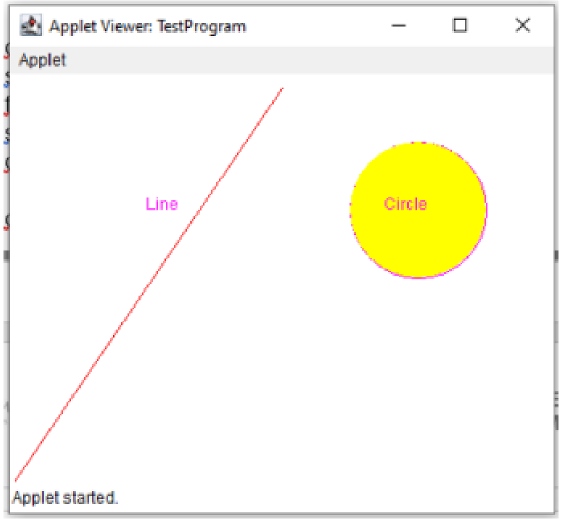
b. Graphics.fillOval()- This is the fillOval() method used to fill the color inside the oval by specified color. Here is the syntax of the fillColor() method :

    g.fillColor(Color.color_name);

c. Graphics.fillRect()- This is the fillRect() method used to fill the color inside the rectangle by specified color. Here is the syntax of the fillRect() method :

    g.fillRect(int X_coordinate, int Y_coordinate, int Wdth, int height)

```
public void paint(Graphics g) {
        g.setColor(Color.red); //Drawing line color is red
        g.drawLine(3,300,200,10);
        g.setColor(Color.magenta);
        g.drawString("Line",100,100);
        g.drawOval(x-r,y-r,100,100);
        g.setColor(Color.yellow); //Fill the yellow color in circle
        g.fillOval( x-r,y-r, 100, 100 );
```



Applet started.

```
        g.setColor(Color.magenta);
        g.drawString("Circle",275,100);

        g.drawRect(400,50,200,100);
        g.setColor(Color.yellow); //Fill the yellow color in rectangle
        g.fillRect( 400, 50, 200, 100 );
        g.setColor(Color.magenta);
        g.drawString("Rectangle",450,100);
}
```