Java Applets

MODULE NAME: OBJECT ORIENTED PROGRAMMING WITH JAVA

MODULE CODE: CST 05206

INSTRUCTORS: JAMILA L.

Introduction

An applet is a Java program that runs in a web browser.

- A Java applet is typically embedded in a Web page and can be run from a browser.
- You need special HTML in the Web page to tell the browser about the applet.
- For security reasons, applets run in a sandbox: they have no access to the client's file system.

Sad new!! Applet was deprecated from almost all browser and JDKs

Introduction cont…

- You write an applet by extending the class Applet or JApplet.
- Applet is just a class like any other; you can even use it in applications if you want
- When you write an applet, you are only writing part of a program
- The browser (HTML)supplies the main method.

The genealogy of Applet

```
java.lang.Object
   |
   +----java.awt.Component
           |
           +----java.awt.Container
                   |
                   +----java.awt.Panel
                           |
                           +----java.applet.Applet
```

The simplest possible applet

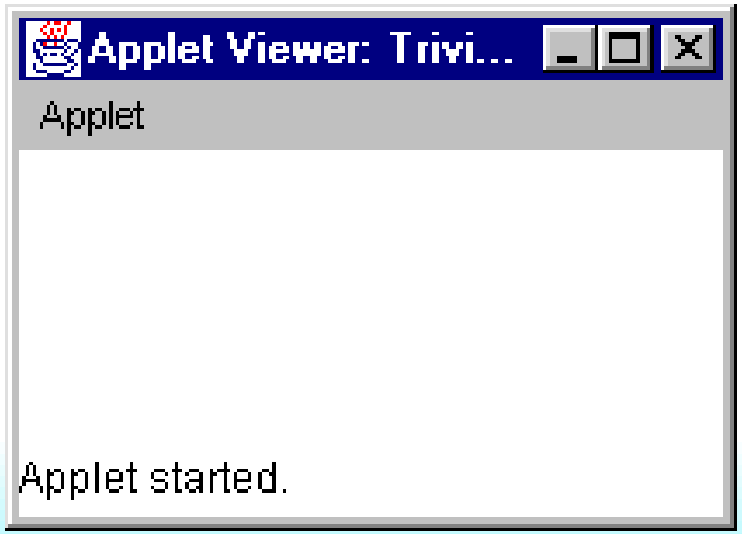
- TrivialApplet.java

```
import java.applet.Applet;
public class TrivialApplet extends Applet {
System.out.println("Praise the LORD!!")}
```

- TrivialApplet.html

```
<applet

code="TrivialApplet.class"
    width="150" height="100">
</applet>
```



The simplest reasonable applet

```
import java.awt.*;
import java.applet.Applet;

public class HelloWorld extends
  Applet {
public void paint( Graphics g ) {
        g.drawString( "Hello
  World!", 30, 30 );
    }
}
```



Applets in HTML

```
<html>
<head>
<title>Hello World Applet</title>
</head>
<body>
<applet codebase="classes" code="HelloWorld.class"
  width="350" height="200"></applet>
</body>
</html>
```

Why an applet works

- You write an applet by extending the class Applet or JApplet
- Applet or Japplet defines methods init(), start(), stop(), paint(Graphics), destroy()
- These methods do nothing – they are stubs.
- You make the applet do something by overriding these methods.

Applet methods

- public void init ()
- public void start ()
- public void stop ()
- public void destroy ()
- public void paint (Graphics)

public void init ( )

- This is the first method to execute.
- It is the best place to define the GUI Components (buttons, text fields, scrollbars, etc.), lay them out, and add listeners to them.
- Almost every applet you ever write will have an init( ) method.

public void start ( )

- Not always needed
- Called after init( )
- Called each time the page is loaded and restarted
- Used mostly in conjunction with stop( )
- start() and stop( ) are used when the Applet is doing time-consuming calculations that you do not want to continue when the page is not in front.

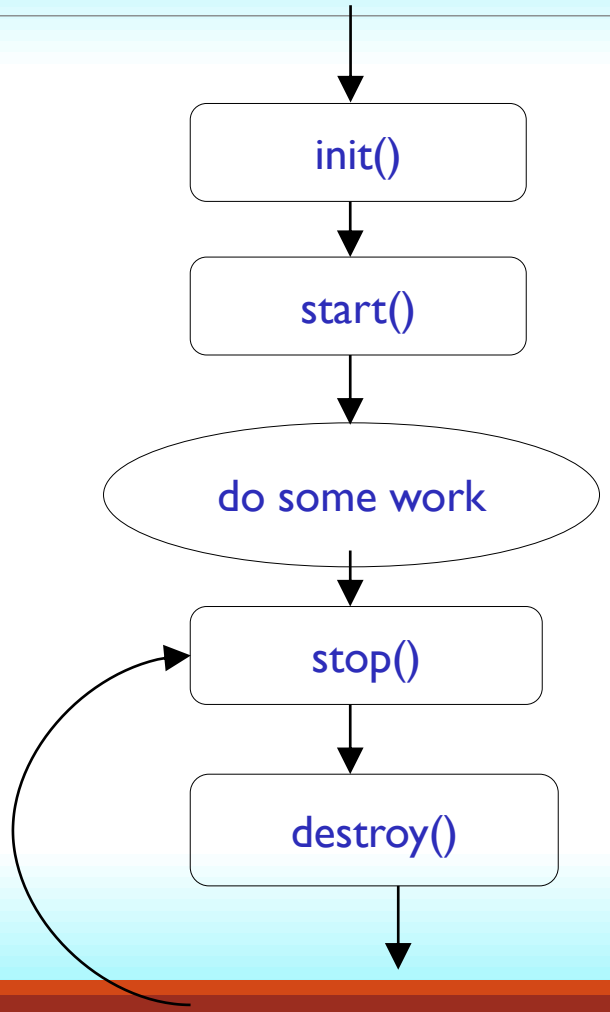
public void stop( )

- Not always needed
- Called when the browser leaves the page
- Called just before destroy( )
- Use stop( ) if the applet is doing heavy computation that you do not want to continue when the browser is on some other page.
- Used mostly in conjunction with start()

public void destroy( )

- Not often needed
- Called after stop( )
- Use to explicitly release system resources (like threads)
- System resources are usually released automatically.

Methods are called in this order



- init and destroy are only called once each
- start and stop are called whenever the browser enters and leaves the page
- *do some work* is code called by your *listeners*
- paint is called when the applet needs to be repainted

public void paint(Graphics g)

- Needed if you do any drawing or painting other than just using standard GUI Components.
- Any painting you want to do should be done here, or in a method you call from here
- Painting that you do in other methods may or may not happen.

Sample Graphics methods

A Graphics is something you can paint on:

- g.drawString("Hello", 20, 20);

Hello

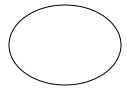
- g.drawRect(x, y, width, height);



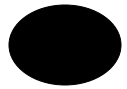
- g.fillRect(x, y, width, height);



- g.drawOval(x, y, width, height);



- g.fillOval(x, y, width, height);



- g.setColor(Color.red);



Other useful Applet methods

- System.out.println(String s)
  - Works from appletviewer, not from browsers
  - Automatically opens an output window.
- showStatus(String) displays the String in the applet's status line.
  - Each call overwrites the previous call.
  - You have to allow time to read the line!

Applets java file calculating sum

```
import java.awt.Graphics;
import java.awt.Color;
import java.awt.Font;
import javax.swing.JApplet;

public class SumApplet extends JApplet {
 public void paint (Graphics g){
      super.paint(g);
      g.setColor(Color.blue);
      g.setFont(new Font("arial",Font.BOLD,18));
      int num1=3,num2=4,sum;
      sum=num1+num2;
      g.drawString("the sum is "+sum,30,30);
 }
}
```

Applets in HTML

```
<html>
    <head>
        <title>sum applet</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width,
initial-scale=1.0">
    </head>
    <body>
    <applet code="SumApplet.class" width="300"
height="350"></applet>

    </body>
</html>
```

Thank you!

for listenING