Applets

By,

Hitha Paulson
Assistant Professor
LF College, Guruvayoor

Applets

- An applet is a program written in the Java programming language that can be included in an HTML page, much in the same way an image is included in a page.

- When you use a Java technology-enabled browser to view a page that contains an applet, the applet's code is transferred to your system and executed by the browser's Java Virtual Machine

- By calling certain methods, a browser manages an applet life cycle, if an applet is loaded in a web page.

- Applets are small applications that are accessed on an Internet server, transported over the Internet, automatically installed, and run as part of a Web document

- Applet has limited access to the client machine's resources

- The limited access can produce an arbitrary multimedia user interface and run complex computations without introducing the risk of viruses or breaching data integrity.

Applet Creation

- An Applet is a graphical user interface
- GUI is designed using AWT(Abstract Window Toolkit) control
- Two versions of GUI controls

    - AWT control
    - SWING controls

- An Applet should be subclass of java.applet.Applet class and it should be **public**
- An Applet does not contains main() method

Applet Architecture

- Applets are event driven
- An EVENT is a state of change of source
- Applets executes the statements based events
- So programs are written within the methods equallent to particular event
- Event based methods in a Applet
  - Public void init()
  - Public void start()
  - Public void paint()
  - Public void stop()
  - Public void destroy()

Sample Applet Programs

import java.awt.*;

import java.applet.*;

public class SimpleApplet extends Applet

{

  public void paint(Graphics g)

  {

    g.drawString("A Simple Applet",20,20);

  }

}

Applet Execution

- There are two ways to run the applet

1. Executing the applet within a Java-compatible Web browser, such as Netscape Navigator.

2. Using an applet viewer, such as the standard JDK tool, `appletviewer`.

3. An applet viewer executes your applet in a window. This is generally the fastest and easiest way to test your applet.

Writing Applet Programs

- Applets are not standalone programs
- Applets are embedded within Web pages(HTML file)
- Sample Applet enabled HTML file

```
<html>
<body>
<applet code="MyApplet.class" width=200 height=200>
</applet>
</body>
</html>
```

Applet tag

Applet Viewer

- It is a SDK tool to test the applet.
- **Method 1:**
  - Prompt:\>appletviewer FirstApplet.html
- **Method 2:**

  import java.applet.*;

  import java.awt.*;

  /*<applet code="first" width=400 height=400></applet>*/

  public class first extends Applet

  { public void paint(Graphics g){}}
  - Prompt:\>appletviewer FirstApplet.java

Life Cycle

- Basically, there are four methods in the Applet class on which any applet is built.
- `init`: This method is intended for whatever initialization is needed for your applet. It is called after the `param` attributes of the applet tag.
- `start`: This method is automatically called after init method. It is also called whenever user returns to the page containing the applet after visiting other pages.
- `stop`: This method is automatically called whenever the user moves away from the page containing applets. You can use this method to stop an animation.
- `destroy`: This method is only called when the browser shuts down normally.
- The applet can be initialized once and only once, started and stopped one or more times in its life, and destroyed once and only once.
- Another, `paint()`, is defined by the AWT `Component` class.

Life cycle

- Sample program

Repainting

- Repaint() ---- > Update() -----$\rightarrow$ Paint()
- Example:

  – Moving Banner creation

Sending parameters to Applets

- Sample Programs