



Web Technology (KCS-602) Unit 1

Prepared By

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Java Applet

Applet is a special type of program that is embedded in the webpage to generate the dynamic content. It runs inside the browser and works at client side.

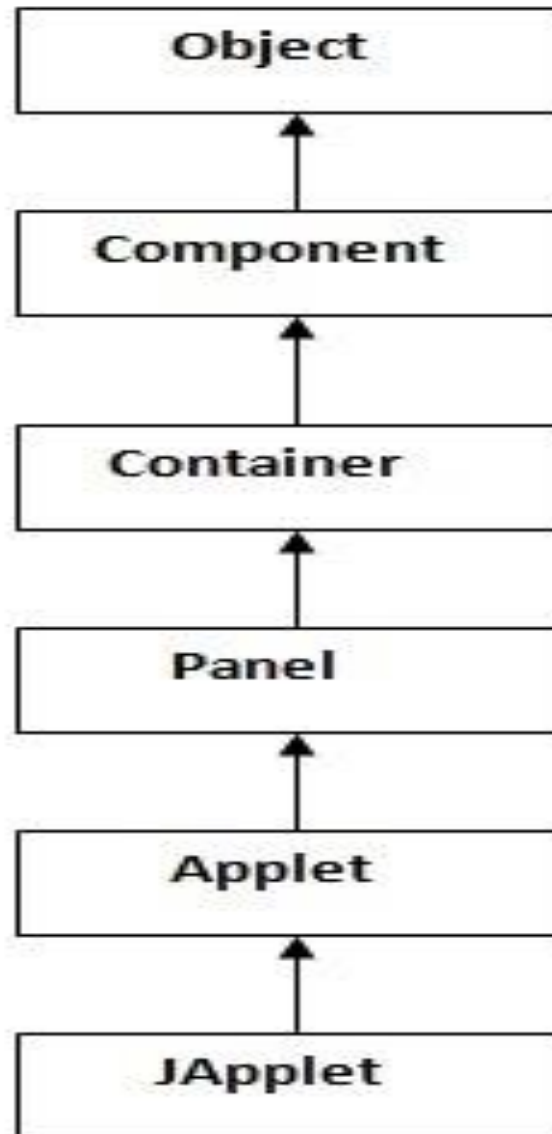
Advantage of Applet

- There are many advantages of applet. They are as follows:
- It works at client side so less response time.
- Secured
- It can be executed by browsers running under many platforms, including Linux, Windows, Mac Os etc.

Drawback of Applet

- Plugin is required at client browser to execute applet.

Hierarchy of Applet



Lifecycle of Java Applet

- Applet is initialized.
- Applet is started.
- Applet is painted.
- Applet is stopped.
- Applet is destroyed.

Lifecycle methods for Applet

For creating any applet `java.applet.Applet` class must be inherited. It provides 4 life cycle methods of applet.

- **public void init():** is used to initialize the Applet. It is invoked only once.
- **public void start():** is invoked after the `init()` method or browser is maximized. It is used to start the Applet.
- **public void stop():** is used to stop the Applet. It is invoked when Applet is stop or browser is minimized.
- **public void destroy():** is used to destroy the Applet. It is invoked only once.

public void paint(Graphics g): is used to paint the Applet. It provides Graphics class object that can be used for drawing oval, rectangle, arc etc.

How to run an Applet?

There are two ways to run an applet

- By html file.
- By appletViewer tool (for testing purpose).

Applet by html file

```
import java.applet.Applet;  
import java.awt.Graphics;  
public class First extends Applet  
{  
    public void paint(Graphics g){  
        g.drawString("welcome",150,150);  
    }  
}
```


Applet by appletviewer tool

```
import java.applet.Applet;
import java.awt.Graphics;
public class First extends Applet{

    public void paint(Graphics g){
        g.drawString("welcome to applet",150,150);
    }

}
/*
<applet code="First.class" width="300" height="300">
</applet>
*/
```

myapplet.html

```
<html>
```

```
<body>
```

```
<applet code="First.class" width="300" height="300">
```

```
</applet>
```

```
</body>
```

```
</html>
```

Displaying Graphics in Applet

java.awt.Graphics class provides many methods for graphics programming.

Displaying graphics in swing

Commonly used methods of Graphics class:

- **public abstract void drawString(String str, int x, int y):** is used to draw the specified string.
- **public void drawRect(int x, int y, int width, int height):** draws a rectangle with the specified width and height.
- **public abstract void fillRect(int x, int y, int width, int height):** is used to fill rectangle with the default color and specified width and height.
- **public abstract void drawOval(int x, int y, int width, int height):** is used to draw oval with the specified width and height.
- **public abstract void fillOval(int x, int y, int width, int height):** is used to fill oval with the default color and specified width and height.
- **public abstract void drawLine(int x1, int y1, int x2, int y2):** is used to draw line between the points(x1, y1) and (x2, y2).

- **public abstract boolean drawImage(Image img, int x, int y, ImageObserver observer):** is used draw the specified image.
- **public abstract void drawArc(int x, int y, int width, int height, int startAngle, int arcAngle):** is used draw a circular or elliptical arc.
- **public abstract void fillArc(int x, int y, int width, int height, int startAngle, int arcAngle):** is used to fill a circular or elliptical arc.
- **public abstract void setColor(Color c):** is used to set the graphics current color to the specified color.
- **public abstract void setFont(Font font):** is used to set the graphics current font to the specified font.

Example of Graphics in applet

```
import java.applet.Applet;  
import java.awt.*;  
public class GraphicsDemo extends Applet{  
public void paint(Graphics g){  
    g.setColor(Color.red);  
    g.drawString("Welcome",50, 50);  
    g.drawLine(20,30,20,300);  
    g.drawRect(70,100,30,30);  
    g.fillRect(170,100,30,30);  
    g.drawOval(70,200,30,30);  
    g.setColor(Color.pink);  
    g.fillOval(170,200,30,30);  
    g.drawArc(90,150,30,30,30,270);  
    g.fillArc(270,150,30,30,0,180);  
} }
```