APPLET

An **applet** is a Java program that runs in a Web browser.

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.

Any applet in Java is a class that extends the **java.applet.Applet** class.

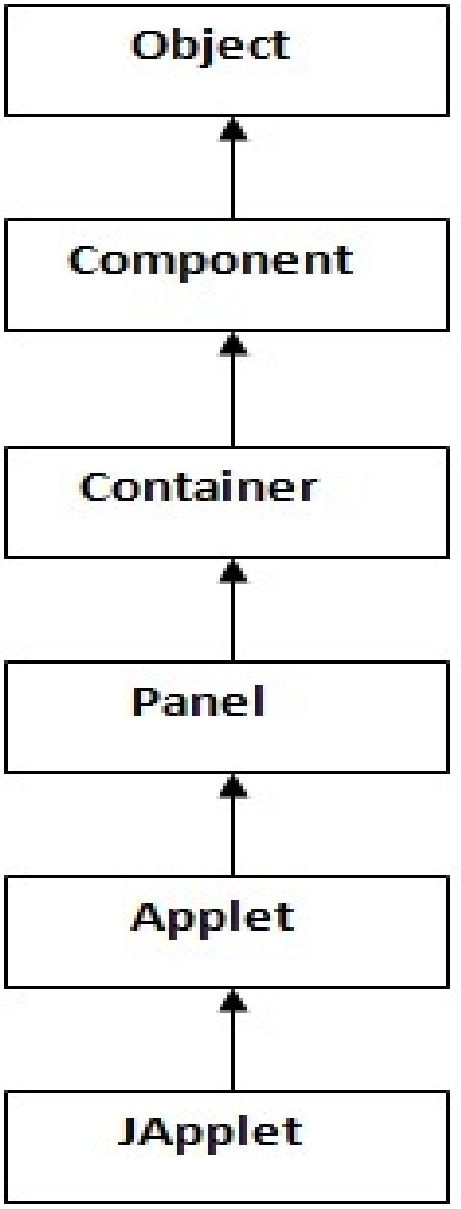
Advantage of Applet

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.

Hierarchy of Applet :

- As displayed in the diagram, Applet class extends Panel. Panel class extends Container, which is the subclass of Component.
- Where Object class is base class for all the classes in java.
- JApplet class is extension of Applet class.



Lifecycle of Applet

There are 5 lifecycle methods of Applet, Those are

public void init(): is used to initialized 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 paint(Graphics g): is invoked immediately after the start() method, and this method helps to create Applet's GUI such as a colored background, drawing and writing.

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.

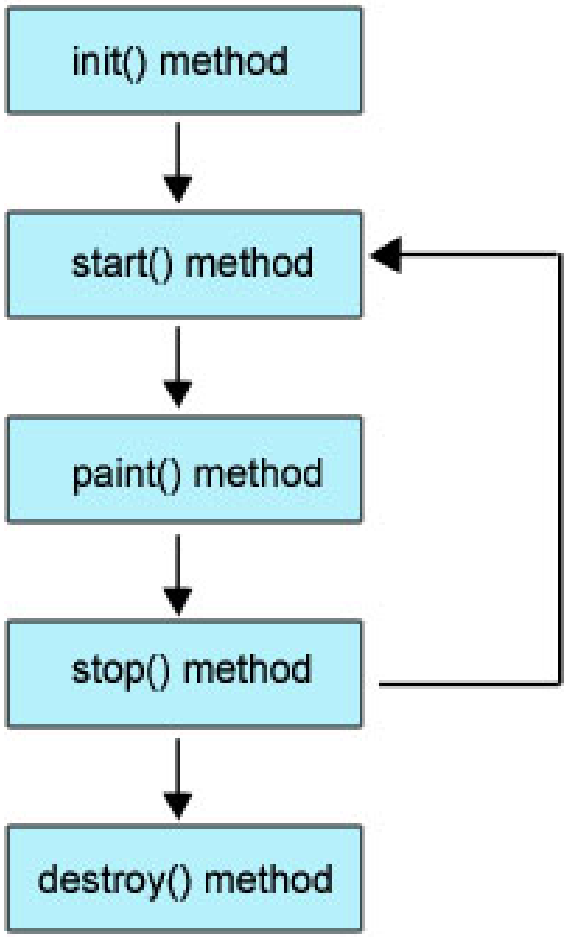


Figure: Life cycle of Applet

Remember:

java.applet.Applet class provides 4 methods (**init,start,stop & destroy**)
and **java.awt.Graphics** class provides 1 method (**paint**) to create Applet.

Simple example of Applet

- To execute an Applet, First Create an applet and compile it just like a simple java program.

First.java

```
import java.applet.Applet;
import java.awt.Graphics;
public class First extends Applet
{
public void paint(Graphics g){
g.drawString("Welcome to Applet",50,150);
}
}
```

Compile:

```
D:\> javac First.java
D:\>
```

After successful compilation, we get **First.class** file.

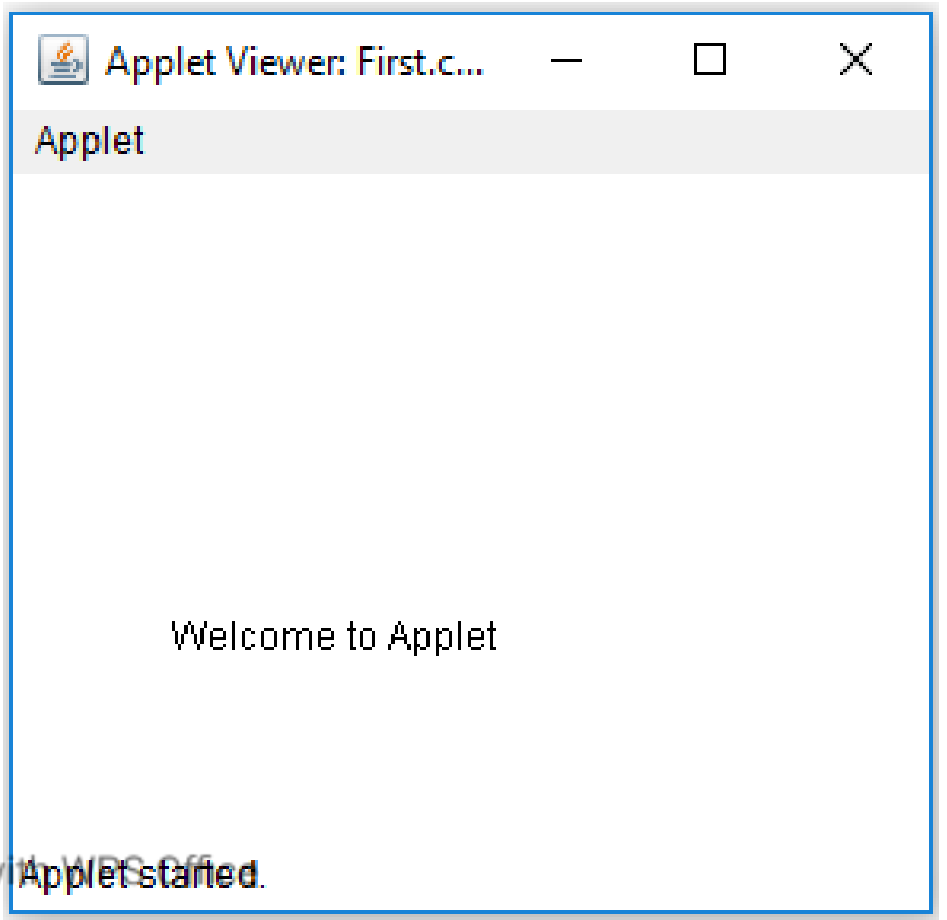
➤ After that create an html file and place the applet code in html file.

First.html

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

Execute:

D:\> appletviewer First.html



Displaying Graphics in Applet

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

The Commonly used methods of Graphics class:

- **drawString(String str, int x, int y):** is used to draw the specified string.
- **drawRect(int x, int y, int width, int height):** draws a rectangle with the specified width and height.
- **fillRect(int x, int y, int width, int height):** is used to fill rectangle with the default color and specified width and height.
- **drawOval(int x, int y, int width, int height):** is used to draw oval with the specified width and height.
- **fillOval(int x, int y, int width, int height):** is used to fill oval with the default color and specified width and height.
- **drawLine(int x1, int y1, int x2, int y2):** is used to draw line between the points(x1, y1) and (x2, y2).
- **setColor(Color c):** is used to set the graphics current color to the specified color.
- **setFont(Font font):** is used to set the graphics current font to the specified font.

Example: GraphicsDemo.java

```
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);
}
}
```

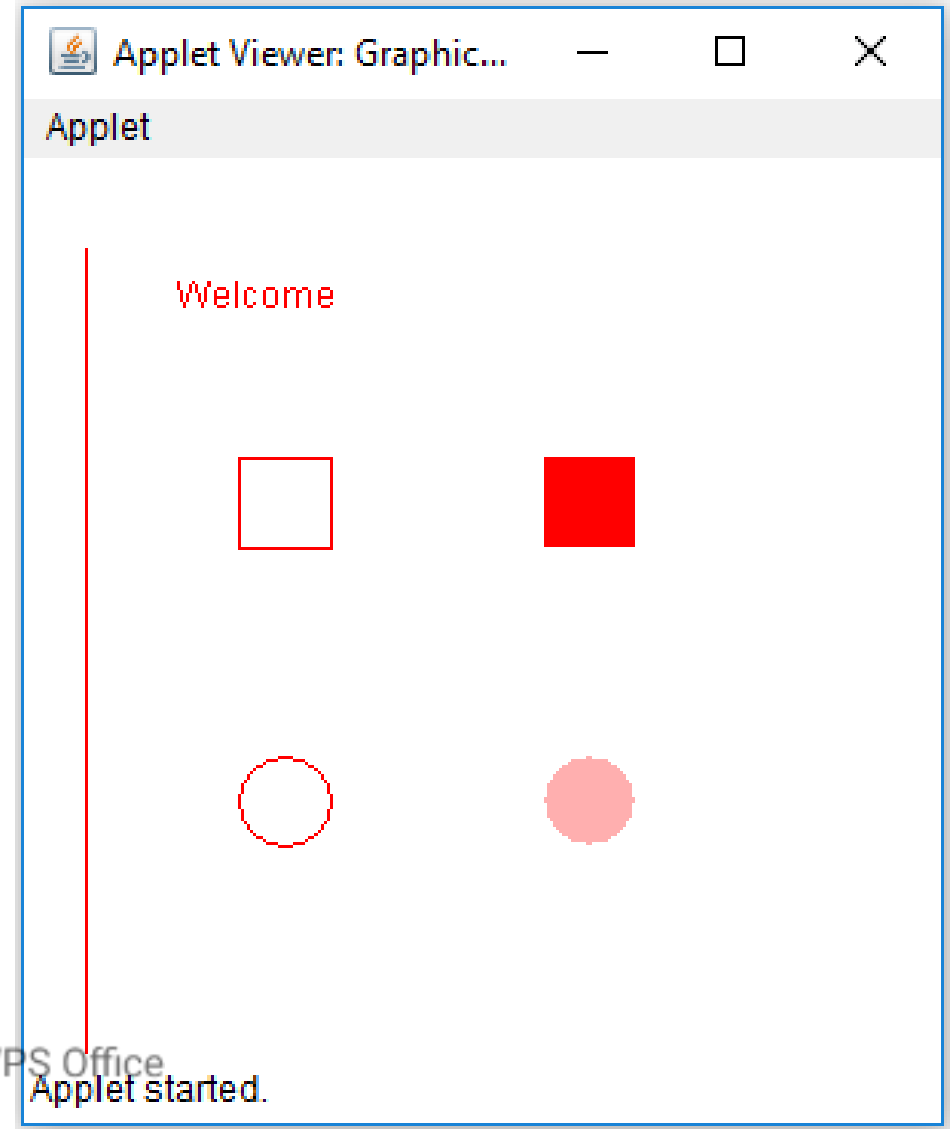
GraphicsDemo.html

```
<html>
<body>
<applet code="GraphicsDemo.class" width="300" height="300">
</applet>
</body>
</html>
```

Execution:

D:\> javac GraphicsDemo.java

D:\> appletviewer GraphicsDemo.html



Components of Applets

- The components of **AWT** are the components of **Applet**,i.e we can use AWT components (Button, TextField,Checkbox, TextArea,Choice & etc.…) in applet.

- As we perform **event handling** in AWT or Swing, we can perform it in applet also.

- Let's see the simple example of components and event handling in applet that prints a message by click on the button.

JApplet Class

- As we prefer Swing to AWT.
- Now we can use JApplet that can have all the controls of swing.
- The JApplet class extends the Applet class.
- The components of **swing** are the components of **JApplet**,i.e we can use swing components (JButton, JTextField,JCheckBox, JTextArea,JList & etc....) in JApplet.

Thank You