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TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS

CET1042B: Object Oriented Programming with C++ and Java

SCHOOL OF COMPUTER ENGINEERING AND TECHNOLOGY

**S. Y. B. TECH. COMPUTER SCIENCE AND ENGINEERING
(CYBERSECURITY AND FORENSICS)**

Assignment 9

Develop an applet that displays a simple message in centre of the screen

Getting Introduced with Java Applets

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.

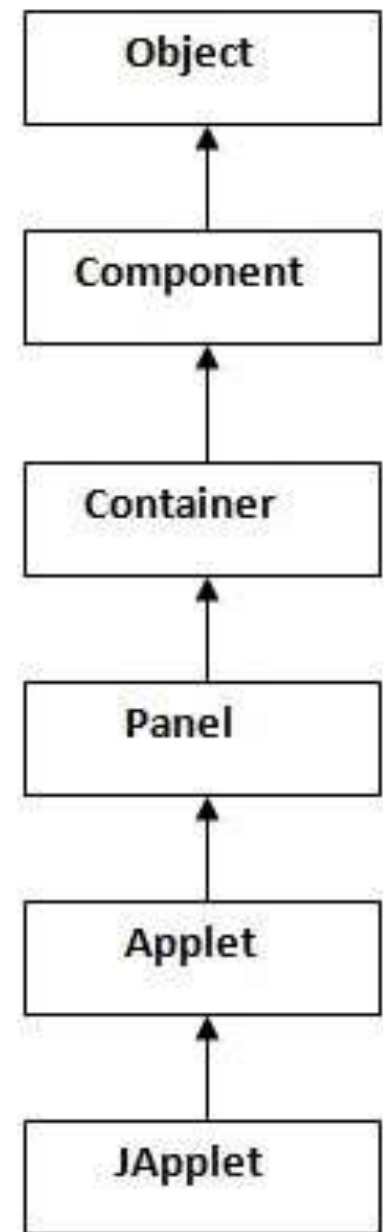
Advantage of Applet

- 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.

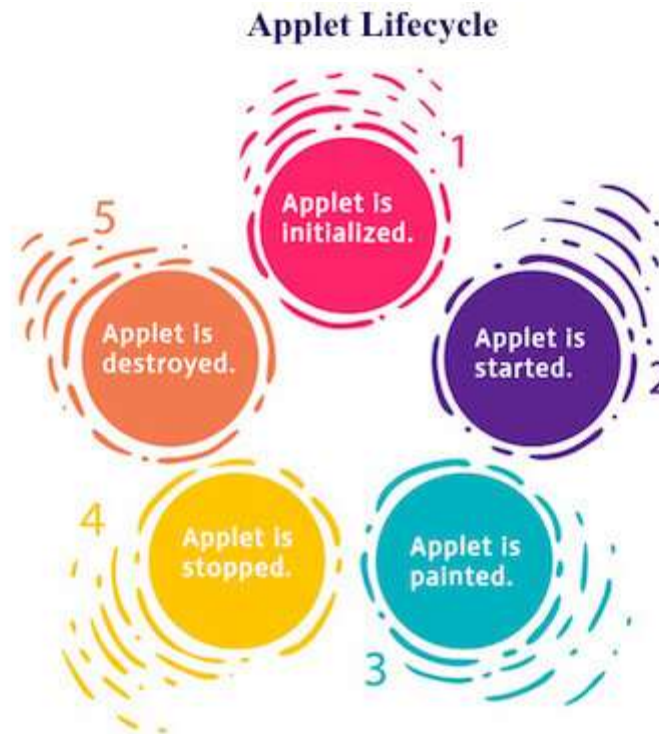
Hierarchy of Applet

- As displayed in the above diagram, Applet class extends Panel.
- Panel class extends Container which is the subclass of Component.



Lifecycle of Java Applet

1. Applet is initialized.
2. Applet is started.
3. Applet is painted.
4. Applet is stopped.
5. Applet is destroyed.



Lifecycle methods for Applet

- The java.applet.Applet class provides 4 life cycle methods and
- java.awt.Component class provides 1 life cycle methods for an applet.

java.applet.Applet class

- For creating any applet java.applet.Applet class must be inherited. It provides 4 life cycle methods of applet.
 1. **public void init():** is used to initialize the Applet. It is invoked only once.
 2. **public void start():** is invoked after the init() method or browser is maximized. It is used to start the Applet.
 3. **public void stop():** is used to stop the Applet. It is invoked when Applet is stop or browser is minimized.
 4. **public void destroy():** is used to destroy the Applet. It is invoked only once.

Lifecycle methods for Applet

java.awt.Component class

- The Component class provides 1 life cycle method of applet.
 1. **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.
- Java Plug-in software is responsible to manage the life cycle of an applet

How to run an Applet?

There are two ways to run an applet

1. By html file.
2. By appletViewer tool (for testing purpose).

Simple example of Applet by html file:

- To execute the applet by html file, create an applet and compile it.
- After that create an html file and place the applet code in html file.
- Then click the html file.

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

myapplet.html

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

Note: class must be public because its object is created by Java Plugin software that resides on the browser.

Simple example of Applet by appletviewer tool

- To execute the applet by appletviewer tool, create an applet that contains applet tag in comment and compile it.
- After that run it by: appletviewer First.java.
- Now Html file is not required but it is for testing purpose only.
- **A function named**
 - g.drawString () which is a method of Graphics class, here g is an object of Graphics class.
 - drawString () is taking three parameters string to display and x, y coordinates.

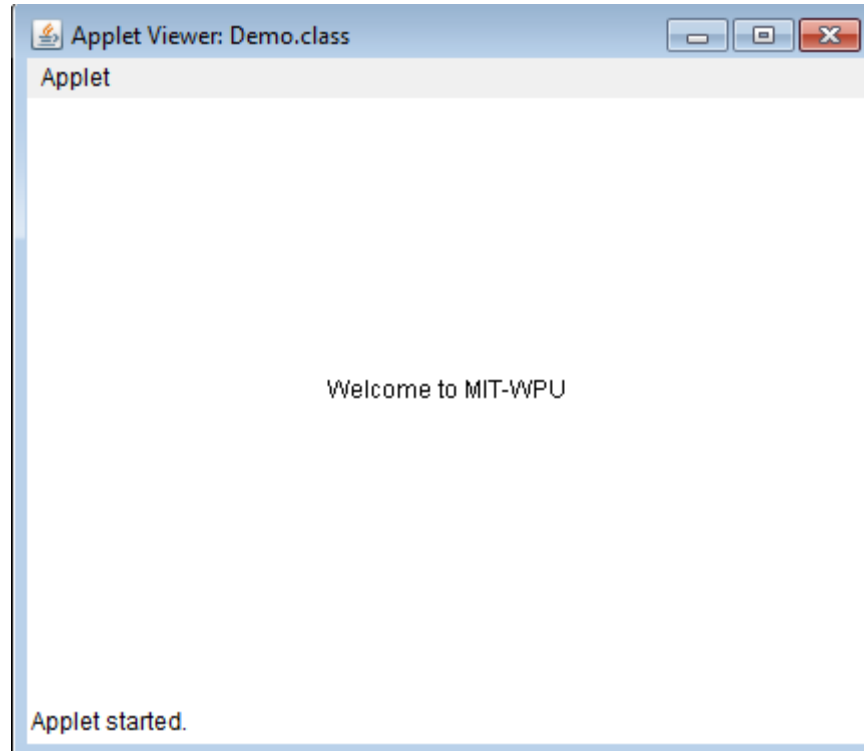
To execute the applet by appletviewer tool, write in command prompt:

c:\>javac Demo.java

c:\>appletviewer Demo.java

```
/* Develop an applet that displays a simple message( information ) */  
//Demo.java  
import java.applet.Applet;  
import java.awt.Graphics;  
public class Demo extends Applet{  
  
    public void paint(Graphics g){  
        g.drawString("Welcome to MIT WPU",150,150);  
    }  
}  
/*  
<applet code="Demo.class" width="300" height="300">  
</applet>  
*/
```

Output



FAQs

- What is an Applet ?
- Explain the life cycle of an Applet.
- What happens when an applet is loaded ?
- What is the difference between an Applet and a Java Application ?
- What are the restrictions imposed on Java applets ?
- What are untrusted applets ?

Thank You!!