Experiment No. 12

Aim: Develop an application to demonstrate Java Applet.

Problem Statement:

1. Develop application for Smiley using Java Applet.
2. Write a Program to demonstrate Event Handling in Applet.

Theory:

Applet:

An applet is a Java program that can be embedded into a web page. It runs inside the web browser and works at client side. An applet is embedded in an HTML page using the APPLET or OBJECT tag and hosted on a web server. Applets are used to make the web site more dynamic and entertaining.

Important points:

1. All applets are sub-classes (either directly or indirectly) of *java.applet.Applet* class.
2. Applets are not stand-alone programs. Instead, they run within either a web browser or an applet viewer. JDK provides a standard applet viewer tool called applet viewer.
3. In general, execution of an applet does not begin at main() method.
4. Output of an applet window is not performed by *System.out.println()*. Rather it is handled with various AWT methods, such as *drawString()*.

Life cycle of an applet:

- Lifecycle of Java Applet is as follows:
    - Applet is initialized.
    - Applet is started.
    - Applet is painted.
    - Applet is stopped.
    - Applet is destroyed.
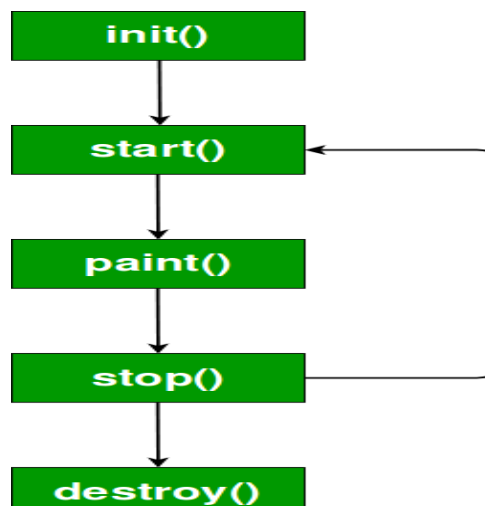
- **5 life cycle methods-**
    - init( )
    - start( )
    - paint( )
    - stop( )
    - destroy( )
- **For an applet-**
    - The **java.applet.Applet class** provides **4** life cycle methods.
    - The **java.awt.Component class** provides **1** life cycle method.

1. **init( ) :**

   The **init( )** method is the first method to be called. This is where you should initialize variables. This method is called **only once** during the run time of your applet.

2. **start( ) :**

   The **start( )** method is called after **init( )**. It is also called to restart an applet after it has been stopped. **start( )** is called each time an applet's HTML document is displayed onscreen. So, if a user leaves a web page and comes back, the applet resumes execution at **start( )**.

3. **paint( ) :**

   Provided by java.awt.Component class. It is used as public void paint(Graphics g). It is used to paint the Applet. It provides Graphics class object that can be used for drawing oval, rectangle, arc etc.

4. **stop( ) :**

   Provided by java.applet.Applet class. It is used as public void stop(). It is used to stop the Applet. It is invoked when Applet is stop or browser is minimized. The **stop( )** method is called when a web browser leaves the HTML document containing the applet.

5. **destroy():**

   Provided by java.applet.Applet class. Method used as public void destroy(). It is used to destroy the Applet. It is invoked only once. The destroy ( ) method is called when applet needs to be removed completely from memory. stop ( ) method is always called before destroy( ).

Ways to run an applet

- There are three ways to run an applet
    - By html file.
    - By appletViewer tool.
    - By appletviewer with java source file.

Conclusion:

   Students successfully studied and developed applet programs.