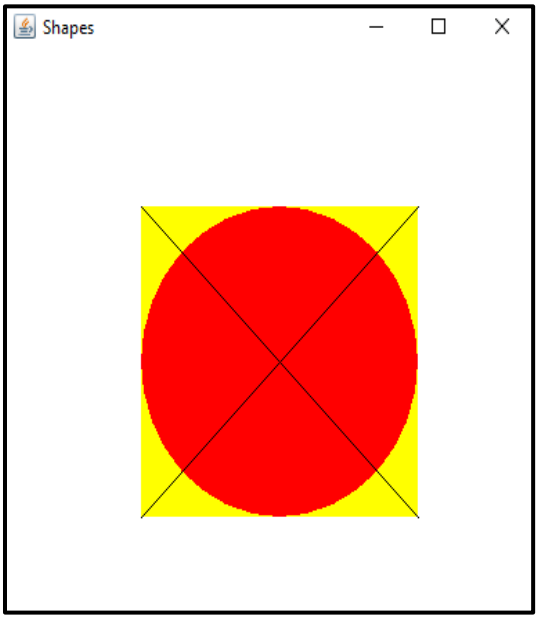
1.Write a Program in Java to Display Messages in Various Fonts in a Frame.

```
import java.awt.*;
import javax.swing.*;

class panel extends JPanel
{
   public void paintComponent(Graphics g)
   {
            int j = 0;
            String s[] =
GraphicsEnvironment.getLocalGraphicsEnvironment().getAvailableFontFamilyNames();
            g.setColor(Color.black);
            for(int i = 0; j<s.length; i++) {
                     Font f = new Font(s[i], Font.PLAIN,18);
                     g.setFont(f);
                     g.drawString("Hello",10,j);
                     j = j + 10;
            }
   }
}

class frame extends JFrame
{
   public frame()
   {
            setSize(300,500);
            setTitle("Font Demo");
            panel P = new panel();
            getContentPane().add(P);
   }
}

public class Practical1
{
   public static void main(String args[])
   {
            frame F = new frame();
            F.show();
   }
}
```

2.Write a Program in Java to Draw Various Geometric Shapes like Circle, Line, Rectangle etc.

```
import java.awt.*;

public class DrawShapes extends Component
{
   public static void main(String args[])
   {
          Frame F = new Frame();
          F.setSize(500,500);
          F.setLocation(100,100);
          F.setTitle("Shapes");
          F.add(new DrawShapes());
          F.setVisible(true);
   }

   public void paint(Graphics g)
   {
          g.setColor(Color.YELLOW);
          g.fillRect(100,100,200,200);
          g.setColor(Color.RED);
          g.fillOval(100,100,200,200);
          g.setColor(Color.BLACK);
          g.drawLine(100,100,300,300);
          g.drawLine(300,100,100,300);
   }
}
```

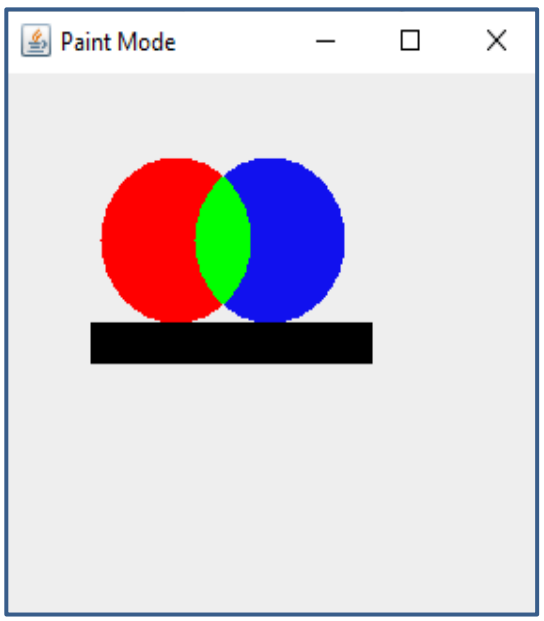
Output :



3.Write a Program in Java to Demonstrate Paintmode.

```
import javax.swing.*;
import java.awt.*;

class panel extends JPanel
{
   public void paintComponent(Graphics g)
   {
            g.setColor(Color.red);
            g.fillOval(50,40,80,80);
            g.setXORMode(Color.green);
            g.fillOval(100,40,80,80);
            g.setPaintMode();
            g.setColor(Color.black);
            g.fillRect(45,120,150,20);
   }
}

class frame extends JFrame
{
   public frame()
   {
            setSize(500,600);
            setTitle("Paint Mode");
            panel p=new panel();
            getContentPane().add(p);
   }
}
public class Practical3
{
   public static void main(String args[])
   {
            frame F = new frame();
            F.show();
   }
}
```

Output :

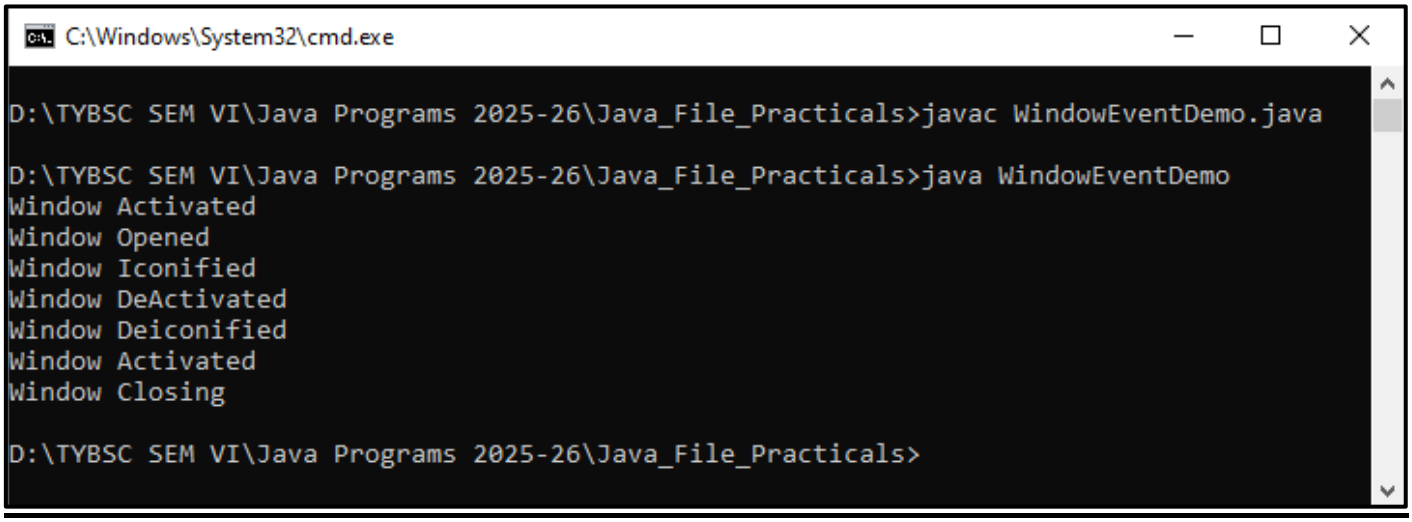


4.Write a Program in Java to Demonstrate Window Events.

```
import javax.swing.*;
import java.awt.event.*;

public class WindowEventDemo
{
   JFrame F;

   public WindowEventDemo()
   {
         F = new JFrame();

         F.addWindowListener(new WindowListener()
         {
               public void windowActivated(WindowEvent we1)
               {
                     System.out.println("Window Activated");
               }
               public void windowDeactivated(WindowEvent we2)
               {
                     System.out.println("Window DeActivated");
               }
               public void windowOpened(WindowEvent we3)
               {
                     System.out.println("Window Opened");
               }
               public void windowClosing(WindowEvent we4)
               {
                     System.out.println("Window Closing");
               }
               public void windowClosed(WindowEvent we5)
               {
                     System.out.println("Window Closed");
               }
               public void windowIconified(WindowEvent we6)
               {
                     System.out.println("Window Iconified");
               }
```

```
        public void windowDeiconified(WindowEvent we7)
                {
                        System.out.println("Window Deiconified");
                }

            });

            F.setSize(500,500);
            F.setLocation(100,100);
            F.setTitle("WindowEvent");
            F.setVisible(true);
            F.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);


    }

    public static void main(String args[])
    {
            new WindowEventDemo();
    }
}
```

Output :

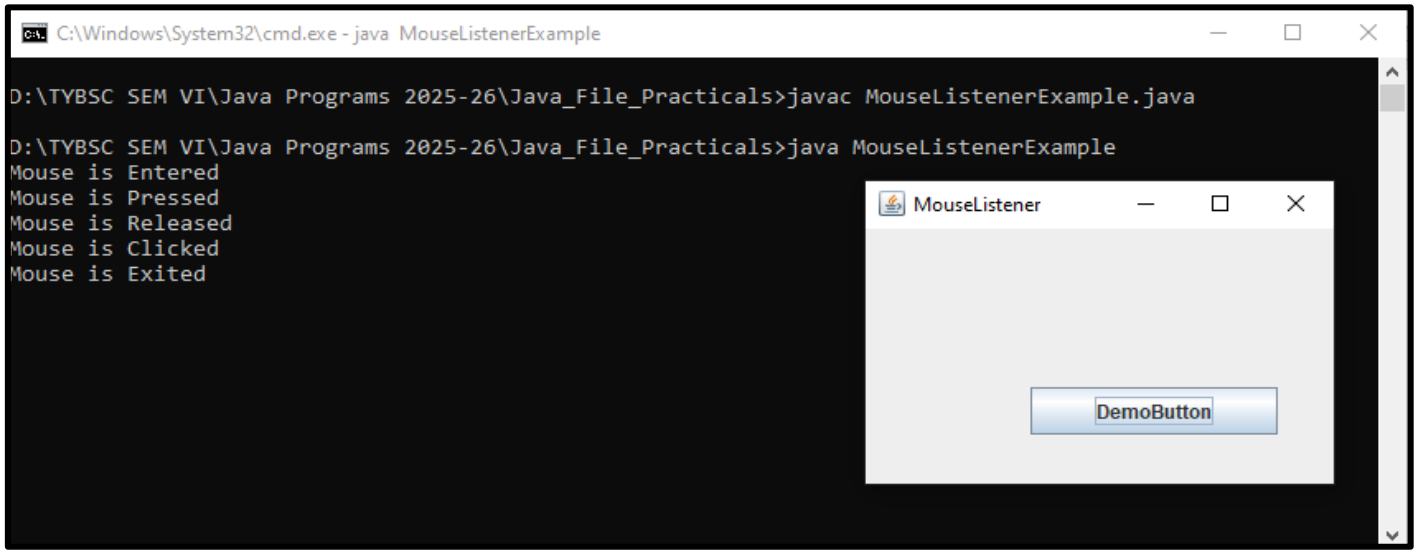


5.Write a Program in Java to Demonstrate Mouse Events.

```
import java.awt.*;
import javax.swing.*;
import java.awt.event.*;

public class MouseListenerExample
{
   JFrame F;
   JPanel P;
   JButton btnDemo;


   public MouseListenerExample()
   {
         F = new JFrame();
         P = new JPanel();
         btnDemo = new JButton("DemoButton");

         F.setSize(300,200);
         F.setLocation(100,100);
         F.setTitle("MouseListener");
         F.setVisible(true);
         F.add(P);
         P.setLayout(null);

         btnDemo.setBounds(100,100,150,30);
         P.add(btnDemo);


         btnDemo.addMouseListener(new MouseListener()
         {
               public void mouseClicked(MouseEvent e1)
               {
                     System.out.println("Mouse is Clicked");
               }

               public void mouseExited(MouseEvent e2)
               {
                     System.out.println("Mouse is Exited");
               }
```

```
            public void mouseEntered(MouseEvent e3)
            {
                System.out.println("Mouse is Entered");
            }

            public void mousePressed(MouseEvent e4)
            {
                System.out.println("Mouse is Pressed");
            }

            public void mouseReleased(MouseEvent e5)
            {
                System.out.println("Mouse is Released");
            }

        });


    }

    public static void main(String args[])
    {
        new MouseListenerExample();
    }
}
```

Output :

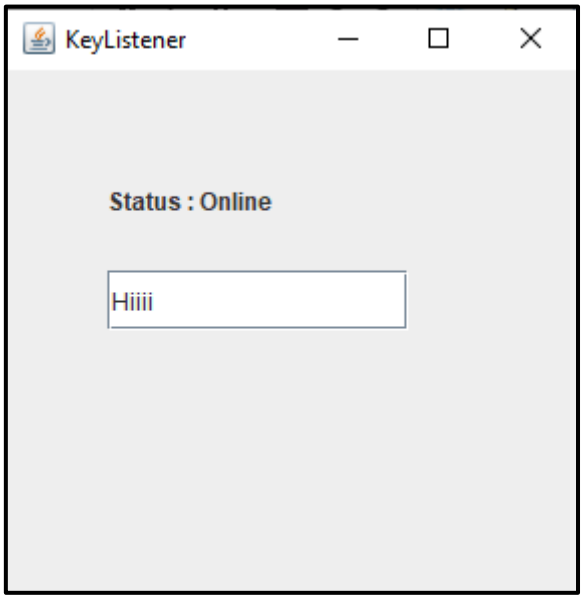


6.Write a Program in Java to Demonstrate Keyboard Events.(keyPressed, keyReleased, keyTyped).

```
import java.awt.*;
import javax.swing.*;
import java.awt.event.KeyListener;
import java.awt.event.KeyEvent;


public class KeyListenerExample
{
   JFrame F;
   JPanel P;
   JLabel lblMessage;
   JTextField txtMessage;

   public KeyListenerExample()
   {
         F = new JFrame();
         P = new JPanel();

         lblMessage = new JLabel("Status : ");
         txtMessage = new JTextField();

         F.setSize(300,300);
         F.setLocation(100,100);
         F.setTitle("KeyListener");
         F.setVisible(true);
         F.add(P);
         P.setLayout(null);

         lblMessage.setBounds(50,50,150,30);
         P.add(lblMessage);

         txtMessage.setBounds(50,100,150,30);
         P.add(txtMessage);

         txtMessage.addKeyListener(new KeyListener()
         {
```

```
        public void keyTyped(KeyEvent ke1)
                {
                        lblMessage.setText("Status : Typing...");
                }

                public void keyPressed(KeyEvent ke2)
                {
                        lblMessage.setText("Status : Online");
                }

                public void keyReleased(KeyEvent ke3)
                {
                        lblMessage.setText("Status : Online");

                }
            });

    }

    public static void main(String args[])
    {
            new KeyListenerExample();
    }
}
```

Output :

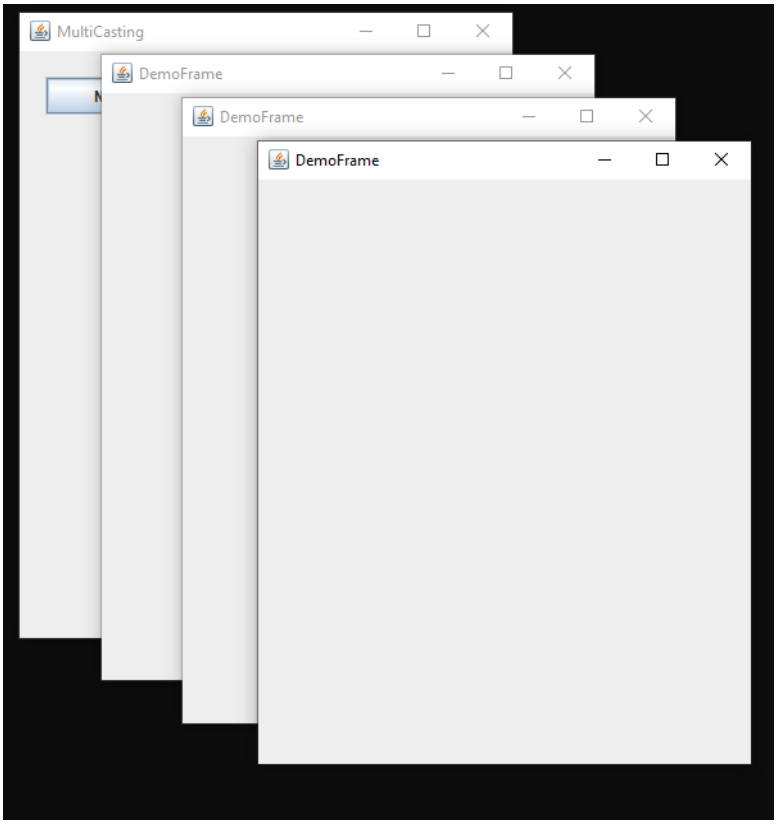


7.Write a Program in Java to Demonstrate Multicasting.

```
import java.awt.*;
import javax.swing.*;
import java.awt.event.*;

public class Practical7
{
   JFrame F;
   JPanel P;
   JButton btnNew, btnClose;

   public Practical7()
   {
         F= new JFrame();
         P = new JPanel();
         btnNew = new JButton("New");
         btnClose = new JButton("Close All");

         F.setSize(400,500);
         F.setLocation(100,100);
         F.setTitle("MultiCasting");
         F.setVisible(true);

         P.setLayout(null);
         F.add(P);

         btnNew.setBounds(20,20,100,30);
         P.add(btnNew);

         btnClose.setBounds(130,20,100,30);
         P.add(btnClose);

         btnNew.addActionListener(new ActionListener()
         {
               public void actionPerformed(ActionEvent e1)
               {
                     JFrame F = new JFrame();
                     F.setSize(400,500);
                     F.setLocation(110,110);
                     F.setTitle("DemoFrame");
```

```
                F.show();

            }
        });

        btnClose.addActionListener(new ActionListener()
        {
            public void actionPerformed(ActionEvent e2)
            {
                System.exit(0);
            }
        });
    }
    public static void main(String args[])
    {
        new Practical7();
    }
}
```

Output :

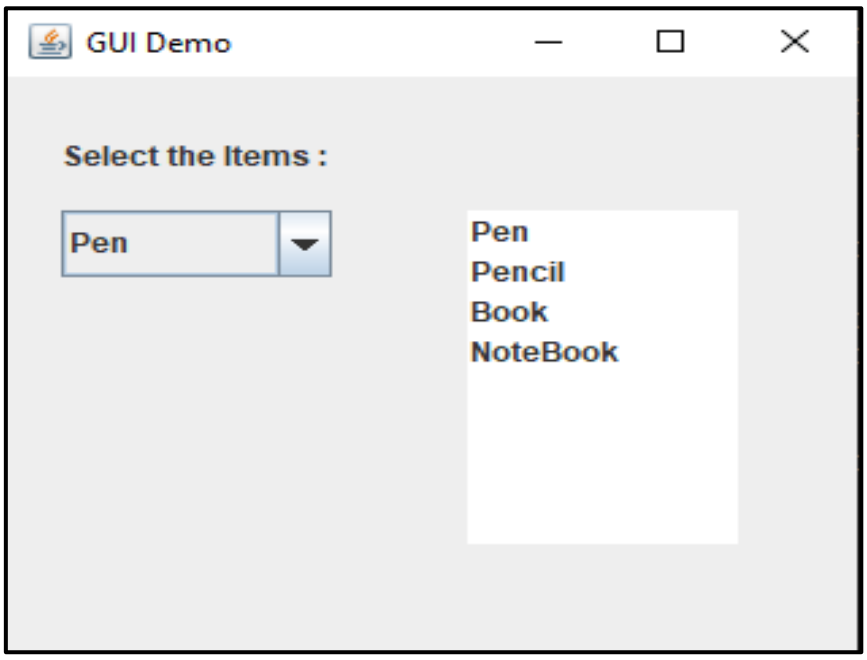


8.Write a Program in Java to Demonstrate User Interface Component List Boxes and Combo Box.

```
import javax.swing.*;

public class Practical8
{
   JFrame F;
   JPanel P;
   JLabel lblItem;
   JComboBox cmbItem;
   JList lstItem;
   String[] Item = {"Pen", "Pencil", "Book", "NoteBook"};


   public Practical8()
   {
          F = new JFrame();
          P = new JPanel();
          lblItem = new JLabel("Select the Items : ");
          cmbItem = new JComboBox();
          lstItem = new JList(Item);


          F.setSize(330,300);
          F.setLocation(100,100);
          F.setTitle("GUI Demo");
          F.setVisible(true);

          P.setLayout(null);
          F.add(P);


          lblItem.setBounds(20,20,150,30);
          P.add(lblItem);

          cmbItem.setBounds(20,60,100,30);
          P.add(cmbItem);

           lstItem.setBounds(170,60,100,150);
                P.add(lstItem);
```

```
            cmbItem.addItem("Pen");
            cmbItem.addItem("Pencil");
            cmbItem.addItem("Book");
            cmbItem.addItem("NoteBook");


    }
    public static void main(String args[])
    {
            new Practical8();
    }
}
```

Output :

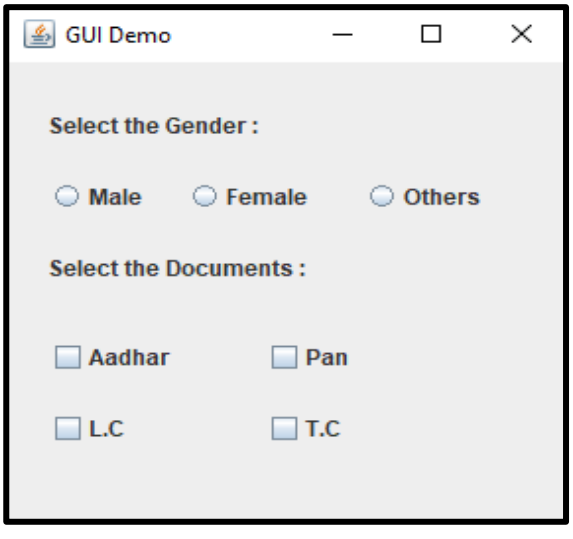


9.Write a Program in Java to Demonstrate User Interface Component Radio Button and Check Box.

```
import javax.swing.*;

public class Practical9
{
   JFrame F;
   JPanel P;
   JLabel lblGender;
   JLabel lblDocs;
   JLabel lblItem;
   JRadioButton rbMale, rbFemale, rbOthers;
   ButtonGroup bg;
   JCheckBox chkAadhar, chkPan, chkLC, chkTC;

   public Practical9()
   {
         F = new JFrame();
         P = new JPanel();
         bg = new ButtonGroup();

         lblGender = new JLabel("Select the Gender : ");
         rbMale = new JRadioButton("Male");
         rbFemale = new JRadioButton("Female");
         rbOthers = new JRadioButton("Others");

         lblDocs = new JLabel("Select the Documents : ");
         chkAadhar = new JCheckBox("Aadhar");
         chkPan = new JCheckBox("Pan");
         chkLC = new JCheckBox("L.C");
         chkTC = new JCheckBox("T.C");

         F.setSize(300,300);
         F.setLocation(100,100);
         F.setTitle("GUI Demo");
         F.setVisible(true);

         P.setLayout(null);
         F.add(P);
```

```
        lblGender.setBounds(20,20,150,30);
        P.add(lblGender);

        rbMale.setBounds(20,60,60,30);
        P.add(rbMale);
        rbFemale.setBounds(90,60,80,30);
        P.add(rbFemale);
        rbOthers.setBounds(180,60,100,30);
        P.add(rbOthers);

        bg.add(rbMale);
        bg.add(rbFemale);
        bg.add(rbOthers);

        lblDocs.setBounds(20,100,150,30);
        P.add(lblDocs);

        chkAadhar.setBounds(20,150,100,30);
        P.add(chkAadhar);
        chkPan.setBounds(130,150,100,30);
        P.add(chkPan);
        chkLC.setBounds(20,190,100,30);
        P.add(chkLC);
        chkTC.setBounds(130,190,100,30);
        P.add(chkTC);

    }

    public static void main(String args[])
    {
        new Practical9();
    }
}
```

Output :

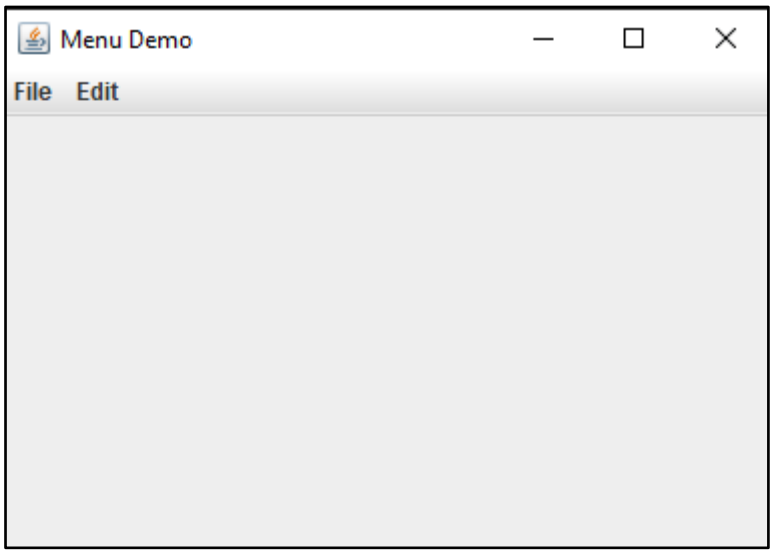


10. Write a Program in Java to Demonstrate Menus as Interface Component.

```
import javax.swing.*;
import java.awt.event.*;

public class MenuDemo
{
JFrame F;
JMenuBar mb;
JMenu mnuFile,mnuEdit;
JMenuItem mnuiNew,mnuiOpen,mnuiSave;
JMenuItem mnuiCut,mnuiCopy,mnuiPaste;

public MenuDemo()
{
F = new JFrame("Menu Demo");
F.setSize(400,400);
F.setLocation(100,100);
F.setVisible(true);
        F.setLayout(null);

        mb = new JMenuBar();
        F.setJMenuBar(mb);

mnuFile = new JMenu("File");
mnuEdit = new JMenu("Edit");

mnuiNew = new JMenuItem("New");
mnuiOpen = new JMenuItem("Open");
mnuiSave = new JMenuItem("Save");

mnuiCut = new JMenuItem("Cut");
mnuiCopy = new JMenuItem("Copy");
mnuiPaste = new JMenuItem("Paste");

mb.add(mnuFile);
mb.add(mnuEdit);
```

```
mnuFile.add(mnuiNew);
mnuFile.add(mnuiOpen);
mnuFile.add(mnuiSave);
mnuEdit.add(mnuiCut);
mnuEdit.add(mnuiCopy);
mnuEdit.add(mnuiPaste);
}
        public static void main(String args[])
        {
        new MenuDemo();
        }
}
```

Output :



11. Write an Applet to Display Human Face.

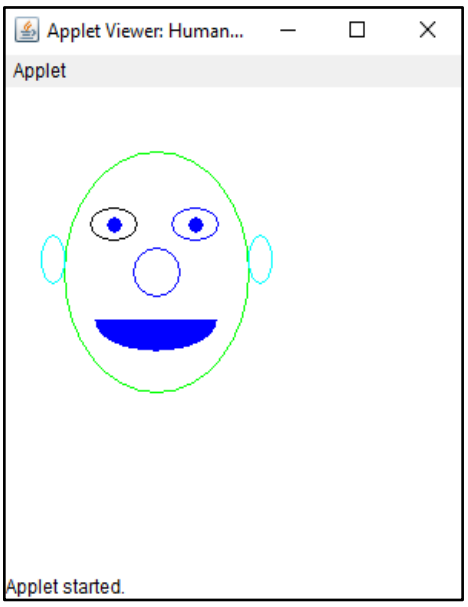
- **HumanFace.html**

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

- **HumanFace.java**

```
import java.awt.*;
import javax.swing.*;
import java.applet.*;

public class HumanFace extends Applet
{
   public void paint(Graphics g)
   {
            g.setColor(Color.green);
            g.drawOval(40,40,120,150);
            g.setColor(Color.black);
            g.drawOval(57,75,30,20);
            g.setColor(Color.blue);
            g.drawOval(110,75,30,20);
            g.fillOval(68,81,10,10);
            g.fillOval(121,81,10,10);
            g.drawOval(85,100,30,30);

            g.fillArc(60,125,80,40,180,180);
            g.setColor(Color.cyan);
            g.drawOval(25,92,15,30);
            g.drawOval(160,92,15,30);

   }
}
```

Output :



12. Write a Program in Java to Demonstrate Java Applet with Parameter.

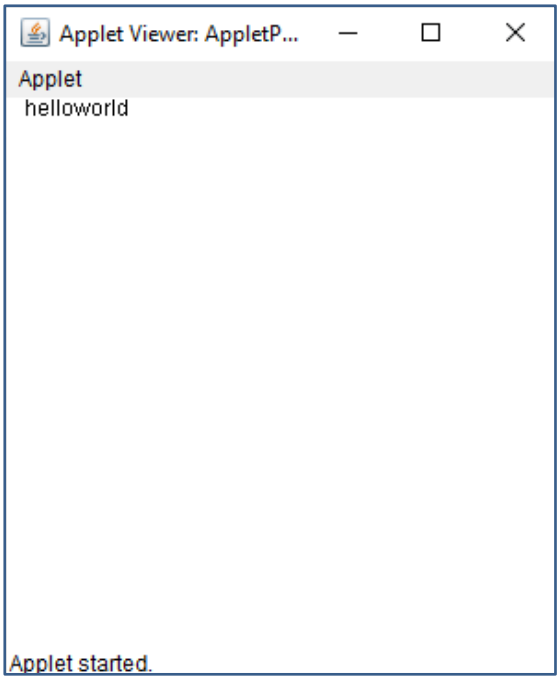
- **AppletParamDemo.html**

```
<html>
<body>
<applet code="AppletParamDemo.class" width="300" height="300">
<param name="aa" value="world">
</applet>
</body>
</html>
```

- **AppletParamDemo.java**

```
import javax.swing.*;
import java.awt.*;
import java.applet.*;

public class AppletParamDemo extends JApplet
{
   public void paint(Graphics g)
   {
         String s=getParameter("aa");
         if(s==null)
         s="java";
         g.drawString("hello"+s,10,10);
   }
}
```

Output :



13. Write a Program in Java to Demonstrate Collection Interfaces. (List and Set).

```
import java.io.*;
import java.util.*;

public class CollectionFramework
{
   public static void main(String args[])
   {
            Collection<String>list=new LinkedList<String>();
            list.add("one");
            list.add("two");
            list.add("three");
            System.out.println("The list is:"+list);
            list.add("Last");
            list.add("Element");
            System.out.println("The new List is:"+list);
   }
}
```

Output :

```
The list is: [one ,two, three]
The new List is: [one, two, three, Last, Element]
```