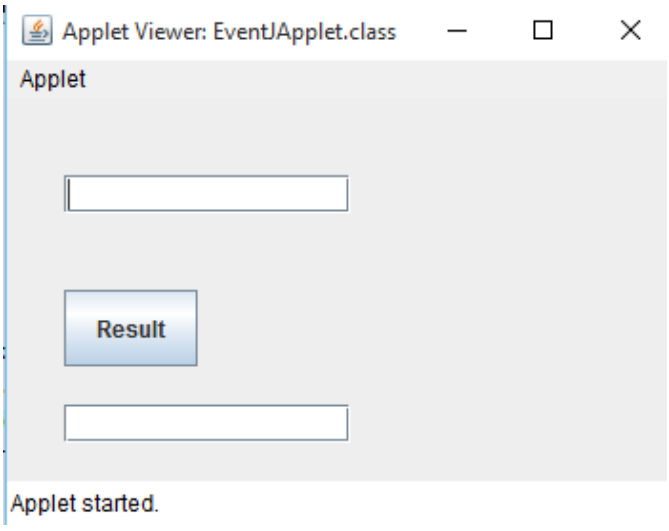
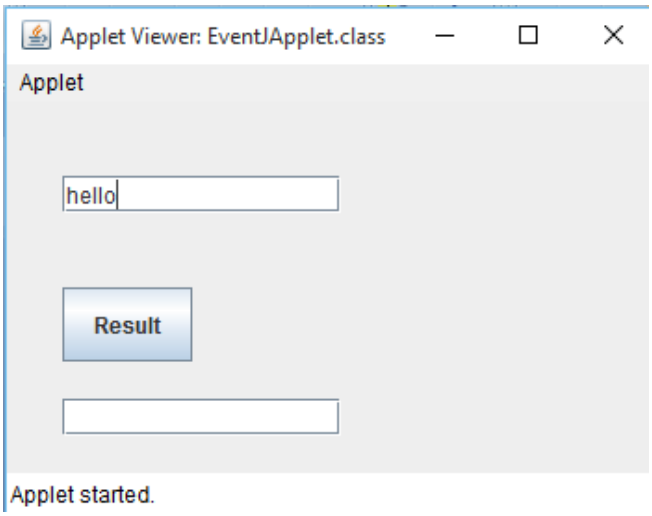
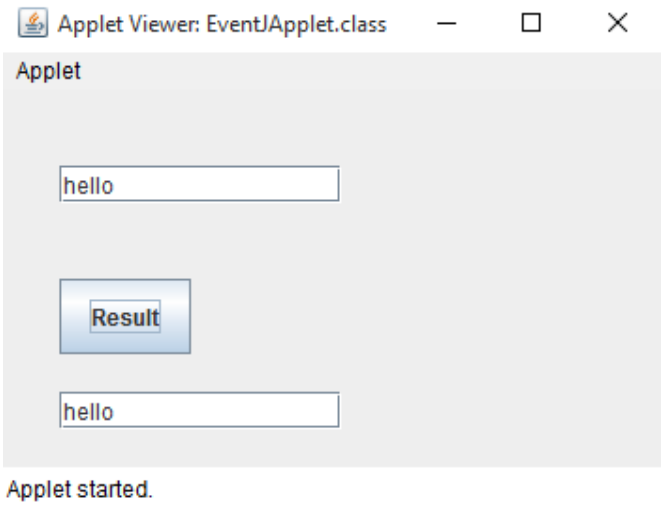
❖ **WAP to demonstrate event handling in JApplet.**

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


public class EventJApplet extends JApplet implements ActionListener {
    public JButton btn;
    public JLabel label1;
    public JLabel label2;
    public JTextField tf1;
    public JTextField tf2;


    @Override
    public void init() {
        tf1 = new JTextField();
        tf1.setBounds(30,40,150,20);


        tf2 = new JTextField();
        tf2.setBounds(30,160,150,20);


        btn = new JButton("Result");
        btn.setBounds(30,100,70,40);
```

```
        add(tf1);
        add(btn);
        add(tf2);
        btn.addActionListener(this);

        setLayout(null);
    }

    @Override
    public void actionPerformed(ActionEvent e) {
        tf2.setText(tf1.getText());
    }
}
```




Applet Viewer: EventJApplet.class
Applet
hello
Result
Applet started.


Applet Viewer: EventJApplet.class
Applet
hello
Result
hello
Applet started.

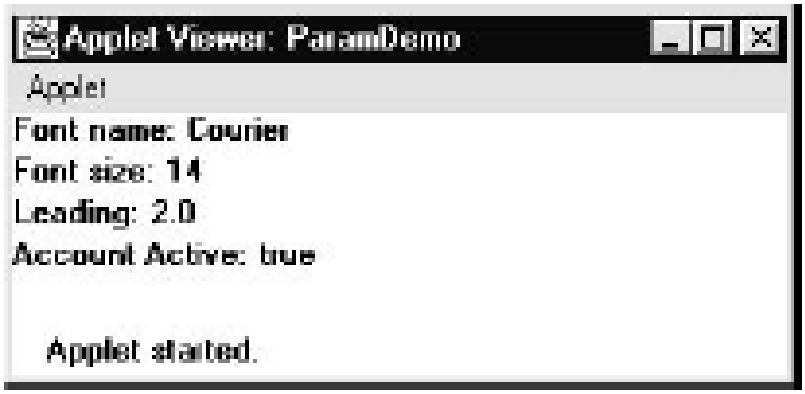
❖ **WAP to demonstrate passing parameters to an applet.**

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

/*
<applet code="ParamDemo" width=300 height=80>
<param name=fontName value=Courier>
<param name=fontSize value=14>
<param name=leading value=2>
<param name=accountEnabled value=true>
</applet>
*/

public class ParamDemo extends Applet{
   String fontName;
   int fontSize;
   float leading;
   boolean active;

   // Initialize the string to be displayed.
```

```
@Override
public void start() {
    String param;
    fontName = getParameter("fontName");
    if(fontName == null)
        fontName = "Not Found";
    param = getParameter("fontSize");

    try {
        if(param != null) // if not found
            fontSize = Integer.parseInt(param);
        else
            fontSize = 0;
    }
    catch(NumberFormatException e) {
        fontSize = -1;
    }

    param = getParameter("leading");
    try {
        if(param != null) // if not found
```

```
            leading = Float.parseFloat(param);
        else
            leading = 0;
    }
    catch(NumberFormatException e) {
        leading = -1;
    }

    param = getParameter("accountEnabled");
    if(param != null)
        active = Boolean.parseBoolean(param);
}

// Display parameters.
@Override
public void paint(Graphics g) {
    g.drawString("Font name: " + fontName, 0, 10);
    g.drawString("Font size: " + fontSize, 0, 26);
    g.drawString("Leading: " + leading, 0, 42);
    g.drawString("Account Active: " + active, 0, 58);
}
```

}


Applet Viewer: ParamDemo
Applet
Font name: Courier
Font size: 14
Leading: 2.0
Account Active: true
Applet started.

❖ **WAP to demonstrate handling HTTP GET requests.**

```
//index.jsp
<html>
    <head>
        <title> Testing GET </title>
    </head>
    <body>
        <form action = "testingget" method = "get">
            <label style = "color:green;"> <b> Testing GET: </b> </label>
<br/> <br/>
            First Name: <input type = "text" name = "firstName" size = 20>
<br/> </br>
            Last Name: <input type = "text" name = "surname" size = 20>
<br/> <br/>
            <input type = "submit" value = "Submit">
        </form>
    </body>
</html>


//TestingGet
import java.io.*;
```

```
import java.sql.*;
import javax.servlet.*;
import javax.servlet.http.*;

public class TestingGet extends HttpServlet {
    private Connection connection;
    private Statement statement;
    public void init(ServletConfig config) throws ServletException {
        try {
            connection = DriverManager.getConnection("jdbc:mysql://localhost:3306/testingget", "root", "");
            statement = connection.createStatement();
        }
        catch(Exception e) {
            e.printStackTrace();
            throw new UnavailableException(e.getMessage());
        }
    }

    protected void processRequest(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
```

```
PrintWriter out = response.getWriter();
try {
    String firstName = request.getParameter("firstName").toString();
    String surname = request.getParameter("surname").toString();
    try {
        statement = connection.createStatement
(ResultSet.TYPE_SCROLL_SENSITIVE, ResultSet.CONCUR_UPDATABLE);
        ResultSet uprs = statement.executeQuery("SELLECT * FROM
names");
        uprs.moveToInsertRow();
        uprs.updateString("firstname", firstName);
        uprs.updateString("lastname",surname);
        uprs.insertRow();
        uprs.beforeFirst();
    }
    catch(SQLException se) {
        se.printStackTrace();
    }

    try {
        statement = connection.createStatement();
```

```
                    ResultSet resultSet = statement.executeQuery( “SELECT * FROM
        names”);
                    out.println(“<html>”);
                    out.println(“<head>”);
                    out.println(“</head>”);
                    out.println(“<body>”);
                    out.println(“<p> Welcome ”+firstName+” “+surname+”</p>”);
                    out.println(“</body>”);
                    out.println(“</html>”);
                }
                catch(SQLException e) {
                    e.printStackTrace():
                }
        }
        finally {
                out.close();
        }
}

public void destroy() {
        try {
```

```
                statement.close();
                connection.close();
            }
            catch(SQLException e) {
                e.printStackTrace();
            }
        }
}
```

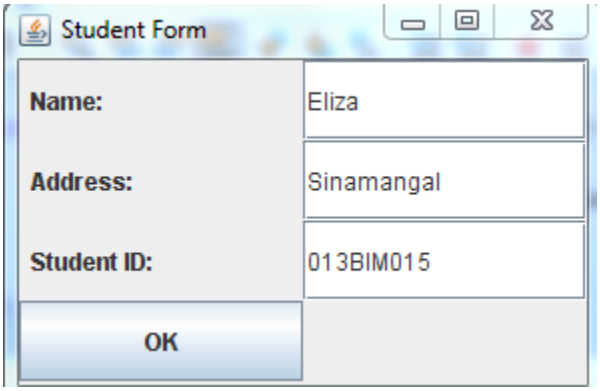
❖ **Write a GUI program that takes Student information as input and displays it.**

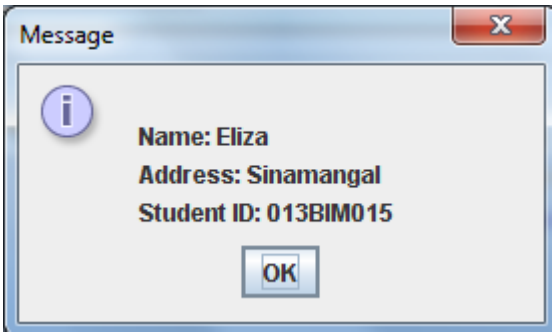
```
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JOptionPane;
import javax.swing.JTextField;
import javax.swing.JButton;
import java.awt.GridLayout;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;

public class Test extends JFrame{
   private JLabel name;
   private JLabel address;
   private JLabel std_id;
   private JTextField name_field;
   private JTextField address_field;
   private JTextField id_field;
   private JButton ok_btn;

   public Test() {
      super("Student Form");
      setLayout(new GridLayout(4,2));

      name = new JLabel("  Name: ");
      name_field = new JTextField(50);
      add(name);
      add(name_field);

      address = new JLabel("  Address: ");
```

```
        address_field = new JTextField(50);
        add(address);
        add(address_field);

        std_id = new JLabel("  Student ID: ");
        id_field = new JTextField(50);
        add(std_id);
        add(id_field);

        ok_btn = new JButton("OK");
        add(ok_btn);

        ButtonHandler handler = new ButtonHandler();
        ok_btn.addActionListener(handler);
    }

    private class ButtonHandler implements ActionListener {
        public void actionPerformed(ActionEvent event) {
            String display = String.format("\n Name: %s \n Address: %s \n Student ID: %s",
name_field.getText(), address_field.getText(),id_field.getText());
            JOptionPane.showMessageDialog(null, display);
        }
    }
}
package javaapplication1;

import javax.swing.JFrame;

public class Main {

    public static void main(String[] args) {
```

```
        Test obj = new Test();
        obj.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        obj.setSize(300, 200);
        obj.setVisible(true);
    }
}
```

Output:





❖ **WAP in JSP to take information from user and display it.**

index.jsp

```
<html>
   <head>

      <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
      <title>JSP Page</title>
   </head>
   <body>
      <center>
       <form name="form" method="Post" action="NewServlet">

         <table>
            <tr>
               <td colspan="2"> <b> Employee information </b> </td>
            </tr>
            <tr>
               <td> Employee Name </td>
               <td> <input type="textbox" name="Employee" value=""> </td>
            </tr>
            <tr>
               <td> Phone </td>
               <td><input type="textbox" name="Phone" value=""> </td>
            </tr>
         </table>
         <input type="submit" value="Submit">

      </form>
      </center>
   </body>
```

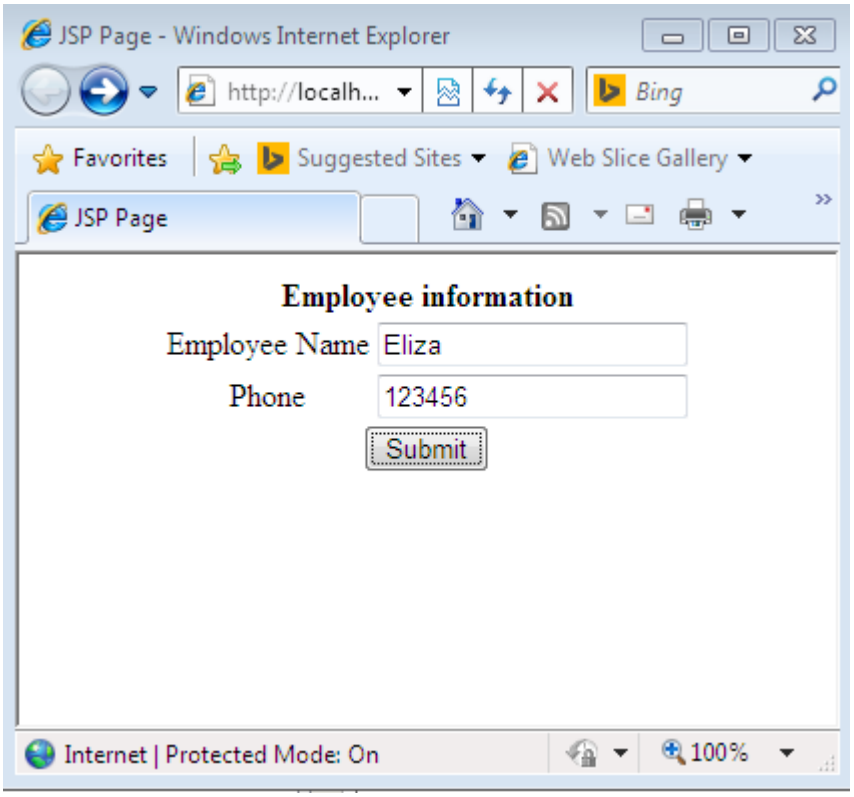
```
</html>
```

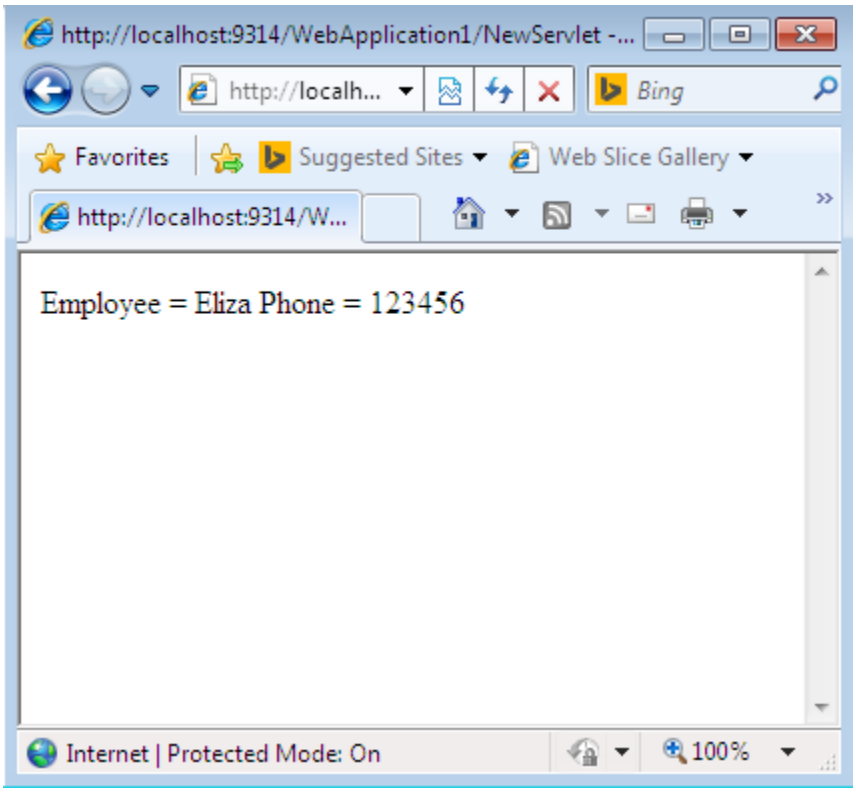
NewServlet.java

```
import java.io.IOException;
import java.io.PrintWriter;
import java.util.Enumeration;
import javax.servlet.GenericServlet;
import javax.servlet.ServletException;
import javax.servlet.ServletRequest;
import javax.servlet.ServletResponse;

public class NewServlet extends GenericServlet {

   @Override
   public String getServletInfo() {
      return "Short description";
   }// </editor-fold>

   @Override
   public void service(ServletRequest req, ServletResponse res) throws ServletException,
IOException {



      PrintWriter pw = res.getWriter();
      Enumeration e = req.getParameterNames();

      while(e.hasMoreElements()){
         String pname =(String)e.nextElement();
         pw.print(pname+" = ");

         String pvalue = req.getParameter(pname);
         pw.println(pvalue);
```

```
        }

        pw.close();
    }

}
```

Output:




http://localhost:9314/WebApplication1/NewServlet -...
http://localh...
Bing
Favorites
Suggested Sites
Web Slice Gallery
http://localhost:9314/W...
Employee = Eliza Phone = 123456
Internet | Protected Mode: On
100%

❖ **Write a GUI application programme to find sum, subtraction and multiplication of any two numbers.**

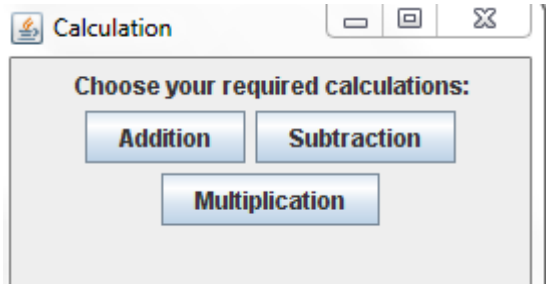
Source Code:

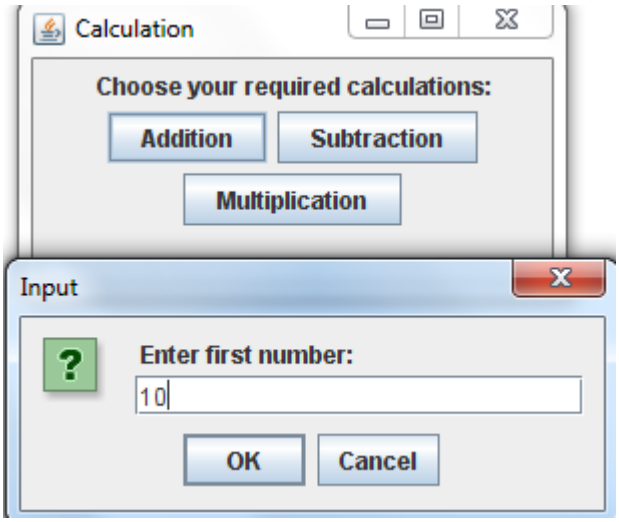
```
import javax.swing.JFrame;
import javax.swing.JButton;
import javax.swing.JTextField;
import javax.swing.JLabel;
import javax.swing.JOptionPane;
import java.awt.FlowLayout;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;


public class calculation extends JFrame {
   private JLabel heading;
   private String str1;
   private String str2;
   private JLabel number1;
   private JLabel number2;

   private JButton sum;
   private JButton sub;
   private JButton mul;

   private double n1, n2;

   public calculation() {
      super("Calculation");
      setLayout(new FlowLayout());
```

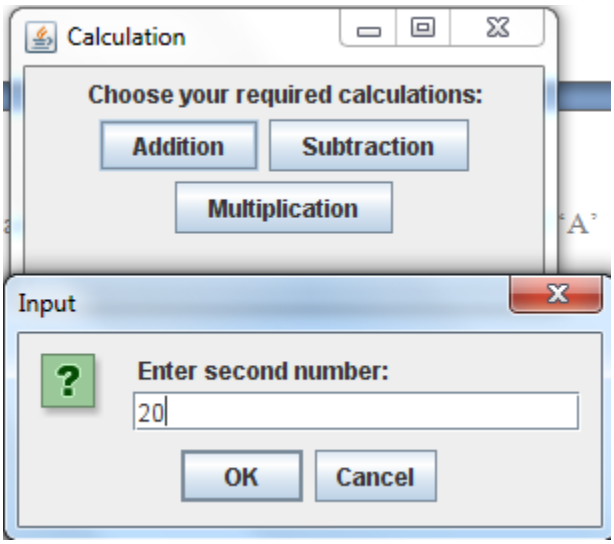
```
    heading = new JLabel(" Choose your required calculations:");
    add(heading);

    sum = new JButton("Addition");
    sub = new JButton("Subtraction");
    mul = new JButton("Multiplication");

    add(sum);
    add(sub);
    add(mul);

    ButtonHandler handler = new ButtonHandler();
    sum.addActionListener(handler);
    sub.addActionListener(handler);
    mul.addActionListener(handler);
}

private class ButtonHandler implements ActionListener {
    public void actionPerformed(ActionEvent event) {
        String command = event.getActionCommand();

        int i = 0;

        if(command=="Addition") {
            i = 1;
        }
        else if(command=="Subtraction") {
            i = 2;
        }
        else if(command=="Multiplication") {
            i = 3;
```

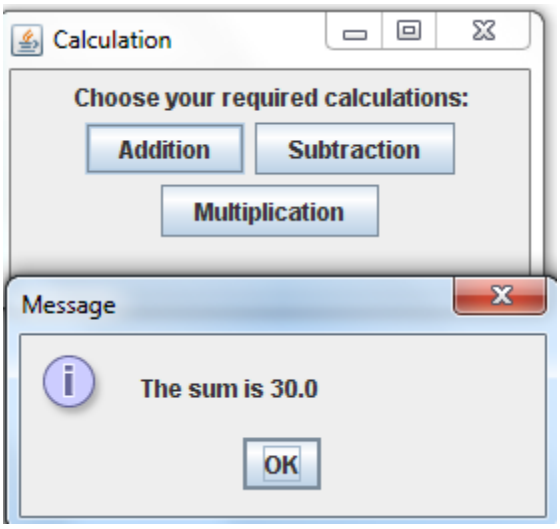
```
        }

        switch(i) {
           case 1 : str1 = JOptionPane.showInputDialog(" Enter first number:");
                    str2 = JOptionPane.showInputDialog(" Enter second number:");
                    n1 = Double.parseDouble(str1);
                    n2 = Double.parseDouble(str2);
                    JOptionPane.showMessageDialog(null, " The sum is "+String.valueOf(n1+n2));
                    break;

           case 2 : str1 = JOptionPane.showInputDialog(" Enter first number:");
                    str2 = JOptionPane.showInputDialog(" Enter second number:");
                    n1 = Double.parseDouble(str1);
                    n2 = Double.parseDouble(str2);
                    JOptionPane.showMessageDialog(null, " The difference is "+String.valueOf(n1-
n2));
                    break;

           case 3 : str1 = JOptionPane.showInputDialog(" Enter first number:");
                    str2 = JOptionPane.showInputDialog(" Enter second number:");
                    n1 = Double.parseDouble(str1);
                    n2 = Double.parseDouble(str2);
                    JOptionPane.showMessageDialog(null, " The product is
"+String.valueOf(n1*n2));
                    break;
        }
      }
   }
}
```

Output:


Calculation
Choose your required calculations:
Addition
Subtraction
Multiplication


Calculation
Choose your required calculations:
Addition
Subtraction
Multiplication
Input
Enter first number:
10
OK
Cancel


Calculation
Choose your required calculations:
Addition
Subtraction
Multiplication
Input
Enter second number:
20
OK
Cancel



#Chapter 2 and 3

1. **Java program for mouse events Clicked ,Entered ,Pressed and exited**

Codes :

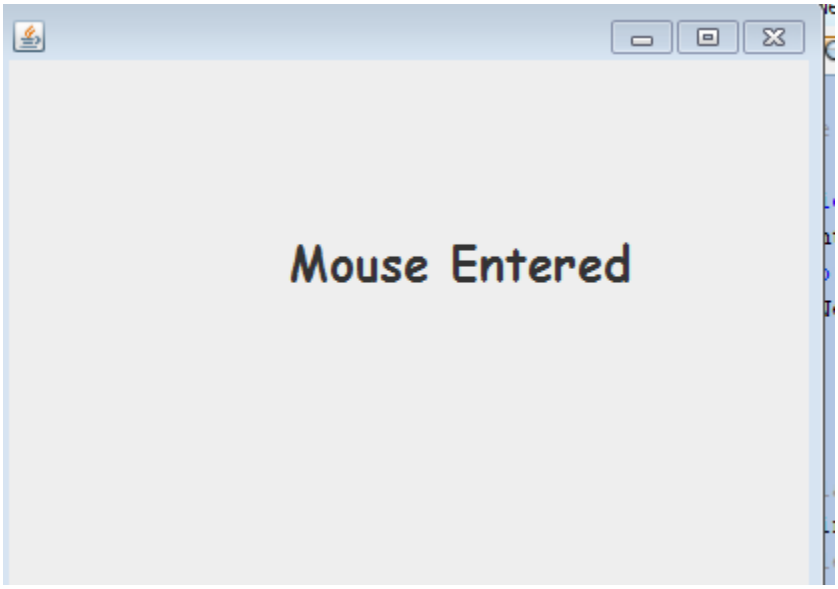
```
package javaapplication1;

public class NewJFrame extends javax.swing.JFrame {

    public NewJFrame() {
        initComponents();
    }

    private void initComponents() {
        mouse = new javax.swing.JLabel();
        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        addMouseListener(new java.awt.event.MouseAdapter() {
```

```
    public void mouseClicked(java.awt.event.MouseEvent evt) {
        formMouseClicked(evt);
    }
    public void mouseEntered(java.awt.event.MouseEvent evt) {
        formMouseEntered(evt);
    }
    public void mouseExited(java.awt.event.MouseEvent evt) {
        formMouseExited(evt);
    }
    public void mousePressed(java.awt.event.MouseEvent evt) {
        formMousePressed(evt);
    }
    public void mouseReleased(java.awt.event.MouseEvent evt) {
        formMouseReleased(evt);
    }
});

mouse.setFont(new java.awt.Font("Comic Sans MS", 1, 24)); // NOI18N
mouse.setText("Mouse ");

javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
getContentPane().setLayout(layout);
layout.setHorizontalGroup(
    layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup(layout.createSequentialGroup()
        .addGap(139, 139, 139)
        .addComponent(mouse)
```

```
            .addContainerGap(180, Short.MAX_VALUE))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(83, 83, 83)
                .addComponent(mouse)
                .addContainerGap(183, Short.MAX_VALUE))
        );

        pack();
    }

    private void formMouseClicked(java.awt.event.MouseEvent evt) {
       mouse.setText("Mouse Clicked");
    }

    private void formMouseEntered(java.awt.event.MouseEvent evt) {
            mouse.setText("Mouse Entered");
    }

    private void formMouseExited(java.awt.event.MouseEvent evt) {
        mouse.setText("Mouse Exited");
    }

    private void formMousePressed(java.awt.event.MouseEvent evt) {
          mouse.setText("Mouse Pressed");
```

```
    }

    private void formMouseReleased(java.awt.event.MouseEvent evt) {
        mouse.setText("Mouse Released");
    }
    public static void main(String args[]) {
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new NewJFrame().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JLabel mouse;
    // End of variables declaration

}
```

OutPut :



2. **Java program for mouse events Moved ,Dragged and Mouse Wheel motion.**

Codes :

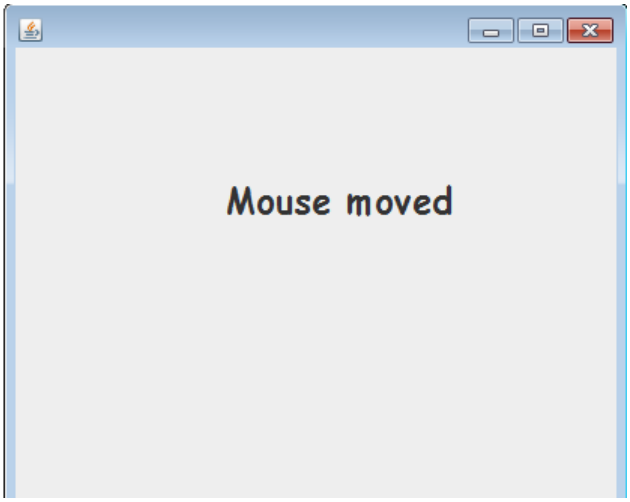
```
package javaapplication1;

public class NewJFrame extends javax.swing.JFrame {
   public NewJFrame() {

      mouse = new javax.swing.JLabel();

      setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
      addMouseWheelListener(new java.awt.event.MouseWheelListener() {
         public void mouseWheelMoved(java.awt.event.MouseWheelEvent evt) {
            formMouseWheelMoved(evt);
         }
      });
```

```
addMouseMotionListener(new java.awt.event.MouseMotionAdapter() {
    public void mouseDragged(java.awt.event.MouseEvent evt) {
        formMouseDragged(evt);
    }
    public void mouseMoved(java.awt.event.MouseEvent evt) {
        formMouseMoved(evt);
    }
});

mouse.setFont(new java.awt.Font("Comic Sans MS", 1, 24)); // NOI18N
mouse.setText("Mouse ");

javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
getContentPane().setLayout(layout);
layout.setHorizontalGroup(
    layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup(layout.createSequentialGroup()
        .addGap(139, 139, 139)
        .addComponent(mouse)
        .addContainerGap(180, Short.MAX_VALUE))
);
layout.setVerticalGroup(
    layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup(layout.createSequentialGroup()
        .addGap(83, 83, 83)
        .addComponent(mouse)
        .addContainerGap(183, Short.MAX_VALUE))
```

```
    );

    pack();
}

private void formMouseDragged(java.awt.event.MouseEvent evt) {
  mouse.setText("Mouse dragged");
}

private void formMouseMoved(java.awt.event.MouseEvent evt) {
  mouse.setText("Mouse moved");
}

private void formMouseWheelMoved(java.awt.event.MouseWheelEvent evt) {
    mouse.setText("Mouse wheel moved");
}


public static void main(String args[]) {
    java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new NewJFrame().setVisible(true);
        }
    });
}

private javax.swing.JLabel mouse;
```

}

OutPut :



3. Java program for Windows Event

Codes :

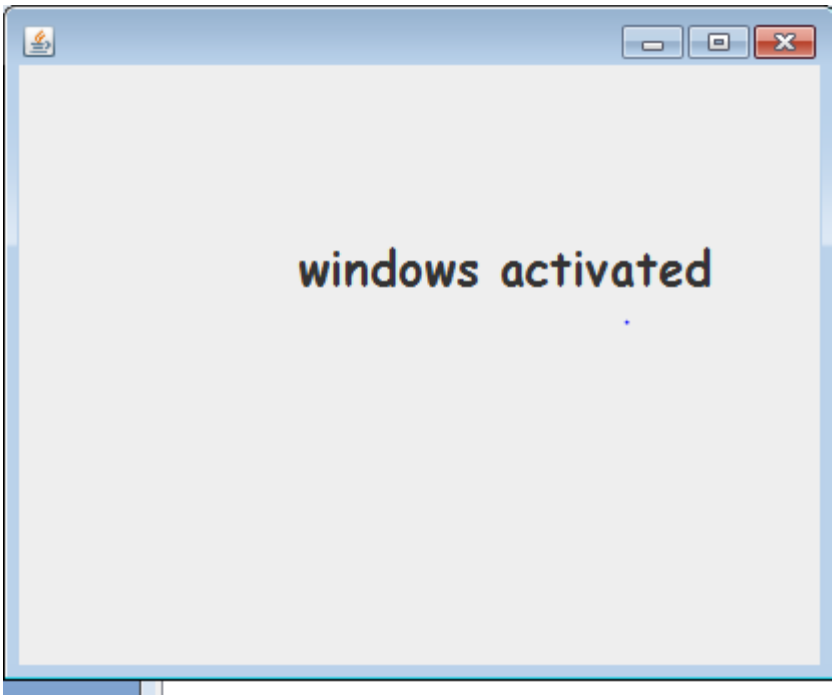
```
package javaapplication1;

public class NewJFrame extends javax.swing.JFrame {


    public NewJFrame() {
```

```
window = new javax.swing.JLabel();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

addWindowListener(new java.awt.event.WindowAdapter() {
    public void windowActivated(java.awt.event.WindowEvent evt) {
        formWindowActivated(evt);
    }
    public void windowClosed(java.awt.event.WindowEvent evt) {
        formWindowClosed(evt);
    }
    public void windowClosing(java.awt.event.WindowEvent evt) {
        formWindowClosing(evt);
    }
});
addMouseMotionListener(new java.awt.event.MouseMotionAdapter() {
    public void mouseDragged(java.awt.event.MouseEvent evt) {
        formMouseDragged(evt);
    }
    public void mouseMoved(java.awt.event.MouseEvent evt) {
        formMouseMoved(evt);
    }
});

window.setFont(new java.awt.Font("Comic Sans MS", 1, 24)); // NOI18N
window.setText("Window");
```

```
    javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
    getContentPane().setLayout(layout);
    layout.setHorizontalGroup(
        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
            .addGap(139, 139, 139)
            .addComponent(window)
            .addContainerGap(173, Short.MAX_VALUE))
    );
    layout.setVerticalGroup(
        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
            .addGap(83, 83, 83)
            .addComponent(window)
            .addContainerGap(183, Short.MAX_VALUE))
    );

    pack();
}

private void formWindowActivated(java.awt.event.WindowEvent evt) {

     System.out.println("Windows activated");
    window.setText("windows activated");
}

private void formWindowClosing(java.awt.event.WindowEvent evt) {
```

```
        System.out.println("Windows Closing");
        window.setText("windows closing");
    }

    private void formWindowClosed(java.awt.event.WindowEvent evt) {

        System.out.println("Windows Closed");
        window.setText("windows closed");
    }


    public static void main(String args[]) {
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new NewJFrame().setVisible(true);
            }
        });
    }


    private javax.swing.JLabel window;

}
```

OutPut :




```
167:1  INS
Output - JavaApplication1 (run)
run:
Windows activated
Windows activated
Windows activated
Windows activated
Windows Closing
BUILD SUCCESSFUL (total time: 15 seconds)
```

4. **Java program for button event**

Codes :

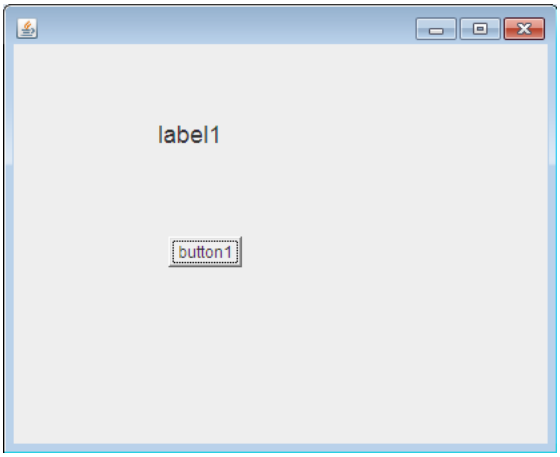
```
package javaapplication1;

public class NewJFrame1 extends javax.swing.JFrame {
```

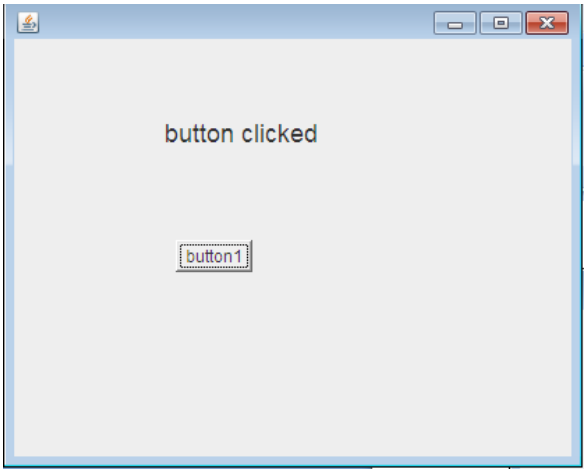
```
    public NewJFrame1() {

        button1 = new java.awt.Button();
        AWT = new java.awt.Label();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        button1.setLabel("button1");
        button1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                button1ActionPerformed(evt);
            }
        });

        AWT.setFont(new java.awt.Font("Comic Sans MS", 0, 18)); // NOI18N
        AWT.setText("label1");

        javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addGroup(layout.createSequentialGroup()
                        .addGap(116, 116, 116)
                        .addComponent(button1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
```

```
                .addGroup(layout.createSequentialGroup()
                    .addGap(106, 106, 106)
                    .addComponent(AWT, javax.swing.GroupLayout.PREFERRED_SIZE, 202,
javax.swing.GroupLayout.PREFERRED_SIZE)))
            .addContainerGap(92, Short.MAX_VALUE))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
layout.createSequentialGroup()
            .addGap(53, 53, 53)
            .addComponent(AWT, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 61,
Short.MAX_VALUE)
            .addComponent(button1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGap(132, 132, 132))
        );

        pack();
    }/

    private void button1ActionPerformed(java.awt.event.ActionEvent evt) {
        AWT.setText("button clicked");
    }

    public static void main(String args[]) {
```

```
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new NewJFrame1().setVisible(true);
            }
        });
    }


    private java.awt.Label AWT;
    private java.awt.Button button1;


}
```

OutPut :





#Chapter 4

5. Java program for FlowLayout

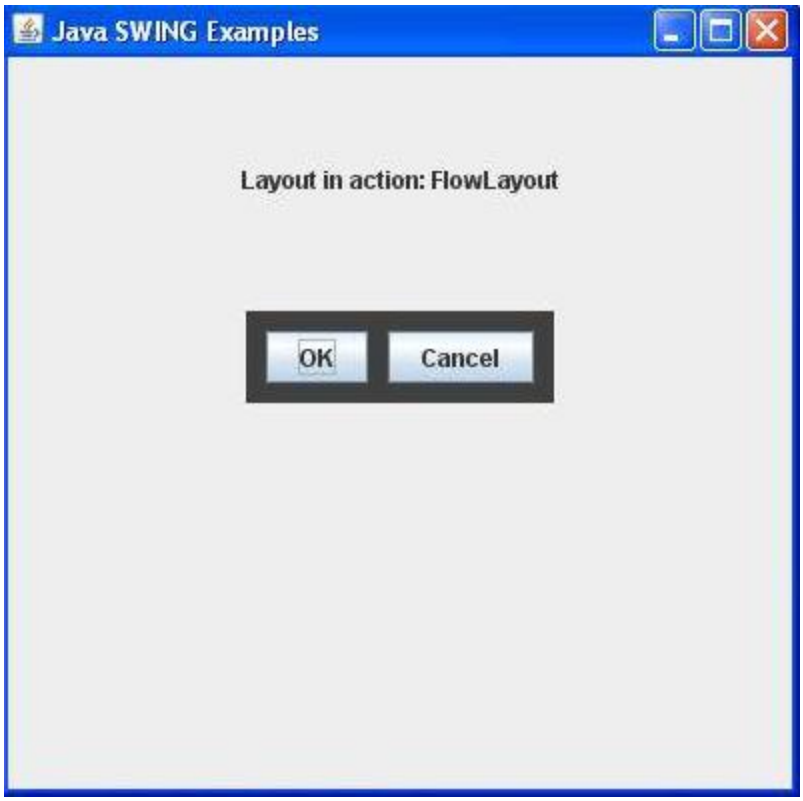
Codes:

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

public class SwingLayoutDemo {
   private JFrame mainFrame;
   private JLabel headerLabel;
   private JLabel statusLabel;
   private JPanel controlPanel;
   private JLabel msglabel;

   public SwingLayoutDemo(){
      prepareGUI();
```

```
}

public static void main(String[] args){
   SwingLayoutDemo swingLayoutDemo = new SwingLayoutDemo();
   swingLayoutDemo.showFlowLayoutDemo();
}

private void prepareGUI(){
   mainFrame = new JFrame("Java SWING Examples");
   mainFrame.setSize(400,400);
   mainFrame.setLayout(new GridLayout(3, 1));

   headerLabel = new JLabel("",JLabel.CENTER );
   statusLabel = new JLabel("",JLabel.CENTER);

   statusLabel.setSize(350,100);
   mainFrame.addWindowListener(new WindowAdapter() {
      public void windowClosing(WindowEvent windowEvent){
         System.exit(0);
      }
   });
   controlPanel = new JPanel();
   controlPanel.setLayout(new FlowLayout());

   mainFrame.add(headerLabel);
```

```
    mainFrame.add(controlPanel);
    mainFrame.add(statusLabel);
    mainFrame.setVisible(true);
  }

  private void showFlowLayoutDemo(){
    headerLabel.setText("Layout in action: FlowLayout");

    JPanel panel = new JPanel();
    panel.setBackground(Color.darkGray);
    panel.setSize(200,200);
    FlowLayout layout = new FlowLayout();
    layout.setHgap(10);
    layout.setVgap(10);
    panel.setLayout(layout);
    panel.add(new JButton("OK"));
    panel.add(new JButton("Cancel"));

    controlPanel.add(panel);

    mainFrame.setVisible(true);
  }
}
```

OutPut:



6. Java program for GridLayout

Codes :

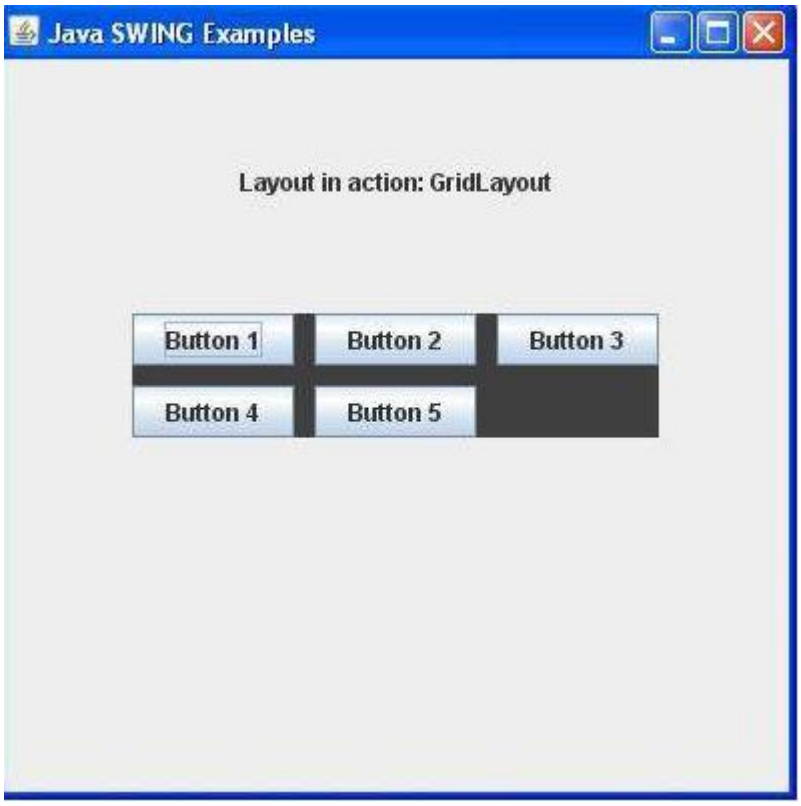
```
import javax.swing.*;

public class SwingLayoutDemo {
   private JFrame mainFrame;
   private JLabel headerLabel;
   private JLabel statusLabel;
   private JPanel controlPanel;
   private JLabel msglabel;
```

```
  public SwingLayoutDemo(){
    prepareGUI();
  }

  public static void main(String[] args){
    SwingLayoutDemo swingLayoutDemo = new SwingLayoutDemo();
    swingLayoutDemo.showGridLayoutDemo();
  }

  private void prepareGUI(){
    mainFrame = new JFrame("Java SWING Examples");
    mainFrame.setSize(400,400);
    mainFrame.setLayout(new GridLayout(3, 1));

    headerLabel = new JLabel("",JLabel.CENTER );
    statusLabel = new JLabel("",JLabel.CENTER);

    statusLabel.setSize(350,100);
    mainFrame.addWindowListener(new WindowAdapter() {
       public void windowClosing(WindowEvent windowEvent){
          System.exit(0);
       }
    });
    controlPanel = new JPanel();
    controlPanel.setLayout(new FlowLayout());
```

```
    mainFrame.add(headerLabel);
    mainFrame.add(controlPanel);
    mainFrame.add(statusLabel);
    mainFrame.setVisible(true);
  }

  private void showGridLayoutDemo(){
    headerLabel.setText("Layout in action: GridLayout");

    JPanel panel = new JPanel();
    panel.setBackground(Color.darkGray);
    panel.setSize(300,300);
    GridLayout layout = new GridLayout(0,3);
    layout.setHgap(10);
    layout.setVgap(10);

    panel.setLayout(layout);
    panel.add(new JButton("Button 1"));
    panel.add(new JButton("Button 2"));
    panel.add(new JButton("Button 3"));
    panel.add(new JButton("Button 4"));
    panel.add(new JButton("Button 5"));
    controlPanel.add(panel);
    mainFrame.setVisible(true);
```

```
  }
}
```

OutPut :



7. Java program for CardLayout

Codes :

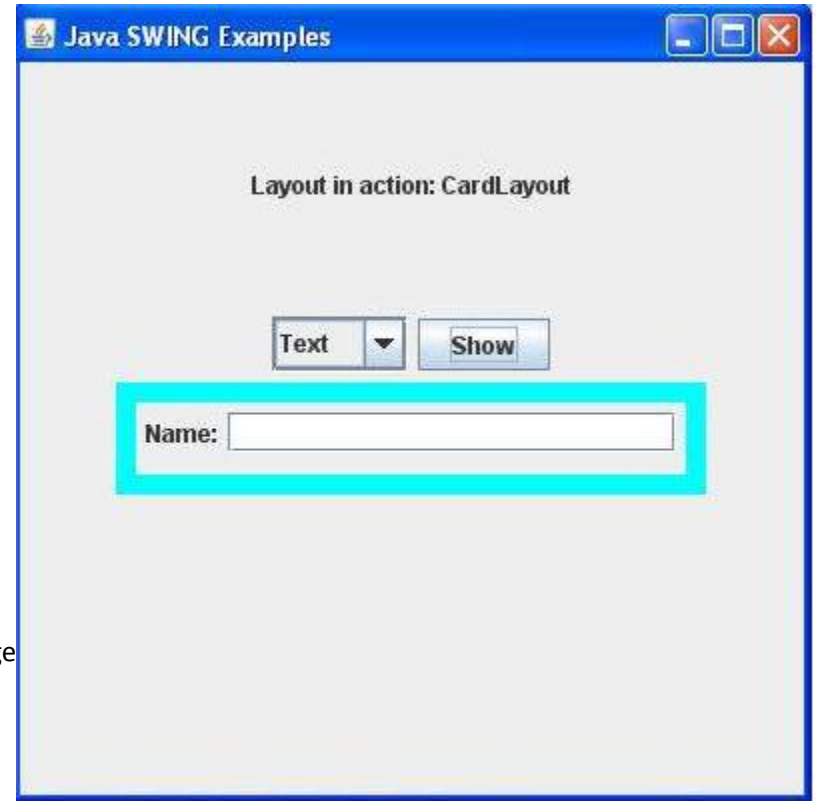
```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;

public class SwingLayoutDemo {
```

```
  private JFrame mainFrame;
  private JLabel headerLabel;
  private JLabel statusLabel;
  private JPanel controlPanel;
  private JLabel msglabel;

  public SwingLayoutDemo(){
    prepareGUI();
  }

  public static void main(String[] args){
    SwingLayoutDemo swingLayoutDemo = new SwingLayoutDemo();
    swingLayoutDemo.showCardLayoutDemo();
  }

  private void prepareGUI(){
    mainFrame = new JFrame("Java SWING Examples");
    mainFrame.setSize(400,400);
    mainFrame.setLayout(new GridLayout(3, 1));

    headerLabel = new JLabel("",JLabel.CENTER );
    statusLabel = new JLabel("",JLabel.CENTER);

    statusLabel.setSize(350,100);
    mainFrame.addWindowListener(new WindowAdapter() {
```

```
        public void windowClosing(WindowEvent windowEvent){
            System.exit(0);
        }
    });
    controlPanel = new JPanel();
    controlPanel.setLayout(new FlowLayout());

    mainFrame.add(headerLabel);
    mainFrame.add(controlPanel);
    mainFrame.add(statusLabel);
    mainFrame.setVisible(true);
  }

  private void showCardLayoutDemo(){
    headerLabel.setText("Layout in action: CardLayout");

    final JPanel panel = new JPanel();
    panel.setBackground(Color.CYAN);
    panel.setSize(300,300);

    CardLayout layout = new CardLayout();
    layout.setHgap(10);
    layout.setVgap(10);
    panel.setLayout(layout);
```

```
JPanel buttonPanel = new JPanel(new FlowLayout());

buttonPanel.add(new JButton("OK"));
buttonPanel.add(new JButton("Cancel"));

JPanel textBoxPanel = new JPanel(new FlowLayout());

textBoxPanel.add(new JLabel("Name:"));
textBoxPanel.add(new JTextField(20));

panel.add("Button", buttonPanel);
panel.add("Text", textBoxPanel);

final DefaultComboBoxModel panelName = new DefaultComboBoxModel();

panelName.addElement("Button");
panelName.addElement("Text");

final JComboBox listCombo = new JComboBox(panelName);
listCombo.setSelectedIndex(0);

JScrollPane listComboScrollPane = new JScrollPane(listCombo);

JButton showButton = new JButton("Show");
```

```
showButton.addActionListener(new ActionListener() {
  public void actionPerformed(ActionEvent e) {
    String data = "";
    if (listCombo.getSelectedIndex() != -1) {
      CardLayout cardLayout = (CardLayout)(panel.getLayout());
      cardLayout.show(panel,
      (String)listCombo.getItemAt(listCombo.getSelectedIndex()));
    }
    statusLabel.setText(data);
  }
});

controlPanel.add(listComboScrollPane);
controlPanel.add(showButton);
   controlPanel.add(panel);
```




```
mainFrame.setVisible(true);
  }
}
```

OutPut :

8. Java program for ContainerListener

Codes :

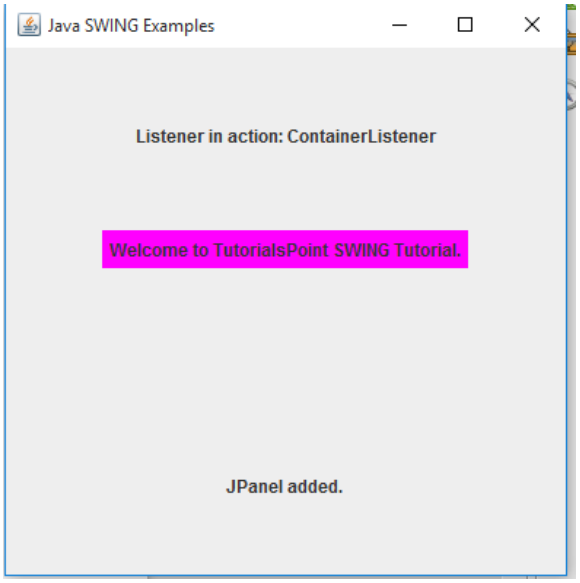
```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;

public class SwingListenerDemo {
   private JFrame mainFrame;
   private JLabel headerLabel;
   private JLabel statusLabel;
   private JPanel controlPanel;

   public SwingListenerDemo(){
```

```
    prepareGUI();
  }

  public static void main(String[] args){
    SwingListenerDemo  swingListenerDemo = new SwingListenerDemo();
    swingListenerDemo.showContainerListenerDemo();
  }

  private void prepareGUI(){
    mainFrame = new JFrame("Java SWING Examples");
    mainFrame.setSize(400,400);
    mainFrame.setLayout(new GridLayout(3, 1));

    headerLabel = new JLabel("",JLabel.CENTER );
    statusLabel = new JLabel("",JLabel.CENTER);

    statusLabel.setSize(350,100);
    mainFrame.addWindowListener(new WindowAdapter() {
       public void windowClosing(WindowEvent windowEvent){
            System.exit(0);
       }
    });
    controlPanel = new JPanel();
    controlPanel.setLayout(new FlowLayout());
```

```
      mainFrame.add(headerLabel);
      mainFrame.add(controlPanel);
      mainFrame.add(statusLabel);
      mainFrame.setVisible(true);
   }

   private void showContainerListenerDemo(){
      headerLabel.setText("Listener in action: ContainerListener");

      JPanel panel = new JPanel();
      panel.setBackground(Color.magenta);
      panel.addContainerListener(new CustomContainerListener());

      JLabel msglabel
      = new JLabel("Welcome to TutorialsPoint SWING Tutorial."
      ,JLabel.CENTER);
      panel.add(msglabel);

      controlPanel.add(panel);
      mainFrame.setVisible(true);
   }

   class CustomContainerListener implements ContainerListener {
      public void componentAdded(ContainerEvent e) {
         statusLabel.setText(statusLabel.getText()
```

```
        + e.getComponent().getClass().getSimpleName() + " added. ");
    }

    public void componentRemoved(ContainerEvent e) {
      statusLabel.setText(statusLabel.getText()
      + e.getComponent().getClass().getSimpleName() + " removed. ");
    }
  }

}
```

OutPut :



9. Java program for GridLayout

Codes :

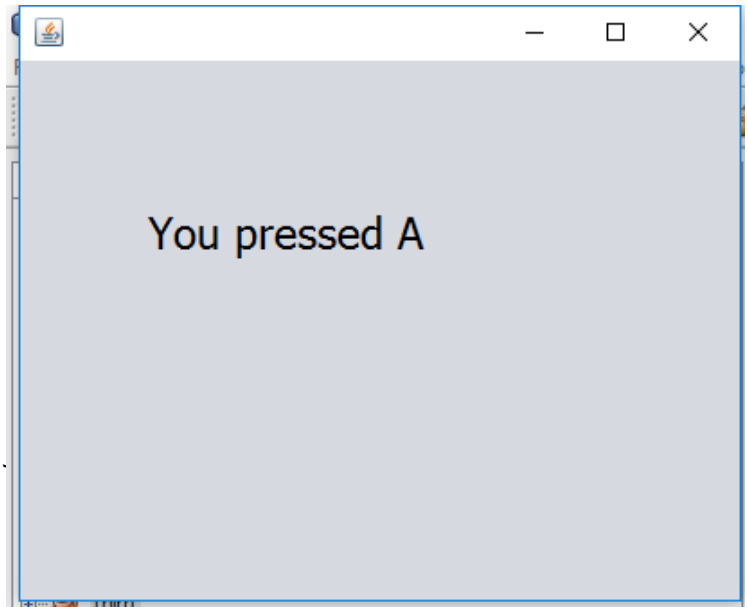
```
package chapter4;
```

```
public class NewJFrame extends javax.swing.JFrame {


    public NewJFrame() {

        jLabel1 = new javax.swing.JLabel();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        addContainerListener(new java.awt.event.ContainerAdapter() {
            public void componentAdded(java.awt.event.ContainerEvent evt) {
                formComponentAdded(evt);
            }
            public void componentRemoved(java.awt.event.ContainerEvent evt) {
                formComponentRemoved(evt);
            }
        });
        addKeyListener(new java.awt.event.KeyAdapter() {
            public void keyPressed(java.awt.event.KeyEvent evt) {
                formKeyPressed(evt);
            }
        });

        jLabel1.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
        jLabel1.setText(" ");

        javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
```

```
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(71, 71, 71)
                .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 282,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(47, Short.MAX_VALUE))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(60, 60, 60)
                .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 71,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(169, Short.MAX_VALUE))
        );

        pack();
    }// </editor-fold>

    private void formComponentAdded(java.awt.event.ContainerEvent evt) {
        System.out.println("Container added");
    }

    private void formKeyPressed(java.awt.event.KeyEvent evt) {
      jLabel1.setText("You pressed "+ evt.getKeyChar());
```

```
    }

    public static void main(String args[]) {

        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new NewJFrame().setVisible(true);
            }
        });
    }

    private javax.swing.JLabel jLabel1;

}
```

Output :



#Chapter 8

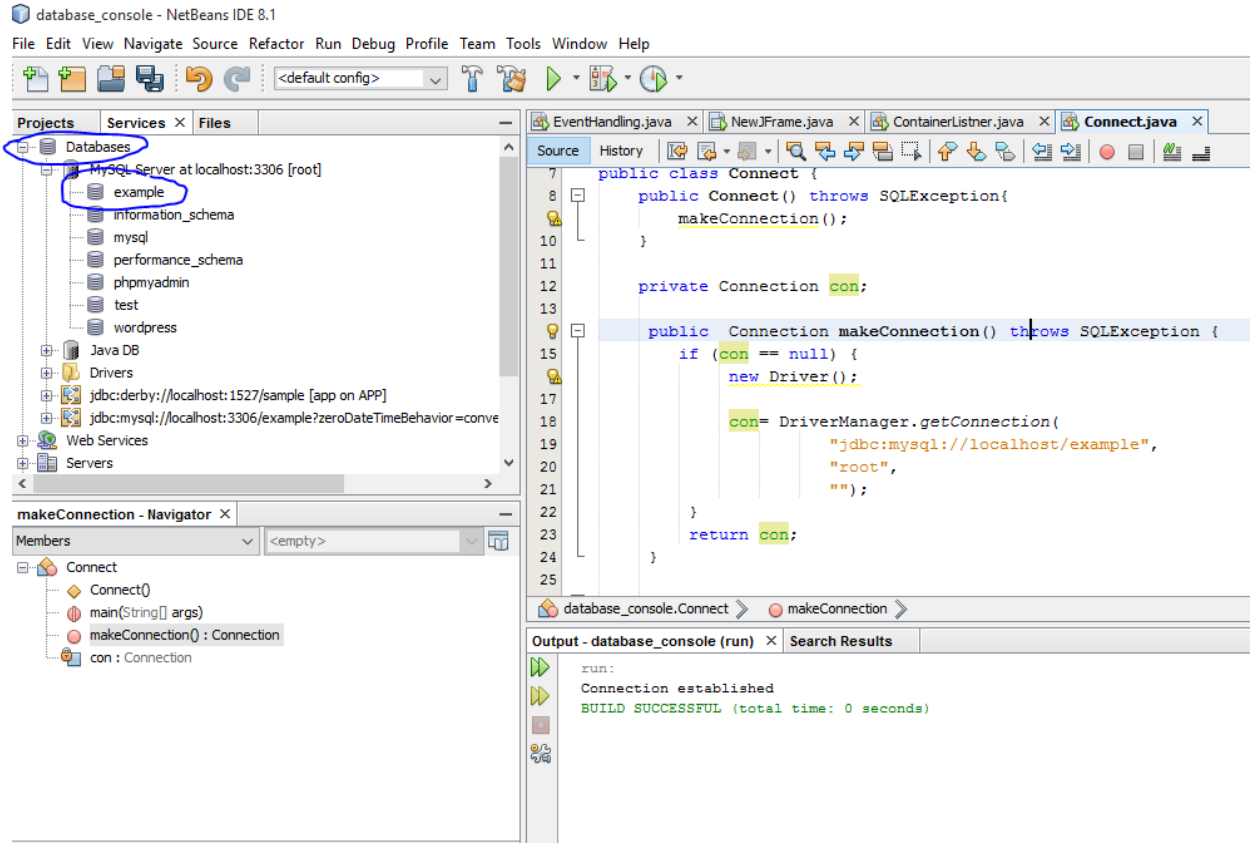
10. Java program to connect to database "example"

Codes :

```
package database_console;

import com.mysql.jdbc.Driver;
import java.sql.*;

public class Connect {
   public Connect() throws SQLException{
      makeConnection();
   }

   private Connection con;

    public  Connection makeConnection() throws SQLException {
      if (con == null) {
          new Driver();
```

```
            con= DriverManager.getConnection(
                    "jdbc:mysql://localhost/example",
                    "root",
                    "");
        }
        return con;
    }

    public static void main(String args[]) {
        try {
            Connect c = new Connect();
            System.out.println("Connection established");
        }
        catch (SQLException e) {
            e.printStackTrace();
            System.err.println("Connection error");
        }

    }
}
```

OutPut :



11. Java program to create table in database "example"

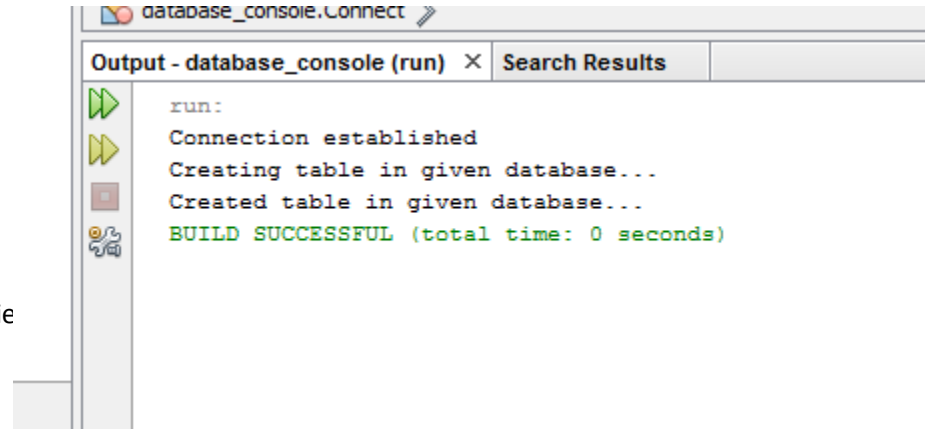
codes :

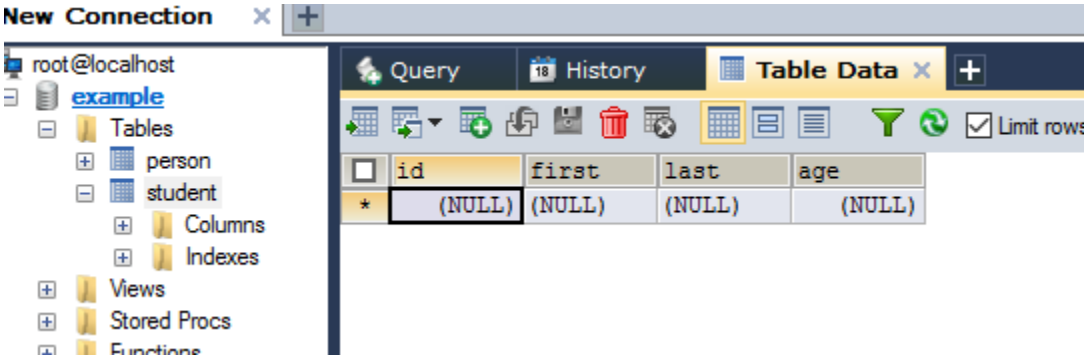
```
package database_console;

import com.mysql.jdbc.Driver;
import java.sql.*;

public class Connect {
```

```
public Connect() throws SQLException{
   makeConnection();
}

private Connection con;
private Statement stmt = null;

public  Connection makeConnection() throws SQLException {
   if (con == null) {
       new Driver();

       con= DriverManager.getConnection(
                "jdbc:mysql://localhost/example",
                "root",
                "");
    }
    return con;
 }

public void  makeTable(String tablename) throws SQLException{
   System.out.println("Creating table in given database...");
  stmt = con.createStatement();

  String sql = "CREATE TABLE   "+tablename +
            "(id INTEGER not NULL, " +
            " first VARCHAR(255), " +
            " last VARCHAR(255), " +
```

```
                " age INTEGER, " +
                " PRIMARY KEY ( id ))";

      stmt.executeUpdate(sql);
      System.out.println("Created table in given database...");

    }
    public static void main(String args[]) {
        try {
            Connect c = new Connect();
            System.out.println("Connection established");
            c.makeTable("student");
        }
        catch (SQLException e) {
            e.printStackTrace();
            System.err.println("Connection error");
        }

    }
}
```

OutPut :





12. Java program to insert data into table created in database "example".

Codes :

```
package database_console;

import com.mysql.jdbc.Driver;
import java.sql.*;

public class Connect {
    public Connect() throws SQLException{
        makeConnection();
    }

    private Connection con;
    private Statement stmt = null;
```

```
public  Connection makeConnection() throws SQLException {
   if (con == null) {
       new Driver();

       con= DriverManager.getConnection(
               "jdbc:mysql://localhost/example",
               "root",
               "");
    }
    return con;
}




public void InsertData() throws SQLException{

   stmt = con.createStatement();

  String sql = "INSERT INTO STUDENT VALUES (1, 'Zara', 'Ali', 18)";


  stmt.executeUpdate(sql);



}
```

```
    public static void main(String args[]) {
        try {
            Connect c = new Connect();
            System.out.println("Connection established");

            c.InsertData();
        }
        catch (SQLException e) {
            e.printStackTrace();
            System.err.println("Connection error");
        }

    }
}
```

Output: