AWT

Border Layout Demo

```java
import java.applet.Applet;
import java.awt.*;
//import java.awt.color.*;
import java.awt.event.*;

/* <applet code = "BorderLayoutDemo" width=200 height=200>
   </applet>
*/
public class BorderLayoutDemo extends Applet implements AdjustmentListener {

  Scrollbar hs1, hs2, vs1, vs2;
  TextField text1;

  public void init() {
    setLayout(new BorderLayout());

    hs1 = new Scrollbar(Scrollbar.HORIZONTAL, 1, 1, 1, 200);
    add("North", hs1);
    hs1.addAdjustmentListener(this);

    vs1 = new Scrollbar(Scrollbar.VERTICAL, 1, 1, 1, 200);
    add("West", vs1);
    vs1.addAdjustmentListener(this);

    hs2 = new Scrollbar(Scrollbar.HORIZONTAL, 1, 1, 1, 200);
    add("South", hs2);
    hs2.addAdjustmentListener(this);

    vs2 = new Scrollbar(Scrollbar.VERTICAL, 1, 1, 1, 200);
    add("East", vs2);
    vs2.addAdjustmentListener(this);

    text1 = new TextField(20);
    add("Center", text1);
  }

  public void adjustmentValueChanged(AdjustmentEvent ae) {
    if (ae.getAdjustable() == hs1) {
      hs1.setValue(hs1.getValue());
      hs2.setValue(hs1.getValue());
      text1.setText("Horizontal Location" + hs1.getValue());
    }
    if (ae.getAdjustable() == vs1) {
      vs1.setValue(vs1.getValue());
      vs2.setValue(vs1.getValue());
      text1.setText("Vertical Location" + vs1.getValue());
    }
```

```java
    if (ae.getAdjustable() == hs2) {
      hs2.setValue(hs2.getValue());
      hs1.setValue(hs2.getValue());
      text1.setText("Horizontal Location" + hs2.getValue());
    }

    if (ae.getAdjustable() == vs2) {
      vs2.setValue(vs2.getValue());
      vs1.setValue(vs2.getValue());
      text1.setText("Vertical Location" + vs2.getValue());
    }
  }
}
```

Card Layout Demo

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

/*
<applet code="CardLayoutDemo" width=500 height=500>
</applet>
 */

public class CardLayoutDemo extends Applet implements ActionListener {

  Button b1, b2, b3, b4;
  Panel p1;
  CardLayout buttonCardLayout;

  public void init() {
    p1 = new Panel();
    add(p1);

    buttonCardLayout = new CardLayout();
    p1.setLayout(buttonCardLayout);

    b1 = new Button("first button");
    b1.addActionListener(this);
    p1.add(b1, "first button");

    b2 = new Button("Second");
    b2.addActionListener(this);
    p1.add(b2, "Second");

    b3 = new Button("Third");
```

```java
    b3.addActionListener(this);
    p1.add(b3, "third");

    b4 = new Button("fourth");
    b4.addActionListener(this);
    p1.add(b4,"fourth");

  }

  public void actionPerformed(ActionEvent e) {
    buttonCardLayout.next(p1);
  }
}
```

Checker

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

/*
 <applet code="Checker" width=500 height=500>
 </applet>
 */

public class Checker extends Applet implements ItemListener {

  Checkbox c1, c2, c3;
  TextField tf1;

  public void init() {
    c1 = new Checkbox("c1");
    add(c1);
    c1.addItemListener(this);

    c2 = new Checkbox("c2");
    add(c2);
    c2.addItemListener(this);

    c3 = new Checkbox("c3");
    add(c3);
    c3.addItemListener(this);

    tf1 = new TextField(20);
    add(tf1);
  }

  @Override
```

```java
  public void itemStateChanged(ItemEvent e) {
    if (e.getItemSelectable() == c1) {
      tf1.setText("RED");
    }

    if (e.getItemSelectable() == c2) {
      tf1.setText("GREEN");
    }
    if (e.getItemSelectable() == c3) {
      tf1.setText("BLUE");
    }
  }
}
```

Choice Demo

```java
import java.applet.Applet;
import java.awt.*;
import java.awt.event.*;
/* <applet code = "ChoiceDemo" width=200 height=200> </applet>
*/

import java.awt.Label;

public class ChoiceDemo extends Applet implements ItemListener{

    Choice ch1;
    Label l1;

    @Override
    public void init() {
        ch1 = new Choice();

        ch1.addItem("Green1");
        ch1.addItem("Green2");
        ch1.addItem("Green3");
        ch1.addItem("Green4");
        ch1.addItem("Green5");

        ch1.addItemListener(this);
        add(ch1);

        l1 = new Label("   ");
        add(l1);

    }

    @Override
    public void itemStateChanged(ItemEvent e) {
```

```
        Choice c = (Choice)e.getItemSelectable();

        l1.setText(c.getSelectedItem());
    }
}
```

Grid Bag Demo

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

/* <applet code = "GridBagDemo" width=200 height=200>
   </applet>
*/
public class GridBagDemo extends Applet {

  Button b1, b2, b3, b4, b5, b6;
  GridBagLayout gb1;
  GridBagConstraints gbc;

  @Override
  public void init() {
    gb1 = new GridBagLayout();
    setLayout(gb1);
    gbc = new GridBagConstraints();

    b1 = new Button(" f1");
    gbc.fill = GridBagConstraints.BOTH;
    gbc.anchor = GridBagConstraints.CENTER;
    gbc.gridwidth = 1;
    gbc.weightx = 1.00;
    gb1.setConstraints(b1, gbc);
    add(b1);

    b2 = new Button("SecondButton");
    gbc.gridwidth = GridBagConstraints.REMAINDER; // To fill remainder display area
    gb1.setConstraints(b2, gbc);
    add(b2);

    b3 = new Button("ThirdButton");
    gbc.weightx = 0.0;   // To specify horizontal stretch of the component . Default value  =
0
    gbc.weighty = 1.0;   // To specify Vertical stretch of the component . Default value  = 0
    gbc.gridheight = 2; // To specify no of rows in the display area for add the component
    gbc.gridwidth = 1;   // To specify no of Columns in the display area for add the component
    gb1.setConstraints (b3,gbc);
    add(b3);
```

```
        b4 = new Button("FourthButton");
     gbc.gridwidth = GridBagConstraints.REMAINDER;
     gbc.gridheight = 1;
     gb1.setConstraints (b4,gbc);
     add(b4);


        b5 = new Button("FifthButton");
     gbc.gridwidth = GridBagConstraints.REMAINDER;
     gbc.gridheight = 1;
     gb1.setConstraints (b5,gbc);
     add(b5);


        b6 = new Button("SixButton");
     gbc.gridwidth = GridBagConstraints.REMAINDER;
     gbc.gridheight = 1;
     gb1.setConstraints (b6,gbc);
     add(b6);
  }
}
```

Keyboard Demo

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

/*
<applet code = keyboarddemo width=300 height=300>
</applet>*/

public class keyboarddemo extends Applet implements KeyListener
{
        String msg = "";
        int x=10,y=20;
        public void init()
        {
                addKeyListener(this);
                requestFocus(); // request for input focus defined by component class
        }

        public void keyPressed(KeyEvent ke)
        {
                showStatus("key down");
        }

        public void keyReleased(KeyEvent ke)
        {
                showStatus("Key Up");
        }

        public void keyTyped(KeyEvent ke)
        {
                msg+=ke.getKeyChar();
                repaint();
```

```
        }
        public void paint(Graphics g)
        {
                g.drawString(msg,x,y);
        }
}
```

List Event Demo

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

/* <applet code = "ListEvents" width=200 height=200>
    </applet>
*/

public class ListEvents extends Applet implements ActionListener, ItemListener {

  TextArea ta1;
  List l1;

  @Override
  public void init() {
    l1 = new List();

    l1.add("rohan1");
    l1.add("rohan2");
    l1.add("rohan3");
    l1.add("rohan4");

    add(l1);

    ta1 = new TextArea();
    add(ta1);
  }

  @Override
  public void actionPerformed(ActionEvent e) {
    ta1.append("ActionEvent " + e.getActionCommand() + "\n");
  }

  @Override
  public void itemStateChanged(ItemEvent e) {
    List l1 = (List) e.getItemSelectable();
    ta1.append("ItemEvent " + l1.getSelectedItem() + "\n");
  }
}
```

Mouse Demo

```java
import java.awt.*;
import java.applet.*;
// Handling Mouse events

import java.awt.event.*;

/* <applet code="mousedemo" width = 300 height=100> </applet> */

public class mousedemo extends Applet implements MouseListener
{
        String msg="";
        int x=10,y=20;
        public void init()
        {
                addMouseListener(this);

        }

        public void mouseClicked(MouseEvent e)
        {
                msg = "Mouse Clicked";
                repaint();
        }

        public void mouseEntered(MouseEvent e)
        {
                msg = "Mouse Entered";
                repaint();
        }

        public void mouseExited(MouseEvent e)
        {
                msg = "Mouse Excited";
                repaint();
        }

        public void mousePressed(MouseEvent e)
        {
                msg = "Mouse Pressed";
                repaint();
        }

        public void mouseReleased(MouseEvent e)
        {
                msg = "Mouse Released";
                repaint();
        }

        public void paint(Graphics g)
        {
                g.drawString(msg,x,y);
        }
}
```

Panel Demo

```java
import java.applet.Applet;
```

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

/* <applet code = "PanelDemo" width=200 height=200>
   </applet>
*/
public class PanelDemo extends Applet implements ItemListener, ActionListener {

    Label label1;
    Button b1, b2, b3, b4, b5, b6;
    Checkbox chkb1, chkb2, chkb3, chkb4;

    public void init() {
        setLayout(new BorderLayout());
        Panel pn1 = new Panel();

        chkb1 = new Checkbox("Red", true);
        pn1.add(chkb1);

        chkb2 = new Checkbox("Blue", false);
        pn1.add(chkb2);

        chkb3 = new Checkbox("Green", false);
        pn1.add(chkb3);

        chkb1.addItemListener(this);
        chkb2.addItemListener(this);
        chkb3.addItemListener(this);

        pn1.setBackground(Color.green);
        add(pn1, "North");

        Panel pn2 = new Panel();
        pn2.setLayout(new GridLayout(3, 2));
        // for (int i = 0; i < 6; i++) {
        //   pn2.add(new Button("Button" + i));
        // }

        b1 = new Button("Button - 1");
        pn2.add(b1);
        b2 = new Button("Button - 2");
        pn2.add(b2);
        b3 = new Button("Button - 3");
        pn2.add(b3);
        b4 = new Button("Button - 4");
        pn2.add(b4);
        b5 = new Button("Button - 5");
        pn2.add(b5);
        b6 = new Button("Button - 6");
        pn2.add(b6);
```

```java
      b1.addActionListener(this);
      b2.addActionListener(this);
      b3.addActionListener(this);
      b4.addActionListener(this);
      b5.addActionListener(this);
      b6.addActionListener(this);
      add(pn2, "Center");

      Panel p3 = new Panel();
      label1 = new Label("                                    ");
      p3.add(label1);
      p3.setBackground(Color.magenta);
      add(p3, "South");
  }

  public void itemStateChanged(ItemEvent ie) {
    if (ie.getItemSelectable() == chkb1) {
      label1.setText("Checkbox 1 Selected");
    }

    if (ie.getItemSelectable() == chkb2) {
      label1.setText("Checkbox 2 Selected");
    }

    if (ie.getItemSelectable() == chkb3) {
      label1.setText("Checkbox 3 Selected");
    }
  }

  @Override
  public void actionPerformed(ActionEvent e) {
    if (e.getSource() == b1) {
      label1.setText("Button 1 Selected");
    }
    if (e.getSource() == b2) {
      label1.setText("Button 2 Selected");
    }
    if (e.getSource() == b3) {
      label1.setText("Button 3 Selected");
    }
    if (e.getSource() == b4) {
      label1.setText("Button 4 Selected");
    }
    if (e.getSource() == b5) {
      label1.setText("Button 5 Selected");
    }
    if (e.getSource() == b6) {
      label1.setText("Button 6 Selected");
    }
```

```
    }
}
```

Radio Selection Demo

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

/*
 * <applet code="RadioSelection" width=500 height=500>
 * </applet>
 */

public class RadioSelection extends Applet implements ItemListener {

  CheckboxGroup chgp;
  Checkbox ch1, ch2, ch3;
  TextField t1;

  public void init() {
    chgp = new CheckboxGroup();

    ch1 = new Checkbox("1", false, chgp);
    add(ch1);
    ch1.addItemListener(this);

    ch2 = new Checkbox("2", false, chgp);
    add(ch2);
    ch2.addItemListener(this);

    ch3 = new Checkbox("3", false, chgp);
    add(ch3);
    ch3.addItemListener(this);

    t1 = new TextField();
    add(t1);
  }

  @Override
  public void itemStateChanged(ItemEvent e) {
    if (e.getItemSelectable() == ch1) {
      t1.setText("Radio Button 1 Selected");
    }
    if (e.getItemSelectable() == ch2) {
      t1.setText("Radio Button 2 Selected");
    }
    if (e.getItemSelectable() == ch3) {
```

```
        t1.setText("Radio Button 3 Selected");
     }
   }
}
```

Scroll Bar Demo

```
import java.applet.Applet;
import java.awt.*;
import java.awt.event.*;
/* <applet code = "ScrollBar" width=200 height=200>
    </applet>
*/
public class ScrollBar extends Applet implements AdjustmentListener
{
        TextField text1;
        Scrollbar scroll1,scroll2;
        public void init()
        {
                text1 = new TextField(20);
                add(text1);
                scroll1 = new Scrollbar(Scrollbar.HORIZONTAL , 1,10,1,100);
                add(scroll1);
                scroll1.addAdjustmentListener(this);

                scroll2 = new Scrollbar(Scrollbar.VERTICAL, 1,10,1,100);
                add(scroll2);
                scroll2.addAdjustmentListener(this);

        }

        public void adjustmentValueChanged(AdjustmentEvent ae)
        {
                if(ae.getAdjustable() == scroll1)
                {
                        scroll1.setValue(scroll1.getValue());
                        text1.setText("Horizontal position" + scroll1.getValue());
                }

                if(ae.getAdjustable() == scroll2)
                {
                        scroll2.setValue(scroll2.getValue());
                        text1.setText("Vertical position" + scroll2.getValue());
                }
        }
}
```

Frame Demo

```
import java.applet.*;
import java.awt.*;
import java.awt.Button;
import java.awt.TextField;
import java.awt.event.*;
```

```java
/*
 * <applet code="FrameDemo" width=500 height=500>
 * </applet>
 */

public class FrameDemo extends Applet implements ActionListener {

  Button b;
  TextField tf;

  @Override
  public void init() {
    Frame f = new Frame();
    f.setLayout(new GridLayout(2, 2));
    f.setSize(200, 200);

    b = new Button("btn 1");
    f.add(b);
    b.addActionListener(this);

    tf = new TextField(20);
    f.add(tf);
    f.show();
  }

  @Override
  public void actionPerformed(ActionEvent e) {
    if (e.getSource() == b) {
      tf.setText("Button Clicked");
    }
  }
}
```

Frame Apllication

```java
import java.applet.*;
import java.awt.*;
import java.awt.Button;
import java.awt.TextField;
import java.awt.event.*;

public class FrameApplication extends Frame implements ActionListener {

  Button b;
  TextField tf;

  public FrameApplication() {
    tf = new TextField(20);
```

```
    add(tf);
    b = new Button("button 1");
    add(b);
    b.addActionListener(this);

    addWindowListener(
      new WindowAdapter() {
        @Override
        public void windowClosing(WindowEvent e) {
          System.exit(0);
        }
      }
    );

    setVisible(true);
  }

  @Override
  public void actionPerformed(ActionEvent e) {
    if (e.getSource() == b) {
      tf.setText("Button Clicked");
    }
  }

  public static void main(String[] args) {
    FrameApplication fa = new FrameApplication();
    fa.setSize(500, 500);
    fa.setLayout(new FlowLayout());
    fa.show();
  }
}
```

Frame Application 2

```
import java.applet.*;
import java.awt.*;
import java.awt.Button;
import java.awt.TextArea;
import java.awt.event.*;

class Frame11 extends Frame implements ActionListener {

  public Frame11() {
    Frame f1 = new Frame("Frame Demo");
    f1.setSize(200, 200);

    addWindowListener(
      new WindowAdapter() {
        @Override
```

```java
            public void windowClosing(WindowEvent e) {
                System.exit(0);
            }
        }
    );

    borderlayout();
    setVisible(true);
}

@Override
public void actionPerformed(ActionEvent e) {
    gridlayout();
}

public void borderlayout() {
    Button e1, e2, e3, e4;

    e1 = new Button(" btn 1");
    e2 = new Button(" btn 2");
    e3 = new Button(" btn 3");
    e4 = new Button(" btn 4");
    TextArea ta = new TextArea("Press any button to change layout.");
    add("Center", ta);


    add(e1, BorderLayout.EAST);
    add(e2, BorderLayout.WEST);
    add(e3, BorderLayout.NORTH);
    add(e4, BorderLayout.SOUTH);

    e1.addActionListener(this);
    e2.addActionListener(this);
    e3.addActionListener(this);
    e4.addActionListener(this);

    setVisible(true);
}

public void gridlayout() {

    setLayout(new GridLayout(3,4));

    addWindowListener(new WindowAdapter(){
        @Override
        public void windowClosing(WindowEvent e) {
            System.exit(0);
        }
    });
```

```
      setVisible(true);
   }
}


public class FrameApplication2{
   public static void main(String[] args) {
      Frame11 f1 = new Frame11();
   }
}
```

Dialog Demo

```java
import java.applet.Applet;
import java.awt.*;
import java.awt.Button;
import java.awt.TextField;
import java.awt.event.*;
import javax.swing.Action;

/* <applet code = "DialogDemo" width=400 height=400>
   <param name = width value = 200>
   <param name = height value = 150>
    </applet>
*/

public class DialogDemo extends Applet implements ActionListener {

   Button b;
   TextField t;

   @Override
   public void init() {
      Frame f = new Frame();
      f.setSize(500, 500);
      f.show();

      Dialog d = new Dialog(f, "First Dialog", false);
      d.setLayout(new GridLayout(2, 2));
      d.setSize(200, 200);

      b = new Button("click me");
      d.add(b);
      b.addActionListener(this);

      t = new TextField(20);
      d.add(t);
      d.show();
   }

   @Override
```

```java
    public void actionPerformed(ActionEvent e) {
        if (e.getSource() == b) {
            t.setText("Button clicked");
        }
    }
}
```

Menu Demo

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

import java.awt.MenuItem;

import java.awt.TextArea;

/* <applet code = "MenuDemo" width = 300 height=300>
    <param name = width value = 100>
    <param name = height value =100>
  </applet>    */

public class MenuDemo extends Applet implements ActionListener{

    Frame f1;
    TextArea t1;
    MenuItem m1;

    @Override
    public void init() {
        f1 = new Frame("Demo");
        f1.setSize(500,500);

        t1 = new TextArea(" ", 80,40);
        f1.add(t1);

        MenuBar mb = new MenuBar();
        f1.setMenuBar(mb);

        Menu file = new Menu("file");
        m1= new MenuItem("file");
        file.add(m1);
        m1.addActionListener(this);
        file.add(new MenuItem("new.."));
        file.add(new MenuItem("new..1"));
        file.add(new MenuItem("new.2"));
        file.add(new MenuItem("new.3"));
        mb.add(file);
```

```java
        Menu edit = new Menu("edit");
        edit.add(new MenuItem("cut"));
        edit.add(new MenuItem("copy"));
        edit.add(new MenuItem("paste"));
        edit.add(new MenuItem("-"));
        // mb.add(edit);

        Menu sub = new Menu("Special");
        sub.add(new MenuItem("ft"));
        sub.add(new MenuItem("st"));
        sub.add(new MenuItem("td"));
        edit.add(sub);
        edit.add(new CheckboxMenuItem("debug",true));
        edit.add(new CheckboxMenuItem("testing",true));
        mb.add(edit);
        f1.show();
    }

    @Override
    public void actionPerformed(ActionEvent e) {
        if(e.getSource() == m1){
            t1.append("file menu item clicked");
        }
    }
}
```

Test Menu Demo

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

class MyMenu extends Frame {

  String msg = " ", drashape = " ", fillcolor = " ";

  public MyMenu() {
    setSize(300, 200);
    setTitle("Menu Application");

    MenuBar mb = new MenuBar();
    setMenuBar(mb);

    Menu shape = new Menu("Shape");
    Menu color = new Menu("Color");
    mb.add(color);
    mb.add(shape);
```

```java
        MenuItem s_rec, s_sq, s_cir;
        MenuItem c_red, c_blue, c_green;

        shape.add(s_rec = new MenuItem("Rectangle"));
        shape.add(s_sq = new MenuItem("Square"));
        shape.add(s_cir = new MenuItem("Circle"));

        color.add(c_red = new MenuItem("Red"));
        color.add(c_blue = new MenuItem("Blue"));
        color.add(c_green = new MenuItem("Green"));

        MyMenuHandler h = new MyMenuHandler(this);

        s_rec.addActionListener(h);
        s_sq.addActionListener(h);
        s_cir.addActionListener(h);
        c_red.addActionListener(h);
        c_blue.addActionListener(h);
        c_green.addActionListener(h);
    }

    @Override
    public void paint(Graphics g) {
        if (drashape == "rect" && fillcolor == "red") {
            g.setColor(Color.RED);

            g.drawRect(50, 50, 100, 100);
            g.fillRect(51, 51, 101, 101);
        }

        if (drashape == "rect" && fillcolor == "green") {
            g.setColor(Color.GREEN);
            g.drawRect(50, 50, 100, 100);
            g.fillRect(51, 51, 101, 101);
        }

        if (drashape == "rect" && fillcolor == "blue") {
            g.setColor(Color.BLUE);
            g.drawRect(50, 50, 100, 100);
            g.fillRect(51, 51, 101, 101);
        }

        if (drashape == "cir" && fillcolor == "red") {
            g.setColor(Color.RED);

            g.drawOval(50, 50, 100, 100);
            g.fillOval(51, 51, 101, 101);
        }

        if (drashape == "cir" && fillcolor == "green") {
```

```java
                g.setColor(Color.GREEN);
                g.drawOval(50, 50, 100, 100);
                g.fillOval(51, 51, 101, 101);
            }

            if (drashape == "cir" && fillcolor == "blue") {
                g.setColor(Color.BLUE);
                g.drawOval(50, 50, 100, 100);
                g.fillOval(51, 51, 101, 101);
            }
        }
    }
}

class MyMenuHandler implements ActionListener, ItemListener {

    MyMenu mymenu;

    public MyMenuHandler(MyMenu mymenu) {
        this.mymenu = mymenu;
    }

    @Override
    public void actionPerformed(ActionEvent e) {
        String arg = (String) e.getActionCommand();

        if (arg.equals("Rectangle")) {
            mymenu.drashape = "rect";
        }
        if (arg.equals("Circle")) {
            mymenu.drashape = "cir";
        }
        if (arg.equals("Red")) {
            mymenu.fillcolor = "red";
        }
        if (arg.equals("Green")) {
            mymenu.fillcolor = "green";
        }

        if (arg.equals("Blue")) {
            mymenu.fillcolor = "blue";
        }

        mymenu.repaint();
    }

    @Override
    public void itemStateChanged(ItemEvent e) {
        mymenu.repaint();
    }
}
```

```java
public class TestMenu {

  public static void main(String[] args) {
    MyMenu mm = new MyMenu();
    mm.show();
  }
}
```

Add Number Key

```java
import java.awt.*;
import java.awt.event.*;
public class AddNumberKey extends Frame implements  KeyListener
{
        TextField tf1,tf2,tf3;

        public AddNumberKey()
        {
            tf1=new TextField(10);
            tf2=new TextField(10);
            tf3=new TextField(10);
            setLayout(new FlowLayout());
            add(tf1);
            add(tf2);
            add(tf3);
             //Register the event
            tf2.addKeyListener(this);

        /*  addWindowListener(new WindowAdapter(){
            public void windowClosing(WindowEvent we){
                System.exit(0);
            }});*/
        }

        public void keyPressed(KeyEvent e)
        {
          if(e.getKeyCode()==KeyEvent.VK_ENTER)
            {
                String s1=tf1.getText();
                String s2=tf2.getText();
                int a=Integer.parseInt(s1);
                int b=Integer.parseInt(s2);
                tf3.setText(String.valueOf(a+b));
            }
        }
        public void keyTyped(KeyEvent e)
        {
        }
```

```java
        public void keyReleased(KeyEvent e)
        {
        }
        public static void main(String a[])
        {
            Frame f=new AddNumberKey();
            f.setSize(200,200);
            f.setVisible(true);
        }
}
```

Adapter Class Demo

```java
import java.applet.*;
import java.awt.*;
import java.awt.Color;
import java.awt.event.*;
import javafx.scene.input.MouseEvent;

/* <applet code = AdapterClassDemo width = 300 height=100> </applet> */

public class AdapterClassDemo extends Applet {

  @Override
  public void init() {
    setBackground(Color.YELLOW);
    addMouseListener(new MyMouseAdapter(this));
  }
}

class MyMouseAdapter extends MouseAdapter {

  AdapterClassDemo acd;

  public MyMouseAdapter(AdapterClassDemo acd) {
    this.acd = acd;
  }

  public void mousePressed(MouseEvent e) {
    acd.setBackground(Color.red);
    acd.repaint();
  }

  public void mouseReleased(MouseEvent e) {
    acd.setBackground(Color.green);
    acd.repaint();
  }
}
```

Anonymos Class Demo

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

/* <applet code = AdapterClassDemo width = 300 height=100> </applet> */

public class AnonymousClassDemo extends Applet
{
    public void init()
    {
        setBackground(Color.yellow);
        addMouseListener(new MouseAdapter()
        {
            public void mousePressed(MouseEvent me)
            {
                setBackground(Color.red);
                repaint();
            }

            public void mouseReleased(MouseEvent me)
            {

                setBackground(Color.green);
                repaint();
            }
        } );

    }
}
```

UnBound Method

```java
import java.awt.*;

class UseBoundsMethod  extends Frame
{
        Label l1;
        TextField t1;
        Button b1;
        UseBoundsMethod()
        {
                setSize(500,500);
                setVisible(true);
                setLayout(null);

                l1=new Label("Enter Number");
                l1.setBounds(100,100,120,10);
                add(l1);
                t1=new TextField(10);
                t1.setBounds(220,100,100,20);
                add(t1);
                //b1=new Button("Ok");
```

```java
        }

        public static void main(String[] args)
        {
                UseBoundsMethod obj=new UseBoundsMethod();

        }
}
```

Radio Button

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

/* <applet code = DoubleSquare height=500 width=500 > </applet>
 */

public class DoubleSquare extends Applet implements ItemListener {

  TextField t1, t2;

  Label l1, l2;
  CheckboxGroup chgp;
  Checkbox c1, c2;

  public void init() {
    t1 = new TextField(20);
    add(t1);
    String val1 = t1.getText();

    l1 = new Label("Type a number");
    add(l1);

    l2 = new Label("Result");

    t2 = new TextField(20);
    add(t2);
    String val2 = t2.getText();

    chgp = new CheckboxGroup();

    c1 = new Checkbox("Double", false, chgp);
    add(c1);
    c1.addItemListener(this);

    c2 = new Checkbox("Square", false, chgp);
    add(c2);
    c2.addItemListener(this);
  }
```

```java
    public void itemStateChanged(ItemEvent i) {
        if (i.getItemSelectable() == c1) {
            int v1 = Integer.parseInt(t1.getText());
            //double d = v1;
            //t2.setText(String.valueOf(d));

            t2.setText(String.valueOf(v1 + v1));
        }

        if (i.getSource() == c2) {
            int v1 = Integer.parseInt(t1.getText());
            t2.setText(String.valueOf(v1 * v1));
        }
    }
}
```

IceCram

```java
import java.awt.*;
import java.awt.event.ItemEvent;
import java.awt.event.ItemListener;
import java.awt.event.WindowAdapter;
import java.awt.event.WindowEvent;
import javax.xml.soap.Text;

public class IceCreamBill extends Frame {

    IceCreamBill() {
        setTitle("ICE CREAM BILL");
        Choice choice = new Choice();
        choice.addItem("Choco-Chip Flavour-120");
        choice.addItem("Coconut Flavour-105");
        choice.addItem("Vanilla Flavour-80");

        add(choice);

        Label label = new Label("Quantity:");
        TextField textField = new TextField();
        add(label);
        add(textField);

        TextField textField1 = new TextField();
        Label label1 = new Label("Total:");
        add(label1);
        add(textField1);

        setVisible(true);
        setSize(400, 400);
```

```java
    setLayout(new FlowLayout());

    choice.addItemListener(
      new ItemListener() {
        @Override
        public void itemStateChanged(ItemEvent e) {
          int index = choice.getSelectedIndex();
          int quantity = Integer.parseInt(textField.getText());

          if (index == 0) {
            int total = 120 * quantity;
            textField1.setText(Integer.toString(total));
          } else if (index == 1) {
            int total = 105 * quantity;
            textField1.setText(Integer.toString(total));
          } else if (index == 2) {
            int total = 80 * quantity;
            textField1.setText(Integer.toString(total));
          }
        }
      }
    );
    addWindowListener(
      new WindowAdapter() {
        @Override
        public void windowClosing(WindowEvent e) {
          super.windowClosing(e);
          dispose();
        }
      }
    );
  }

  public static void main(String[] args) {
    IceCreamBill iceCreamBill = new IceCreamBill();
  }
}
```