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Create a Frame:

```
JFrame f=new JFrame("My Frame");
//         f.setSize(400,250);
//        f.setLocation(100,100);
         f.setBounds(100,100,800,500);
         f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
         f.setResizable(false);

         ImageIcon img=new ImageIcon("fb.png");
         f.setIconImage(img.getImage());

         Container c=f.getContentPane();
         //Color color=new Color(255,0,0);
         c.setBackground(Color.PINK);

f.setLayout(null);
f.setVisible(true);
```

JLabel(SetText, SetFont,use image in jLabel)

```
JLabel label=new JLabel("UserName:");
         label.setBounds(100,50,100,30);
         c.add(label);
         label.setText("Password");
         Font font=new Font("Arial",Font.PLAIN,20);
         label.setFont(font);

//          ImageIcon icon=new ImageIcon("fb.png");
//         JLabel label=new JLabel(icon);
//         label.setBounds(100,50,100,30);
//
label.setBounds(50,50,icon.getIconWidth(),icon.getIconHeight());
//         c.add(label);

//
//         JLabel label=new JLabel("User",icon,JLabel.CENTER);
//         label.setBounds(0,100,500,100);
//         c.add(label);
```

JTextField(setText,setFont,setBackGround,setForground,setEditalble)

```
TextField textField=new TextField();
textField.setBounds(100,100,400,30);
c.add(textField);

textField.setText("User Name");
Font font=new Font("Arial",Font.BOLD,20);
```

```
textField.setFont(font);
textField.setForeground(Color.GREEN);
textField.setBackground(Color.YELLOW);
textField.setEditable(false);
```

JpasswordField (setEchoChar,hide/show password)

```
JPasswordField passwordField=new JPasswordField();
passwordField.setBounds(100,100,250,20);
c.add(passwordField);

passwordField.setText("12345");
passwordField.setEditable(false);
passwordField.setFont(new Font("Arial",Font.PLAIN,20));

passwordField.setEchoChar('*');
passwordField.setEchoChar((char)0);
```

JButton(setFont,setText,setForground,setBackground,setCursor,setEnabled,setVisible,Use image in button)

```
JButton button=new JButton("Click Me");
        button.setBounds(300,250,150,40);
        c.add(button);

        button.setFont(new Font("Arial",Font.BOLD,20));
        button.setText("Now Click");

        button.setForeground(Color.RED);
        button.setBackground(Color.YELLOW);

        button.setCursor(new Cursor(Cursor.HAND_CURSOR));

//        button.setEnabled(false);
//        button.setVisible(false);


        /*ImageIcon imageIcon=new ImageIcon("fb.png");
        JButton button=new JButton(imageIcon);

button.setSize(imageIcon.getIconWidth(),imageIcon.getIconHeight());
        button.setLocation(300,200);
        c.add(button);*/
```

JButtonEvent(actionListener,actionPermormed,addActionListener)

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

class Main extends JFrame implements ActionListener{

		JButton button;
		Container c;
		Main(){
		c=this.getContentPane();
		c.setLayout(null);
		button=new JButton("Click Me");
		button.setSize(100,40);
		button.setLocation(300,200);
		c.add(button);
		button.addActionListener(this);
		}
		public void actionPerformed(ActionEvent e){
		c.setBackground(Color.YELLOW);
	}

	}



class Demo{
	public static void main(String[] args){
		Main main=new Main();
		main.setSize(800,450);
		main.setLocation(100,100);
		main.setTitle("My Frame");
		main.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		main.setResizable(false);
		main.setVisible(true);
	}
}
```

JButton Event(Multiple Button Event,handling,getSource)

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

class Main extends JFrame implements ActionListener{

		JButton button1;
```

```
		JButton button2;
		JButton button3;
		Container c;
		Main(){
		c=this.getContentPane();
		c.setLayout(null);

		button1=new JButton("Red");
		button2=new JButton("Yellow");
		button3=new JButton("Green");

		button1.setBounds(100,100,100,50);
		button2.setBounds(250,100,100,50);
		button3.setBounds(400,100,100,50);

		c.add(button1);
		c.add(button2);
		c.add(button3);

		button1.addActionListener(this);
		button2.addActionListener(this);
		button3.addActionListener(this);
		}
		public void actionPerformed(ActionEvent e){
		if(e.getSource()==button1){
			c.setBackground(Color.RED);
		}
		if(e.getSource()==button2){
			c.setBackground(Color.YELLOW);
		}
		if(e.getSource()==button3){
			c.setBackground(Color.GREEN);
		}
	}

	}



class Demo{
	public static void main(String[] args){
		Main main=new Main();
		main.setSize(800,450);
		main.setLocation(100,100);
		main.setTitle("My Frame");
		main.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		main.setResizable(false);
		main.setVisible(true);
```

```
	}
}
```

JButton Event(Event Handling Using anonymous inner Class)

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

public class Main{

		public static void main(String[] args){
		JFrame frame=new JFrame();
		frame.setSize(800,450);
		frame.setLocation(100,100);
		frame.setTitle("My Frame");
		frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		frame.setResizable(false);
		frame.setLayout(null);
		frame.setVisible(true);

		JButton button1=new JButton("Red");
		button1.setBounds(100,100,100,50);
		frame.add(button1);

		button1.addActionListener(new ActionListener(){
			public void actionPerformed(ActionEvent e){
				frame.setBackground(Color.RED);
			}
		});

	}
}
```

JButton (Event Handling Using another class)

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

class Main{

		public static Container c;
		public static void main(String[] args){
		JFrame frame=new JFrame();
		frame.setSize(800,450);
```

```
                frame.setLocation(100,100);
                frame.setTitle("My Frame");
                frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
                frame.setResizable(false);
                frame.setVisible(true);

                c=frame.getContentPane();
                c.setLayout(null);

                JButton button1=new JButton("Red");
                JButton button2=new JButton("Yellow");
                JButton button3=new JButton("Green");

                button1.setBounds(100,100,100,50);
                button2.setBounds(250,100,100,50);
                button3.setBounds(400,100,100,50);

                c.add(button1);
                c.add(button2);
                c.add(button3);

                button1.addActionListener(new RedClass());
                button2.addActionListener(new YellowClass());
                button3.addActionListener(new GreenClass());

        }
}

class RedClass implements ActionListener{
        public void actionPerformed(ActionEvent e){
                Main.c.setBackground(Color.RED);
        }
}
class YellowClass implements ActionListener{
        public void actionPerformed(ActionEvent e){
                Main.c.setBackground(Color.YELLOW);
        }
}
class GreenClass implements ActionListener{
        public void actionPerformed(ActionEvent e){
                Main.c.setBackground(Color.GREEN);
        }
}
```

JtextArea(setText,setFont,setEditable,setLinewrap)

```
import javax.swing.*;
```

```
import java.awt.*;

public class Main{
	public static void main(String[] args){
	JFrame frame=new JFrame("My Frame");
	frame.setBounds(100,100,800,450);
	frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
	frame.setResizable(false);

	Container c=frame.getContentPane();
	c.setLayout(null);

	JTextArea textarea=new JTextArea();
	textarea.setBounds(100,100,300,200);
	c.add(textarea);
	c.setBackground(Color.YELLOW);

	textarea.setText("This is a text Area");
	//textarea.setEditable(false);
	textarea.setFont(new Font("Arial",Font.BOLD,20));
	textarea.setLineWrap(true);

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

JRadioButton(setFont,setEnabled,buttonGroup,already selected radio button,setSelected)

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

public class Main{
	public static void main(String[] args){
	JFrame frame=new JFrame("My Frame");
	frame.setBounds(100,100,800,450);
	frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
	frame.setResizable(false);

	Container c=frame.getContentPane();
	c.setLayout(null);

	JRadioButton radiobutton1=new JRadioButton("Male");
	radiobutton1.setBounds(100,50,100,20);
	c.add(radiobutton1);
	radiobutton1.setSelected(true);
```

```
        JRadioButton radiobutton2=new JRadioButton("Female");
        radiobutton2.setBounds(250,50,100,20);
        c.add(radiobutton2);

        ButtonGroup gender=new ButtonGroup();
        gender.add(radiobutton1);
        gender.add(radiobutton2);

        JRadioButton gen=new JRadioButton("General");
        JRadioButton obc=new JRadioButton("obc");
        JRadioButton sc=new JRadioButton("sc");
        JRadioButton st=new JRadioButton("st");

        gen.setBounds(100,100,100,20);
        obc.setBounds(200,100,100,20);
        sc.setBounds(300,100,100,20);
        st.setBounds(400,100,100,20);

        c.add(gen);
        c.add(obc);
        c.add(sc);
        c.add(st);

        obc.setEnabled(false);


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

JCheckBox(setEnables,setSelected,setFont)

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

public class Main{
        public static void main(String[] args){
        JFrame frame=new JFrame("My Frame");
        frame.setBounds(100,100,800,450);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setResizable(false);

        Container c=frame.getContentPane();
        c.setLayout(null);

        JCheckBox checkbox1=new JCheckBox("High School");
```

```
        JCheckBox checkbox2=new JCheckBox("Intermediate");
        JCheckBox checkbox3=new JCheckBox("Graduate");
        JCheckBox checkbox4=new JCheckBox("post-Graduate");

        checkbox1.setBounds(100,50,120,20);
        checkbox2.setBounds(100,100,120,20);
        checkbox3.setBounds(100,150,120,20);
        checkbox4.setBounds(100,200,120,20);

        c.add(checkbox1);
        c.add(checkbox2);
        c.add(checkbox3);
        c.add(checkbox4);

        checkbox1.setSelected(true);
        checkbox4.setEnabled(false);



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

JComboBox(setEnabled,setSelectedIndex,setSelectedItem,setFont,getSelectedIndex,getSelectedItem,additem,remove item)

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

public class Main{
        public static void main(String[] args){
        JFrame frame=new JFrame("My Frame");
        frame.setSize(700,500);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setResizable(false);

        Container c=frame.getContentPane();
        c.setLayout(null);

        String[] Months={"January","February","March","April","May","June"};
        JComboBox month=new JComboBox(Months);
        month.setBounds(100,100,100,30);
        c.add(month);

        //month.setEditable(true);
```

```
        //month.setSelectedItem("March");
        //month.setSelectedIndex(3);

        JButton button=new JButton("OK");
        button.setBounds(300,100,100,30);
        c.add(button);

        JLabel label=new JLabel("");
        label.setBounds(100,300,100,30);
        c.add(label);

        month.addItem("July");
        month.removeItem("April");

        button.addActionListener(new ActionListener(){
                public void actionPerformed(ActionEvent e){
                        String item=(String) month.getSelectedItem();
                        //String item=String.valueOf(month.getSelectedIndex());
                        label.setText(item);
                }
        });




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

JMenuBar(MenuBar,Menus,MenuItems)

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

public class Main{
        public static void main(String[] args){
        JFrame frame=new JFrame("My Frame");
        frame.setSize(700,500);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setResizable(false);

        Container c=frame.getContentPane();
        c.setLayout(null);
```

```
        JMenuBar menubar=new JMenuBar();
        JMenu file=new JMenu("File");
        JMenu edit=new JMenu("Edit");
        JMenu search=new JMenu("Search");
        JMenu view=new JMenu("View");


        JMenuItem i1=new JMenuItem("New");
        JMenuItem i2=new JMenuItem("Open");
        JMenuItem i3=new JMenuItem("Sava");

        JMenuItem i4=new JMenuItem("Undo");
        JMenuItem i5=new JMenuItem("Redo");

        file.add(i1);
        file.add(i2);
        file.add(i3);

        edit.add(i4);
        edit.add(i5);

        menubar.add(file);
        file.add(edit);
        menubar.add(search);
        menubar.add(view);
        frame.setJMenuBar(menubar);

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

Action Listener

ActionEvent (on Button)

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


class MyFrame extends JFrame implements ActionListener{
        Container c;
        JButton button;
        MyFrame(){
                c=this.getContentPane();
                c.setLayout(null);
```

```
                button=new JButton("Click Me");
                button.setBounds(300,200,100,50);
                c.add(button);
                button.addActionListener(this);
        }

        public void actionPerformed(ActionEvent e){
                String str=button.getText();
                button.setText(str.toUpperCase());
        }
}

class Main {
        public static void main(String[] args){
        MyFrame a=new MyFrame();
        a.setSize(700,500);
        a.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        a.setResizable(false);
        a.setVisible(true);

        }
}
```

ActionEvent (On TextField)

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


class MyFrame extends JFrame implements ActionListener{
        Container c;
        JTextField textfield;
        MyFrame(){
                c=this.getContentPane();
                c.setLayout(null);


                textfield=new JTextField();
                textfield.setBounds(100,100,300,50);
                c.add(textfield);
                textfield.addActionListener(this);
        }

        public void actionPerformed(ActionEvent e){
                String str=textfield.getText();
```

```
                    textfield.setText(str.toUpperCase());
        }
}

class Main {
        public static void main(String[] args){
        MyFrame a=new MyFrame();
        a.setSize(700,500);
        a.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        a.setResizable(false);
        a.setVisible(true);

        }
}
```

ActionEvent(On MenuBar)

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

class MyFrame extends JFrame implements ActionListener{
        Container c;
        JMenuBar menubar;
        JMenu file,edit,search,view;
        JMenuItem i1,i2,i3,i4,i5;
        JTextArea area;

        MyFrame(){
        c=getContentPane();
        c.setLayout(null);

        menubar=new JMenuBar();
        file=new JMenu("File");
        edit=new JMenu("Edit");
        search=new JMenu("Search");
        view=new JMenu("View");


        i1=new JMenuItem("New");
        i2=new JMenuItem("Open");
        i3=new JMenuItem("Sava");

        i4=new JMenuItem("Undo");
        i5=new JMenuItem("Redo");

        file.add(i1);
        file.add(i2);
```

```
        file.add(i3);

        edit.add(i4);
        edit.add(i5);

        menubar.add(file);
        file.add(edit);
        menubar.add(search);
        menubar.add(view);
        setJMenuBar(menubar);

        area=new JTextArea();
        area.setBounds(20,20,400,300);
        c.add(area);
        area.setFont(new Font("Arial",Font.BOLD,20));

        i1.addActionListener(this);
        i2.addActionListener(this);
        i3.addActionListener(this);
        i4.addActionListener(this);
        i5.addActionListener(this);
        }

        public void actionPerformed(ActionEvent e){
                if(e.getSource()==i1){
                        area.setText("New File....");
                }
                if(e.getSource()==i2){
                        area.setText("Open File....");
                }
                if(e.getSource()==i3){
                        area.setText("Sava File....");
                }
                if(e.getSource()==i4){
                        area.setText("Undo File....");
                }
                if(e.getSource()==i5){
                        area.setText("Reno File....");
                }

        }
}
class Main{
        public static void main(String[] args){
        MyFrame frame=new MyFrame();
        frame.setSize(700,500);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setResizable(false);
```

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

Item Listener:

ItemEvent (On ComboBox)

```
package Swing;

import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
public class MyFrame extends JFrame implements ItemListener{
      Container c;
      JComboBox combobox;
      String[] Values=
{"Monday","Tuesday","Wednesday","Thusday","Friday","Saturday","Sunday"};
      JTextArea area;

      MyFrame(){
            setTitle("My Frame");
            setBounds(100,100,700,400);
            setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
            setResizable(false);
            c=getContentPane();
            c.setLayout(null);

            combobox=new JComboBox(Values);
            combobox.setBounds(100,100,100,30);
            c.add(combobox);

            area=new JTextArea();
            area.setBounds(300,100,200,200);
            c.add(area);

            combobox.addItemListener(this);

            setVisible(true);
      }

      @Override
      public void itemStateChanged(ItemEvent e) {
            String str=combobox.getSelectedItem().toString();
            area.setText(str);
      }
```

```
}

public class Demo {

	public static void main(String[] args) {
		MyFrame frame=new MyFrame();

	}

}
```

ItemEvent (On RadioButton)

```
package Swing;

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

public class MyFrame extends JFrame implements ItemListener{
	Container c;
	JRadioButton male,female;
	ButtonGroup bg;
	JTextArea area;

	MyFrame(){
		setTitle("My Frame");
		setBounds(100,100,700,400);
		setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		setResizable(false);
		c=getContentPane();
		c.setLayout(null);

		male=new JRadioButton("Male");
		male.setBounds(100,50,100,20);
		c.add(male);
		female=new JRadioButton("Male");
		female.setBounds(100,100,100,20);
		c.add(female);

		bg=new ButtonGroup();
		bg.add(male);
		bg.add(female);

		area=new JTextArea();
		area.setBounds(300,50,200,200);
		c.add(area);

		male.addItemListener(this);
		female.addItemListener(this);
```

```
            setVisible(true);
      }


         @Override public void itemStateChanged(ItemEvent e) {
               if(e.getSource()==male) {
                     area.setText("Male is Selected");
               }
               if(e.getSource()==female) {
                     area.setText("Female is selected");
               }

         }

}

public class Demo {

      public static void main(String[] args) {
            MyFrame frame=new MyFrame();

      }

}
```

ItemEvent (on CheckBox)

```
package Swing;

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

public class MyFrame extends JFrame implements ItemListener{
      Container c;
      JCheckBox b1,b2,b3,b4;
      JTextArea area;

      MyFrame(){
            setTitle("My Frame");
            setBounds(100,100,700,400);
            setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
            setResizable(false);
            c=getContentPane();
            c.setLayout(null);

            b1=new JCheckBox("Matric");
            b1.setBounds(100,50,100,20);
            c.add(b1);
```

```
            b2=new JCheckBox("InterMediate");
            b2.setBounds(100,100,100,20);
            c.add(b2);
            b3=new JCheckBox("Graduate");
            b3.setBounds(100,150,100,20);
            c.add(b3);
            b4=new JCheckBox("PostGraduate");
            b4.setBounds(100,200,100,20);
            c.add(b4);


            area=new JTextArea();
            area.setBounds(300,50,200,200);
            c.add(area);

            b1.addItemListener(this);
            b2.addItemListener(this);
            b3.addItemListener(this);
            b4.addItemListener(this);

            setVisible(true);
      }


         @Override public void itemStateChanged(ItemEvent e) {
               if(b1.isSelected()) {
                     area.setText("Matric");
               }
               if(b2.isSelected()) {
                     area.setText(area.getText()+"\n"+"InterMediate");
               }
               if(b3.isSelected()) {
                     area.setText(area.getText()+"\n"+"Graduate");
               }
               if(b4.isSelected()) {
                     area.setText(area.getText()+"\n"+"Post Graduate");
               }

         }

}

public class Demo {

      public static void main(String[] args) {
            MyFrame frame=new MyFrame();

      }

}
```

ItemListener (CheckBoxMenuItem)

```
package Swing;

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

public class MyFrame extends JFrame implements ItemListener{
	Container c;
	JMenuBar menubar;
	JMenu file;
	JCheckBoxMenuItem m1;
	JTextArea area;

	MyFrame(){
		setTitle("My Frame");
		setBounds(100,100,700,400);
		setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		setResizable(false);
		c=getContentPane();
		c.setLayout(null);

		menubar=new JMenuBar();
		file=new JMenu("File");
		m1=new JCheckBoxMenuItem("Print");
		file.add(m1);
		menubar.add(file);
		this.setJMenuBar(menubar);

		area=new JTextArea();
		area.setBounds(300,50,200,200);
		c.add(area);

		m1.addItemListener(this);

		setVisible(true);
	}


	   @Override public void itemStateChanged(ItemEvent e) {

			if(m1.isSelected()) {
				area.setText("Print Is ON");
			}
			else {
				area.setText("Print is OFF");
			}
		}
```

```
}

public class Demo {

	public static void main(String[] args) {
		MyFrame frame=new MyFrame();

	}

}
```

Key Listener(typed,pressed,released)

```
package Swing;

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

public class MyFrame extends JFrame implements KeyListener{
	Container c;
	JTextArea area;

	MyFrame(){
		setTitle("My Frame");
		setBounds(100,100,700,400);
		setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		setResizable(false);
		c=getContentPane();
		c.setLayout(null);



		area=new JTextArea();
		area.setBounds(100,20,500,300);
		c.add(area);

		area.addKeyListener(this);

		setVisible(true);
	}

	@Override
	public void keyTyped(KeyEvent e) {
		area.setText(area.getText()+"\n"+"Key Is Typed   ....");
	}
```

```
	@Override
	public void keyPressed(KeyEvent e) {
		area.setText(area.getText()+"\n"+"Key is Pressed
...."+e.getKeyChar());
	}
	@Override
	public void keyReleased(KeyEvent e) {
		area.setText(area.getText()+"\n"+"Key is Released
...."+e.getKeyChar());

	}
}

public class Demo {

	public static void main(String[] args) {
		MyFrame frame=new MyFrame();

	}

}
```

MouseListener (mouseEntered,exit,pressed,clicked,released)

```
package Swing;

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

public class MyFrame extends JFrame implements MouseListener{
	Container c;
	JTextArea area;
	JLabel label;

	MyFrame(){
		setTitle("My Frame");
		setBounds(100,100,700,400);
		setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		setResizable(false);
		c=getContentPane();
		c.setLayout(null);

		area=new JTextArea();
		area.setBounds(200,20,300,200);
```

```
            c.add(area);

            label=new JLabel("My Label");
            label.setBounds(50,50,100,100);
            c.add(label);

            label.addMouseListener(this);

            setVisible(true);
      }

      @Override
      public void mouseClicked(MouseEvent e) {
            area.setText(area.getText()+"\n"+"Mouse is Clicked");
      }

      @Override
      public void mousePressed(MouseEvent e) {
            area.setText(area.getText()+"\n"+"Mouse is Pressed");

      }

      @Override
      public void mouseReleased(MouseEvent e) {

            area.setText(area.getText()+"\n"+"Mouse is Released");
      }

      @Override
      public void mouseEntered(MouseEvent e) {

            area.setText(area.getText()+"\n"+"Mouse is Entered");
      }

      @Override
      public void mouseExited(MouseEvent e) {
            area.setText(area.getText()+"\n"+"Mouse is Exited");

      }

}

public class Demo {

      public static void main(String[] args) {
            MyFrame frame=new MyFrame();

      }

}
```

MouseMotionListener(mouseMoved,Dreaged)

```
package Swing;

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

public class MyFrame extends JFrame implements MouseMotionListener{
	Container c;
	JTextArea area;
	JLabel label;

	MyFrame(){
		setTitle("My Frame");
		setBounds(100,100,700,400);
		setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		setResizable(false);
		c=getContentPane();
		c.setLayout(null);

		area=new JTextArea();
		area.setBounds(200,20,300,200);
		c.add(area);

		label=new JLabel("My Label");
		label.setBounds(50,50,100,100);
		c.add(label);

		label.addMouseMotionListener(this);
		setVisible(true);
	}

	@Override
	public void mouseDragged(MouseEvent e) {
		area.setText(area.getText()+"\n"+"Mouse is Dreagged");

	}

	@Override
	public void mouseMoved(MouseEvent e) {
		area.setText(area.getText()+"\n"+"Mouse is Moved");

	}


}
```

```
public class Demo {

	public static void main(String[] args) {
		MyFrame frame=new MyFrame();

	}

}
```

FocusListener(FocusGained,Lost)

```
package Swing;

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

public class MyFrame extends JFrame implements FocusListener{
	Container c;
	JTextArea area;
	JTextField textfield;

	MyFrame(){
		setTitle("My Frame");
		setBounds(100,100,700,400);
		setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		setResizable(false);
		c=getContentPane();
		c.setLayout(null);

		area=new JTextArea();
		area.setBounds(200,20,300,200);
		c.add(area);

		textfield=new JTextField();
		textfield.setBounds(50,50,100,20);
		c.add(textfield);

		textfield.addFocusListener(this);
		setVisible(true);
	}

	@Override
	public void focusGained(FocusEvent e) {
		area.setText(area.getText()+"\n"+"Focus Gained");
```

```
	}

	@Override
	public void focusLost(FocusEvent e) {

		area.setText(area.getText()+"\n"+"Focus Lost");
	}



}


public class Demo {

	public static void main(String[] args) {
		MyFrame frame=new MyFrame();

	}

}
```

WindowListener (Window open,closing,close,iconified,deiconified,activated,deactivated)

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

public class GUI extends JFrame implements
WindowListener {
    GUI(){
        setBounds(100,100,400,300);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setTitle("My Frame");
        Container c=getContentPane();
        c.setBackground(Color.LIGHT_GRAY);
        setResizable(false);
        this.addWindowListener(this);
        setLayout(null);
```

```
        setVisible(true);
    }
    @Override
    public void windowOpened(WindowEvent e) {
        System.out.println("Window is Opened");
    }

    @Override
    public void windowClosing(WindowEvent e) {
        System.out.println("Window is Closing");
    }

    @Override
    public void windowClosed(WindowEvent e) {
        System.out.println("Window is Closed");
    }

    @Override
    public void windowIconified(WindowEvent e) {
        System.out.println("Window is Iconified");
    }

    @Override
    public void windowDeiconified(WindowEvent e) {
        System.out.println("Window is DeIconified");
    }

    @Override
    public void windowActivated(WindowEvent e) {
        System.out.println("Window is Activated");
    }

    @Override
    public void windowDeactivated(WindowEvent e) {
        System.out.println("Window is Deactivated");
    }


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

```
}
```

Layouts

Null Layout

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

public class GUI extends JFrame{
    JButton b1,b2,b3,b4,b5,b6;
    Container c;
    GUI(){
        setBounds(100,100,600,300);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setTitle("My Frame");
        setLocationRelativeTo(null);
        setResizable(false);
        c=getContentPane();
        c.setBackground(Color.LIGHT_GRAY);
        c.setLayout(null);
        setVisible(true);
        init();
        setComponents();
        addComponents();
    }
    public void init(){
        b1=new JButton("Button 1");
        b2=new JButton("Button 2");
        b3=new JButton("Button 3");
        b4=new JButton("Button 4");
        b5=new JButton("button 5");
        b6=new JButton("Button 6");
    }
    public void setComponents(){
```

```
        b1.setBounds(10,10,100,40);
        b2.setBounds(140,10,100,40);
        b3.setBounds(280,10,100,40);
        b4.setBounds(420,10,100,40);

        b5.setBounds(10,70,100,40);
        b6.setBounds(140,70,100,40);
    }

    public void addComponents(){
        c.add(b1);
        c.add(b2);
        c.add(b3);
        c.add(b4);
        c.add(b5);
        c.add(b6);
    }

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


}
```

Bordered LayOut

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

public class GUI extends JFrame{
    JButton b1,b2,b3,b4,b5;
    Container c;
    GUI(){
        setBounds(100,100,600,300);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setTitle("My Frame");
        setLocationRelativeTo(null);
        setResizable(false);
        c=getContentPane();
```

```
        c.setBackground(Color.LIGHT_GRAY);

        BorderLayout borderLayout=new
BorderLayout(10,5);
//        borderLayout.setHgap(10);
//        borderLayout.setVgap(5);
        c.setLayout(borderLayout);
        init();
        addComponents();

        setVisible(true);
    }
    public void init(){
        b1=new JButton("Page Start");
        b2=new JButton("Page End");
        b3=new JButton("Line Start");
        b4=new JButton("Line End");
        b5=new JButton("Center");
    }

    public void addComponents(){
        c.add(b1,BorderLayout.PAGE_START);
        c.add(b2,BorderLayout.PAGE_END);
        c.add(b3,BorderLayout.LINE_START);
        c.add(b4,BorderLayout.LINE_END);
        c.add(b5,BorderLayout.CENTER);
    }

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


}
```

Flow Layout

```
import javax.swing.*;
import java.awt.*;
import java.util.concurrent.Flow;
```

```
public class GUI extends JFrame{
    JButton b1,b2,b3,b4,b5;
    Container c;
    GUI(){
        setBounds(100,100,600,300);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setTitle("My Frame");
        setLocationRelativeTo(null);
//        setResizable(false);
        c=getContentPane();
        c.setBackground(Color.LIGHT_GRAY);

        FlowLayout flowLayout=new
FlowLayout(FlowLayout.CENTER,20,20);
        c.setLayout(flowLayout);
        init();
        addComponents();

        setVisible(true);
    }
    public void init(){
        b1=new JButton("Button 1");
        b2=new JButton("Button 2");
        b3=new JButton("Button 3");
        b4=new JButton("Button 4");
        b5=new JButton("Button 5");
    }

    public void addComponents(){
        c.add(b1);
        c.add(b2);
        c.add(b3);
        c.add(b4);
        c.add(b5);
    }

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

```
}
```

Grid Layout

```
import javax.swing.*;
import java.awt.*;
import java.util.concurrent.Flow;

public class GUI extends JFrame{
    JButton b1,b2,b3,b4,b5;
    Container c;
    GUI(){
        setBounds(100,100,600,300);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setTitle("My Frame");
        setLocationRelativeTo(null);
//          setResizable(false);
        c=getContentPane();
        c.setBackground(Color.LIGHT_GRAY);

        GridLayout gridLayout=new GridLayout(2,3,10,20);
        c.setLayout(gridLayout);
        init();
        addComponents();

        setVisible(true);
    }
    public void init(){
        b1=new JButton("Button 1");
        b2=new JButton("Button 2");
        b3=new JButton("Button 3");
        b4=new JButton("Button 4");
        b5=new JButton("Button 5");
    }

    public void addComponents(){
        c.add(b1);
        c.add(b2);
        c.add(b3);
```

```
        c.add(b4);
        c.add(b5);
    }

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


}
```

GridBag Layout

```
import javax.swing.*;
import java.awt.*;
import java.util.concurrent.Flow;

public class GUI extends JFrame{
    JButton b1,b2,b3,b4,b5;
    Container c;
    GUI(){
        setBounds(100,100,600,300);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setTitle("My Frame");
        setLocationRelativeTo(null);
//          setResizable(false);
        c=getContentPane();
        c.setBackground(Color.LIGHT_GRAY);

        GridBagLayout gridBagLayout=new GridBagLayout();
        c.setLayout(gridBagLayout);
        init();
        GridBagConstraints gridBagConstraints=new
GridBagConstraints();


gridBagConstraints.fill=GridBagConstraints.HORIZONTAL;
        gridBagConstraints.weightx=0.5; //request for
extra available space for horizantal
        gridBagConstraints.gridx=0;
```

```
        gridBagConstraints.gridy=0;
        c.add(b1,gridBagConstraints);

        gridBagConstraints.weightx=0;   //reset
        gridBagConstraints.gridx=1;
        gridBagConstraints.gridy=0;
        c.add(b2,gridBagConstraints);

        gridBagConstraints.gridx=2;
        gridBagConstraints.gridy=0;
        c.add(b3,gridBagConstraints);

        gridBagConstraints.gridwidth=3;
        gridBagConstraints.gridx=0;
        gridBagConstraints.gridy=1;
        gridBagConstraints.ipady=40;
        c.add(b4,gridBagConstraints);

        gridBagConstraints.gridwidth=2;
        gridBagConstraints.gridx=1;
        gridBagConstraints.gridy=2;
        gridBagConstraints.ipady=0;

gridBagConstraints.anchor=GridBagConstraints.PAGE_END;
        gridBagConstraints.weighty=1;
        c.add(b5,gridBagConstraints);



        pack();

        setVisible(true);
    }
    public void init(){
        b1=new JButton("Button 1");
        b2=new JButton("Button 2");
        b3=new JButton("Button 3");
        b4=new JButton("Button 4");
        b5=new JButton("Button 5");
    }

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

```
        new GUI();
    }


}
```

JPanel

```
import javax.swing.*;
import java.awt.*;
import java.util.concurrent.Flow;

public class GUI extends JFrame{
    JButton b1,b2,b3,b4,b5;
    Container c;
    GUI(){
        setBounds(100,100,800,600);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setTitle("My Frame");
        setLocationRelativeTo(null);
//          setResizable(false);
        c=getContentPane();
        c.setLayout(null);
        c.setBackground(Color.LIGHT_GRAY);

        JPanel panel=new JPanel();
        panel.setBounds(0,0,300,300);
        panel.setLayout(null);
        c.add(panel);

        JPanel panel2=new JPanel();
        panel2.setBounds(0,0,200,100);
        panel2.setBackground(Color.YELLOW);
        panel.add(panel2);

        JButton button=new JButton("Button");
        panel2.add(button);

        setVisible(true);
```

```
    }

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


}
```

JOptionPane

Show Input Diolog

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


public class GUI extends JFrame implements
ActionListener {
    JButton b1;
    Container c;
    GUI(){
        setBounds(100,100,800,600);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setTitle("My Frame");
        setLocationRelativeTo(null);
//          setResizable(false);
        c=getContentPane();
        c.setLayout(new FlowLayout());
        c.setBackground(Color.LIGHT_GRAY);
        b1=new JButton("Button");
        c.add(b1);

        setVisible(true);
        b1.addActionListener(this);
    }
```

```
    @Override
    public void actionPerformed(ActionEvent e){
        String str=JOptionPane.showInputDialog("Enter
Your Name");
        if(str.length()>0)
            System.out.println("The Name is: "+str);
    }

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

Show Message Diolog (plain,ques,info,error,warning)

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


public class GUI {
    public static void main(String[] args) {
        JFrame frame=new JFrame("My Frame");
        frame.setBounds(100,100,800,600);

frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        frame.setLayout(new FlowLayout());
        frame.setBackground(Color.LIGHT_GRAY);
        JButton b1=new JButton("Plain");
        JButton b2=new JButton("Info");
        JButton b3=new JButton("Ques");
        JButton b4=new JButton("Error");
        JButton b5=new JButton("Warning");
        frame.add(b1);
        frame.add(b2);
        frame.add(b3);
```

```
        frame.add(b4);
        frame.add(b5);

        frame.setVisible(true);
        b1.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {

JOptionPane.showMessageDialog(frame,"This is a plain
Message","Message",JOptionPane.PLAIN_MESSAGE);
            }
        });
        b2.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {

JOptionPane.showMessageDialog(frame,"This is a
Information
Message","Message",JOptionPane.INFORMATION_MESSAGE);
            }
        });
        b3.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
            JOptionPane.showMessageDialog(frame,"This is
a Question
Message","Message",JOptionPane.QUESTION_MESSAGE);
            }
        });
        b4.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {

JOptionPane.showMessageDialog(frame,"This is a Error
Message","Message",JOptionPane.ERROR_MESSAGE);
            }
        });
        b5.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {

JOptionPane.showMessageDialog(frame,"This is a Warning
```

```
Message","Message",JOptionPane.WARNING_MESSAGE);
                }
            });
    }


}
```

Show Confirm Diolog

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


public class GUI {
    public static void main(String[] args) {
        JFrame frame=new JFrame("My Frame");
        frame.setBounds(100,100,800,600);

frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        frame.setLayout(new FlowLayout());
        frame.setBackground(Color.LIGHT_GRAY);
        JButton b1=new JButton("Button");

        frame.add(b1);
        frame.setVisible(true);
        b1.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
                int
sel=JOptionPane.showConfirmDialog(frame,"Do you Want To
Exit","Conferm",JOptionPane.YES_NO_CANCEL_OPTION,JOption
Pane.QUESTION_MESSAGE);
                if(sel==JOptionPane.YES_OPTION){
                    System.out.println("Yes Is
Selected");
                    System.exit(0);
                }
```

```
                else
                if(sel==JOptionPane.NO_OPTION){
                    System.out.println("No Is
Selected");
                }
                else
                if(sel==JOptionPane.CLOSED_OPTION){
                    System.out.println("Close Is
Selected");
                }
            }
        });
    }


}
```

JSpinner

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

public class GUI extends JFrame implements
ChangeListener {
    JFrame frame;
    JLabel label;
    JSpinner s1,s2,s3;
    SpinnerModel model1,model2,model3;
    String[]
month={"January","February","March","April","May","June"
,"July","August","September",
            "October","November","December"};

    GUI(){
```

```
        JFrame frame=new JFrame("My Frame");
        frame.setBounds(100,100,800,600);

frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setLayout(null);

        String str=String.valueOf(java.time.Year.now());
        int y=Integer.parseInt(str);

        model1=new SpinnerNumberModel(1,1,31,1);
        model2=new SpinnerListModel(month);
        model3=new SpinnerNumberModel(y,y-100,y,1);

        s1=new JSpinner(model1);
        s2=new JSpinner(model2);
        s3=new JSpinner(model3);

        s1.setBounds(20,20,100,30);
        s2.setBounds(160,20,100,30);
        s3.setBounds(300,20,100,30);

        frame.add(s1);
        frame.add(s2);
        frame.add(s3);

        s1.addChangeListener(this);
        s2.addChangeListener(this);
        s3.addChangeListener(this);

        label=new JLabel();
        label.setBounds(100,100,300,50);

        setDOB();
        frame.add(label);

        validate();
        frame.setVisible(true);
    }
    public void setDOB(){
        int day=(Integer) s1.getValue();
        int year=(Integer) s3.getValue();
        String month=(String) s2.getValue();
```

```
        label.setText("DOB is: "+day +" - " +month +" -
"+year);
    }
    public static void main(String[] args) {
        new GUI();
    }

    @Override
    public void stateChanged(ChangeEvent e) {
        setDOB();
    }
}
```