Object Oriented Programming –Assignment 02 (Java Swing Applications)

01. Create a Window with following features:

a. Window size is 300x300

b. The command for the default close operation button is shutting down the JVM. c. The title of the window is “My First Frame”.

```
import javax.swing.*;
class Demo{
	public static void main(String args[]){
		JFrame f1=new JFrame();
		f1.setSize(300,300);
		f1.setTitle("My First Frame");
		f1.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		f1.setLocationRelativeTo(null);
		f1.setVisible(true);
	}
}
```

02. Enhance the window created at exercise1 with the following features:

a. Title of the window is “Border Layout Window”

b. There are five JButtons as follows. (the default layout of the JFrame is BorderLayout)

```
import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
        private JButton southButton;
        private JButton westButton;
        private JButton eastButton;
        private JButton northButton;
        private JButton centerButton;
        private JTextField displayText;

        MyFrame(){
                setSize(300,300);
                setTitle("Border Layout Window");
                setDefaultCloseOperation(EXIT_ON_CLOSE);
                setLocationRelativeTo(null);

                southButton=new JButton();
                southButton.setText("South");
                southButton.setFont(new Font("",1,20));
                add("South",southButton);
```

```
        westButton=new JButton();
        westButton.setText("West");
        westButton.setFont(new Font("",1,20));
        add("West",westButton);

        eastButton = new JButton();
        eastButton.setText("East");
        eastButton.setFont(new Font("",1,20));
        add("East",eastButton);

        northButton=new JButton();
        northButton.setText("North");
        northButton.setFont(new Font("",1,20));
        add("North",northButton);

        centerButton=new JButton();
        centerButton.setText("Center");
        centerButton.setFont(new Font("",1,20));
        add("Center",centerButton);
    }
}
```

```
class Demo{
	public static void main(String args[]){
		new MyFrame().setVisible(true);
	}
}
```

03. Create a another Window with the following features:

a. Window size is 400x200

b. The command for the default close operation button is shutting down the JVM.

c. The title of the window is “Border Layout Window”.

```
import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
	private JLabel northLabel;
	private JLabel southLabel;

	private JTextField displayText;

	MyFrame(){
		setSize(400,200);
		setTitle("Boarder Layout Window");
```

```
            setDefaultCloseOperation(EXIT_ON_CLOSE);
            setLocationRelativeTo(null);

            JLabel northLabel=new JLabel("This is the North Border");

            northLabel.setHorizontalAlignment(JTextField.CENTER);
            northLabel.setFont(new Font("",1,20));
            add("North",northLabel);

            JLabel southLabel=new JLabel("This is the South Border");

            southLabel.setHorizontalAlignment(JTextField.CENTER);
            southLabel.setFont(new Font("",1,20));
            add("South",southLabel);

        }
}
class Demo{
        public static void main(String args[]){
            new MyFrame().setVisible(true);
        }
}
```

04. Develop the exercise 3 with the label font size and font

style are 30 and BOLD respectively. Class Font can be used to set a font to the label as

follows:

label.setFont(new Font(“”,1,20);

Font(String fontName, int fontStyle, int fontSize)

```
 import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
        private JLabel northLabel;
        private JLabel southLabel;

        private JTextField displayText;

        MyFrame(){
                setSize(400,200);
                setTitle("Boarder Layout Window");
                setDefaultCloseOperation(EXIT_ON_CLOSE);
                setLocationRelativeTo(null);

                JLabel northLabel=new JLabel("This is the North Border");

                northLabel.setHorizontalAlignment(JTextField.CENTER);
                northLabel.setFont(new Font("",1,30));
```

```
            add("North",northLabel);

            JLabel southLabel=new JLabel("This is the South Border");

            southLabel.setHorizontalAlignment(JTextField.CENTER);
            southLabel.setFont(new Font("",1,30));
            add("South",southLabel);

        }
}
class Demo{
        public static void main(String args[]){
            new MyFrame().setVisible(true);
        }
}
```

05. Using the “FlowLayout” write a java class to represent the following window:

```
import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
        private JButton button1;
        private JButton thisButton;
        private JButton button2;
```

```
private JButton execute;

private JTextField displayText;

MyFrame(){
        setSize(500,600);
        setTitle("Flow Layout Window");
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);
        setLayout(new FlowLayout());

        button1=new JButton();
        button1.setText("Button1");
        button1.setFont(new Font("",1,20));
        add(button1);

        thisButton=new JButton();
        thisButton.setText("This is a Button");
        thisButton.setFont(new Font("",1,20));
        add(thisButton);

        button2=new JButton();
```

```
            button2.setText("Button2");
            button2.setFont(new Font("",1,20));
            add(button2);

            execute=new JButton();
            execute.setText("Execute");
            execute.setFont(new Font("",1,20));
            add(execute);
        }
}
class Demo{
        public static void main(String args[]){
            new MyFrame().setVisible(true);
        }
}
```

06. Left alignment FlowLayout:

```
import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
        private JButton button1;
        private JButton thisButton;
        private JButton button2;
```

```
private JButton execute;

private JTextField displayText;

MyFrame(){
        setSize(500,600);
        setTitle("Flow Layout Window");
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);
        FlowLayout f1=new FlowLayout();
        f1.setAlignment(FlowLayout.LEFT);
        setLayout(f1);

        button1=new JButton();
        button1.setText("Button1");
        button1.setFont(new Font("",1,20));
        add(button1);

        thisButton=new JButton();
        thisButton.setText("This is a Button");
        thisButton.setFont(new Font("",1,20));
        add(thisButton);
```

```
            button2=new JButton();
            button2.setText("Button2");
            button2.setFont(new Font("",1,20));
            add(button2);

            execute=new JButton();
            execute.setText("Execute");
            execute.setFont(new Font("",1,20));
            add(execute);
        }
}
class Demo{
        public static void main(String args[]){
            new MyFrame().setVisible(true);
        }
}
```

07. Right alignment (FlowLayout):

```
import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
        private JButton button1;
```

```
private JButton thisButton;
private JButton button2;
private JButton execute;

private JTextField displayText;

MyFrame(){
        setSize(500,600);
        setTitle("Flow Layout Window");
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);
        FlowLayout f1=new FlowLayout();
        f1.setAlignment(FlowLayout.RIGHT);
        setLayout(f1);

        button1=new JButton();
        button1.setText("Button1");
        button1.setFont(new Font("",1,20));
        add(button1);

        thisButton=new JButton();
        thisButton.setText("This is a Button");
```

```
            thisButton.setFont(new Font("",1,20));
            add(thisButton);

            button2=new JButton();
            button2.setText("Button2");
            button2.setFont(new Font("",1,20));
            add(button2);

            execute=new JButton();
            execute.setText("Execute");
            execute.setFont(new Font("",1,20));
            add(execute);
        }
}
class Demo{
        public static void main(String args[]){
            new MyFrame().setVisible(true);
        }
}
```

08. Create a window with four Buttons which are contains in a two by two GridLayout. GridLayout(int rows, int columns)

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

```
import java.awt.*;
class MyFrame extends JFrame{
	private JButton button1;
	private JButton button2;
	private JButton button3;
	private JButton button4;
	private JTextField displayText;

	MyFrame(){
		setSize(400,400);
		setTitle("GridLayout window");
		setDefaultCloseOperation(EXIT_ON_CLOSE);
		setLocationRelativeTo(null);
		setLayout(new GridLayout(2,2));

		button1=new JButton();
		button1.setText("Button1");
		button1.setFont(new Font("",1,18));
		add(button1);

		button2=new JButton();
		button2.setText("Button2");
```

```
            button2.setFont(new Font("",1,18));
            add(button2);

            button3=new JButton();
            button3.setText("Button3");
            button3.setFont(new Font("",1,18));
            add(button3);

            button4=new JButton();
            button4.setText("Button4");
            button4.setFont(new Font("",1,18));
            add(button4);
        }
}
class Demo{
        public static void main(String args[]){
            new MyFrame().setVisible(true);
        }
}
```

09. Create an user interface with the following features:

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

```
class MyFrame extends JFrame{
        private JButton button1;
        private JButton button2;
        private JButton button3;
        private JButton button4;
        private JButton button5;
        private JButton button6;
        private JButton button7;
        private JButton button8;
        private JButton button9;
        private JButton button0;
        private JButton buttonMul;
        private JButton buttonAdd;
        private JButton buttonSub;
        private JButton buttonDiv;
        private JButton buttonDot;
        private JButton buttonEquals;
        private JTextField displayText;

        MyFrame(){
                setSize(400,400);
                setTitle("Calculator");
```

```
setDefaultCloseOperation(EXIT_ON_CLOSE);
setLocationRelativeTo(null);
setLayout(new GridLayout(4,4));

button7=new JButton();
button7.setText("7");
button7.setFont(new Font("",1,18));
add(button7);

button8=new JButton();
button8.setText("8");
button8.setFont(new Font("",1,18));
add(button8);

button9=new JButton();
button9.setText("9");
button9.setFont(new Font("",1,18));
add(button9);

buttonMul=new JButton();
buttonMul.setText("*");
buttonMul.setFont(new Font("",1,18));
```

```
add(buttonMul);

button4=new JButton();
button4.setText("4");
button4.setFont(new Font("",1,18));
add(button4);

button5=new JButton();
button5.setText("5");
button5.setFont(new Font("",1,18));
add(button5);

button6=new JButton();
button6.setText("6");
button6.setFont(new Font("",1,18));
add(button6);

buttonDiv=new JButton();
buttonDiv.setText("/");
buttonDiv.setFont(new Font("",1,18));
add(buttonDiv);
```

```
button1=new JButton();
button1.setText("1");
button1.setFont(new Font("",1,18));
add(button1);

button2=new JButton();
button2.setText("2");
button2.setFont(new Font("",1,18));
add(button2);

button3=new JButton();
button3.setText("3");
button3.setFont(new Font("",1,18));
add(button3);

buttonAdd=new JButton();
buttonAdd.setText("+");
buttonAdd.setFont(new Font("",1,18));
add(buttonAdd);

button0=new JButton();
button0.setText("0");
```

```
            button0.setFont(new Font("",1,18));
            add(button0);

            buttonDot=new JButton();
            buttonDot.setText(".");
            buttonDot.setFont(new Font("",1,18));
            add(buttonDot);

            buttonEquals=new JButton();
            buttonEquals.setText("=");
            buttonEquals.setFont(new Font("",1,18));
            add(buttonEquals);

            buttonSub=new JButton();
            buttonSub.setText("-");
            buttonSub.setFont(new Font("",1,18));
            add(buttonSub);
        }
}
class Demo{
        public static void main(String args[]){
            new MyFrame().setVisible(true);
```

```
        }
}
```

10. What is the output of the following program? Explain your answer.

```
import javax.swing.*;
class MyFrame extends JPanel{
MyFrame(){
setSize(200,200);
//Default layout of the JPanel is "FlowLayout" add(new
JButton("Button1"));
add(new JButton("Button2"));
add(new JButton("Button3"));
add(new JButton("Button4"));
}
public static void main(String args[]) {
new MyFrame().setVisible(true); ;
}
}
```

No output. Object has not been created for Attributes.

11. Create java program to get the following output.

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

```
class MyFrame extends JFrame{
        private JButton btn1;
        private JButton btn2;
        private JButton btn3;
        private JButton btn4;
        private JButton btnNorth;
        private JButton btnWest;
        private JButton btnEast;
        private JButton btnSouth;
        private JTextField displayText;

        MyFrame(){
                setSize(400,400);
                setTitle("JPanel is a Container");
                setDefaultCloseOperation(EXIT_ON_CLOSE);
                setLocationRelativeTo(null);

                btnNorth=new JButton();
                btnNorth.setText("North");
                btnNorth.setFont(new Font("",1,18));
                add("North",btnNorth);
```

```
btnSouth=new JButton();
btnSouth.setText("South");
btnSouth.setFont(new Font("",1,18));
add("South",btnSouth);

btnWest=new JButton();
btnWest.setText("West");
btnWest.setFont(new Font("",1,18));
add("West",btnWest);

btnEast=new JButton();
btnEast.setText("East");
btnEast.setFont(new Font("",1,18));
add("East",btnEast);


JPanel ButtonPanel=new JPanel();
ButtonPanel.setLayout(new GridLayout(2,2));
btn1=new JButton();
btn1.setText("Button1");
btn1.setFont(new Font("",1,18));
//btn1.setBounds(110,50,80,25);
```

```
        ButtonPanel.add("Center",btn1);

        btn2=new JButton();
        btn2.setText("Button2");
        btn2.setFont(new Font("",1,18));
        ButtonPanel.add("Center",btn2);

        btn3=new JButton();
        btn3.setText("Button3");
        btn3.setFont(new Font("",1,18));
        ButtonPanel.add("Center",btn3);

        btn4=new JButton();
        btn4.setText("Button4");
        btn4.setFont(new Font("",1,18));
        ButtonPanel.add("Center",btn4);

        add("Center",ButtonPanel);


    }
}
```

```
class Demo{
        public static void main(String args[]){
                new MyFrame().setVisible(true);
        }
}
```

12. Explain mechanism of mixing layout using the following

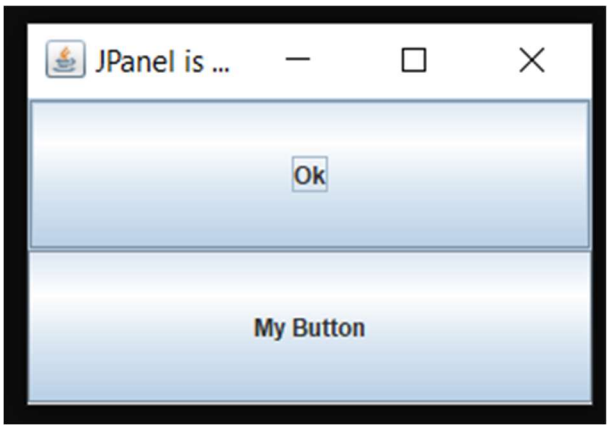
JPanel example.

```
import java.awt.*;
import javax.swing.*;
class MyFrame extends JFrame{
MyFrame(){
setSize(300,200);
setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
setTitle("JPanel is a Container");
JPanel buttonPanel=new JPanel();
//Default layout of the JPanel is "FlowLayout" buttonPanel.add(new JButton("This a large button"));
buttonPanel.add(new JButton("Ok"));
buttonPanel.add(new JButton("My Button"));
add("Center",buttonPanel);
}
```

```
}
class Demo{
public static void main(String args[]) {
new MyFrame().setVisible(true); ;
}
}
```

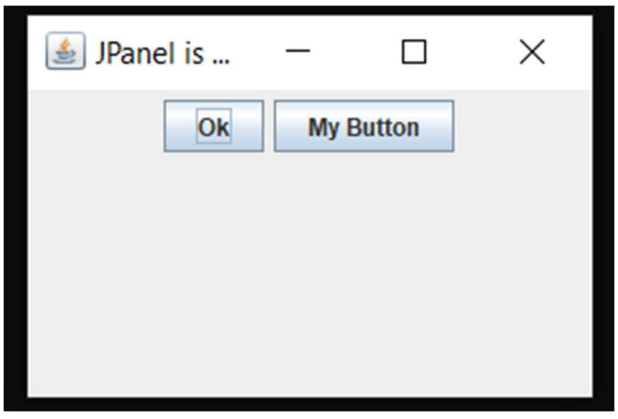
GridLayout

Output :



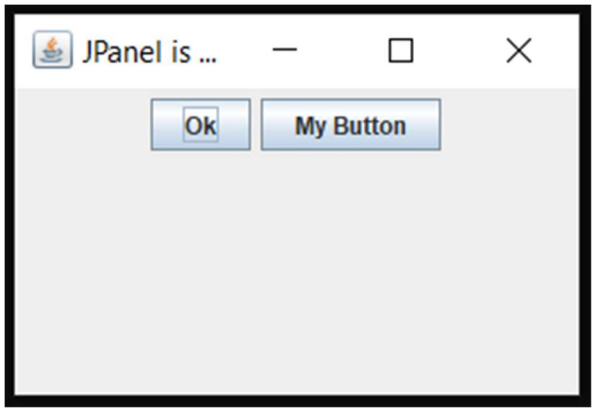
FlowLayout

Output :



Not set a Layout

Output :



13. Create an user interface for a calculator as follows:

```
 import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
class MyFrame extends JFrame{
        private JButton bt0;
        private JButton bt1;
        private JButton bt2;
        private JButton bt3;
        private JButton bt4;
        private JButton bt5;
        private JButton bt6;
        private JButton bt7;
        private JButton bt8;
```

```
private JButton bt9;
private JButton btAdd;
private JButton btSub;
private JButton btMul;
private JButton btDiv;
private JButton btDot;
private JButton btEquals;
private JTextField displayText;
private double num1;
private double num2;
private double result;
private char op;
MyFrame(){
        setSize(300,300);
        setTitle("MyFrame");
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);

        displayText=new JTextField();
        displayText.setFont(new Font("",1,20));
        displayText.setHorizontalAlignment(JTextField.RIGHT);
        add("North",displayText);
```

```
        JPanel buttonPanel=new JPanel(new GridLayout(4,4));
        bt7=new JButton("7");
        bt7.setFont(new Font("",1,20));
        bt7.addActionListener(new ActionListener(){
            public void actionPerformed(ActionEvent evt){

displayText.setText(displayText.getText()+bt7.getText());

            }
        });
        buttonPanel.add(bt7);

        bt8=new JButton("8");
        bt8.setFont(new Font("",1,20));
        bt8.addActionListener(new ActionListener(){
            public void actionPerformed(ActionEvent evt){

displayText.setText(displayText.getText()+bt8.getText());
            }
        });
        buttonPanel.add(bt8);
```

```
        bt9=new JButton("9");
        bt9.setFont(new Font("",1,20));
        bt9.addActionListener(new ActionListener(){
                public void actionPerformed(ActionEvent evt){

displayText.setText(displayText.getText()+bt9.getText());
                }
        });
        buttonPanel.add(bt9);

        btMul=new JButton("x");
        btMul.setFont(new Font("",1,20));
        btMul.addActionListener(new ActionListener(){
                public void actionPerformed(ActionEvent evt){
                        String sNum=displayText.getText();
                        num1=Double.parseDouble(sNum);
                        displayText.setText("");
                        op='*';
                }
        });
        buttonPanel.add(btMul);
```

```
        bt4=new JButton("4");
        bt4.setFont(new Font("",1,20));
        bt4.addActionListener(new ActionListener(){
            public void actionPerformed(ActionEvent evt){
displayText.setText(displayText.getText()+bt4.getText());
            }
        });
        buttonPanel.add(bt4);

        bt5=new JButton("5");
        bt5.setFont(new Font("",1,20));
        bt5.addActionListener(new ActionListener(){
            public void actionPerformed(ActionEvent evt){
displayText.setText(displayText.getText()+bt5.getText());
            }
        });
        buttonPanel.add(bt5);

        bt6=new JButton("6");
        bt6.setFont(new Font("",1,20));
        bt6.addActionListener(new ActionListener(){
```

```
            public void actionPerformed(ActionEvent evt){

displayText.setText(displayText.getText()+bt6.getText());
            }
        });
        buttonPanel.add(bt6);

        btDiv=new JButton("/");
        btDiv.setFont(new Font("",1,20));
        btDiv.addActionListener(new ActionListener(){
            public void actionPerformed(ActionEvent evt){
                String sNum=displayText.getText();
                num1=Double.parseDouble(sNum);
                displayText.setText("");
                op='/';
            }
        });
        buttonPanel.add(btDiv);

        bt1=new JButton("1");
        bt1.setFont(new Font("",1,20));
        bt1.addActionListener(new ActionListener(){
```

```
            public void actionPerformed(ActionEvent evt){

displayText.setText(displayText.getText()+bt1.getText());
            }
        });
        buttonPanel.add(bt1);

        bt2=new JButton("2");
        bt2.setFont(new Font("",1,20));
        bt2.addActionListener(new ActionListener(){
            public void actionPerformed(ActionEvent evt){

displayText.setText(displayText.getText()+bt2.getText());
            }
        });
        buttonPanel.add(bt2);

        bt3=new JButton("3");
        bt3.setFont(new Font("",1,20));
        bt3.addActionListener(new ActionListener(){
            public void actionPerformed(ActionEvent evt){

displayText.setText(displayText.getText()+bt3.getText());
```

```
            }
        });
        buttonPanel.add(bt3);

        btAdd=new JButton("+");
        btAdd.setFont(new Font("",1,20));
        btAdd.addActionListener(new ActionListener(){
            public void actionPerformed(ActionEvent evt){
                String sNum=displayText.getText();
                num1=Double.parseDouble(sNum);
                displayText.setText("");
                op='+';
            }
        });
        buttonPanel.add(btAdd);

        bt0=new JButton("0");
        bt0.setFont(new Font("",1,20));
        bt0.addActionListener(new ActionListener(){
            public void actionPerformed(ActionEvent evt){

displayText.setText(displayText.getText()+bt0.getText());
```

```
            }
        });
        buttonPanel.add(bt0);

        btDot=new JButton(".");
        btDot.setFont(new Font("",1,20));
        btDot.addActionListener(new ActionListener(){
            public void actionPerformed(ActionEvent evt){
                String sNum=displayText.getText();
                num1=Double.parseDouble(sNum);
                displayText.setText("");
                op='.';
            }
        });
        buttonPanel.add(btDot);

        btEquals=new JButton("=");
        btEquals.setFont(new Font("",1,20));
        btEquals.addActionListener(new ActionListener(){
            public void actionPerformed(ActionEvent evt){

num2=Double.parseDouble(displayText.getText());
```

```
                switch(op){
                        case '*' : result=num1*num2;break;
                        case '/' : result=num1/num2;break;
                        case '+' : result=num1+num2;break;
                        case '-' : result=num1-num2;break;
                        case '=' : result=num1=num2;break;
                }
                displayText.setText(Double.toString(result));
        }
});
buttonPanel.add(btEquals);

btSub=new JButton("-");
btSub.setFont(new Font("",1,20));
btSub.addActionListener(new ActionListener(){
        public void actionPerformed(ActionEvent evt){
                String sNum=displayText.getText();
                num1=Integer.parseInt(sNum);
                displayText.setText("");
                op='-';
        }
});
```

```
            buttonPanel.add(btSub);


            add("Center",buttonPanel);
        }
}
class Demo{
        public static void main(String args[]){
            new MyFrame().setVisible(true);
        }
}
```

14. Create the following UI, the text alignment should be at right and text font size, style 20 and bold.

```
import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
        private JTextField displayText;
        MyFrame(){
            setSize(400,400);
            setTitle("Demonstrate TextField");
            setDefaultCloseOperation(EXIT_ON_CLOSE);
```

```
            setLocationRelativeTo(null);

            displayText=new JTextField();
            displayText.setFont(new Font("",1,20));
            displayText.setHorizontalAlignment(JTextField.RIGHT);
            add("North",displayText);

        }
}
class Demo{
        public static void main(String args[]){
            new MyFrame().setVisible(true);
        }
}
```

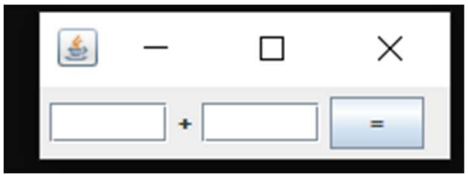
15. Explain the layout of the following GUI.

```
import javax.swing.*;
import java.awt.*;
class Calculator extends JFrame{
private JTextField num1textField;
private JTextField num2textField;
private JButton equalsButton;
private JLabel answerLabel;
```

```
private JLabel operatorLabel;
Calculator(){
setSize(300,300);
setDefaultCloseOperation(EXIT_ON_CLOSE);
setLocationRelativeTo(null);
setTitle("Calculator");
setLayout(new FlowLayout());
num1textField=new JTextField(5);
num2textField=new JTextField(5);
operatorLabel=new JLabel("+");
answerLabel=new JLabel(" ");
equalsButton=new JButton(" = ");
add(num1textField);
add(operatorLabel);
add(num2textField);
add(equalsButton);
add(answerLabel);
pack();
}
public static void main(String args[]){
new Calculator().setVisible(true);
}
```

}

Output :



16. What is the output?

```
import java.awt.*;
import javax.swing.*;
class MyFrame extends JFrame{
private JLabel titleLabel;
MyFrame(){
setSize(200,100);
setDefaultCloseOperation(EXIT_ON_CLOSE);
setTitle("Demonstrate JLabel");
titleLabel=new JLabel("This is a JLabel");
add("North",titleLabel);
}
public static void main(String args[]) {
new MyFrame().setVisible(true);
}
}
```

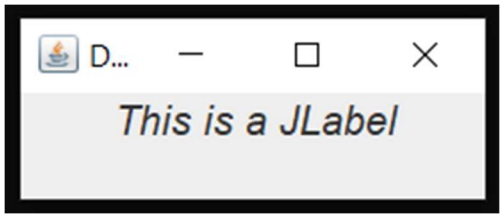
Output :

17. What is the output? (file “facebook.png” should be in the working directory)

```
import java.awt.*;
import javax.swing.*;
class MyFrame extends JFrame{
private JLabel titleLabel;
MyFrame(){
setSize(250,100);
setDefaultCloseOperation(EXIT_ON_CLOSE);
setTitle("Demonstrate JLabel");
titleLabel=new JLabel("This is a JLabel");
titleLabel.setHorizontalAlignment(JLabel.CENTER);
Font f=new Font("Batang",2,20);
titleLabel.setFont(f);
ImageIcon image=new ImageIcon("facebook.png");
titleLabel.setIcon(image);
add("North",titleLabel);
}
```

```
//
public static void main(String args[]) {
new MyFrame().setVisible(true); ;
}
}
```

Output :



18. Develop exercise 20 to get the following output.

```
import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
        private JLabel lblTitle;
        private JLabel lblId;
        private JLabel lblName;
        private JLabel lblAddress;
        private JLabel lblPhnNo;

        private JTextField TextId;
        private JTextField TextName;
        private JTextField TextAddress;
```

```
        private JTextField TextPhnNo;

        private JButton btnAdd;
        private JButton btnCancel;

MyFrame(){
        JPanel LabelPanel=new JPanel();
        setSize(600,300);
        setTitle("Student Detail Form");
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);
        add(LabelPanel);


        JLabel lblTitle=new JLabel();
        lblTitle.setText("Student Detail Form");
        lblTitle.setHorizontalAlignment(JTextField.CENTER);
        lblTitle.setFont(new Font("",1,30));
        add("North",lblTitle);

        LabelPanel.setLayout(null);
        JLabel lblId=new JLabel();
```

```
lblId.setText("Student Id");
lblId.setFont(new Font("",1,18));
lblId.setBounds(30,20,100,25);
LabelPanel.add(lblId);

JTextField TextId=new JTextField(30);
TextId.setBounds(150,20,250,25);
LabelPanel.add(TextId);

JLabel lblName=new JLabel();
lblName.setText("Name");
lblName.setFont(new Font("",1,18));
lblName.setBounds(30,50,100,25);
LabelPanel.add(lblName);

JTextField TextName=new JTextField(30);
TextName.setBounds(150,50,250,25);
LabelPanel.add(TextName);

JLabel lblAddress=new JLabel();
lblAddress.setText("Address");
lblAddress.setFont(new Font("",1,18));
```

```
        lblAddress.setBounds(30,80,110,25);
        LabelPanel.add(lblAddress);

        JTextField TextAddress=new JTextField(30);
        TextAddress.setBounds(150,80,250,25);
        LabelPanel.add(TextAddress);

        JLabel lblPhnNo=new JLabel();
        lblPhnNo.setText("Name");
        lblPhnNo.setFont(new Font("",1,18));
        lblPhnNo.setBounds(30,110,100,25);
        LabelPanel.add(lblPhnNo);

        JTextField TextPhnNo=new JTextField(30);
        TextPhnNo.setBounds(150,110,250,25);
        LabelPanel.add(TextPhnNo);

        JPanel ButtonPanel=new JPanel(new
FlowLayout(FlowLayout.RIGHT));
        JButton btnAdd=new JButton();
        btnAdd.setText("Add Student");
        btnAdd.setFont(new Font("",1,20));
```

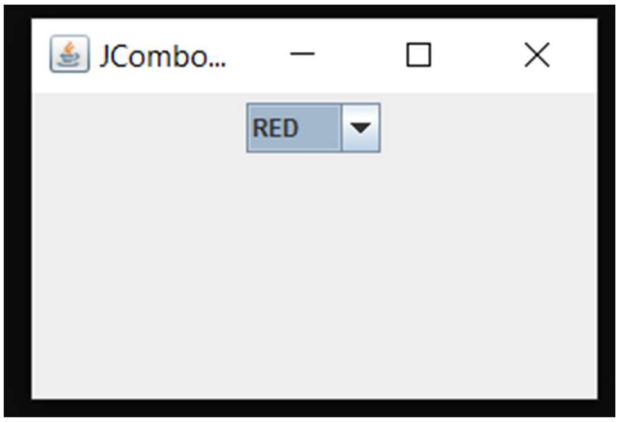
```
            ButtonPanel.add(btnAdd);

            JButton btnCancel=new JButton();
            btnCancel.setText("Cancel");
            btnCancel.setFont(new Font("",1,20));
            ButtonPanel.add(btnCancel);
            add("South",ButtonPanel);

            }
        }

class Demo{
        public static void main(String args[]){
            new MyFrame ().setVisible(true);
        }
}
```

19. What is the output?

```
import java.awt.*;
import javax.swing.*;
class MyFrame extends JFrame{
JComboBox colourBox;
```

```
MyFrame(){
setSize(300,200);
setDefaultCloseOperation(EXIT_ON_CLOSE);
setLocationRelativeTo(null);
setTitle("JComboBox");
setLayout(new FlowLayout());
//String[] colours={"RED","GREEN","BLACK","BLUE"};
//colourBox=new JComboBox(colours);
colourBox=new JComboBox();
colourBox.addItem("RED");
colourBox.addItem("GREEN");
colourBox.addItem("BLACK");
colourBox.addItem("BLUE");
add("North",colourBox);
}
}
class Demo{
public static void main(String args[]){
new MyFrame().setVisible(true);
}
}
```

Output :



20. Create java program to get the following output.

```
import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
        private JLabel lblTitle;
        private JLabel lblId;
        private JLabel lblName;
        private JLabel lblAddress;
        private JLabel lblPhnNo;

        private JTextField TextId;
        private JTextField TextName;
        private JTextField TextAddress;
        private JTextField TextPhnNo;

    MyFrame(){
```

```
JPanel LabelPanel=new JPanel();
setSize(600,400);
setTitle("Student Detail Form");
setDefaultCloseOperation(EXIT_ON_CLOSE);
setLocationRelativeTo(null);
add(LabelPanel);


JLabel lblTitle=new JLabel();
lblTitle.setText("Student Detail Form");
lblTitle.setHorizontalAlignment(JTextField.CENTER);
lblTitle.setFont(new Font("",1,30));
add("North",lblTitle);

LabelPanel.setLayout(null);
JLabel lblId=new JLabel();
lblId.setText("Student Id");
lblId.setFont(new Font("",1,18));
lblId.setBounds(30,20,100,60);
LabelPanel.add(lblId);

JTextField TextId=new JTextField(30);
```

```
TextId.setBounds(150,20,250,60);
LabelPanel.add(TextId);

JLabel lblName=new JLabel();
lblName.setText("Name");
lblName.setFont(new Font("",1,18));
lblName.setBounds(30,70,100,60);
LabelPanel.add(lblName);

JTextField TextName=new JTextField(30);
TextName.setBounds(150,70,250,60);
LabelPanel.add(TextName);

JLabel lblAddress=new JLabel();
lblAddress.setText("Address");
lblAddress.setFont(new Font("",1,18));
lblAddress.setBounds(30,120,110,60);
LabelPanel.add(lblAddress);

JTextField TextAddress=new JTextField(30);
TextAddress.setBounds(150,120,250,60);
LabelPanel.add(TextAddress);
```

```
            JLabel lblPhnNo=new JLabel();
            lblPhnNo.setText("Name");
            lblPhnNo.setFont(new Font("",1,18));
            lblPhnNo.setBounds(30,170,100,60);
            LabelPanel.add(lblPhnNo);

            JTextField TextPhnNo=new JTextField(30);
            TextPhnNo.setBounds(150,170,250,60);
            LabelPanel.add(TextPhnNo);



            }
        }

class Demo{
        public static void main(String args[]){
            new MyFrame ().setVisible(true);
        }
}
```

21. Develop the exercise 19 to get the following output.

```
import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
        private JLabel lblTitle;
        private JLabel lblId;
        private JLabel lblName;
        private JLabel lblAddress;
        private JLabel lblPhnNo;

        private JTextField TextId;
        private JTextField TextName;
        private JTextField TextAddress;
        private JTextField TextPhnNo;

        private JButton btnAdd;
        private JButton btnCancel;

    MyFrame(){
        JPanel LabelPanel=new JPanel();
        setSize(600,400);
        setTitle("Student Detail Form");
        setDefaultCloseOperation(EXIT_ON_CLOSE);
```

```
setLocationRelativeTo(null);
add(LabelPanel);


JLabel lblTitle=new JLabel();
lblTitle.setText("Student Detail Form");
lblTitle.setHorizontalAlignment(JTextField.CENTER);
lblTitle.setFont(new Font("",1,30));
add("North",lblTitle);

LabelPanel.setLayout(null);
JLabel lblId=new JLabel();
lblId.setText("Student Id");
lblId.setFont(new Font("",1,18));
lblId.setBounds(30,40,100,35);
LabelPanel.add(lblId);

JTextField TextId=new JTextField(30);
TextId.setBounds(330,40,250,35);
LabelPanel.add(TextId);

JLabel lblName=new JLabel();
```

```
lblName.setText("Name");
lblName.setFont(new Font("",1,18));
lblName.setBounds(30,80,100,35);
LabelPanel.add(lblName);

JTextField TextName=new JTextField(30);
TextName.setBounds(330,80,250,35);
LabelPanel.add(TextName);

JLabel lblAddress=new JLabel();
lblAddress.setText("Address");
lblAddress.setFont(new Font("",1,18));
lblAddress.setBounds(30,120,110,35);
LabelPanel.add(lblAddress);

JTextField TextAddress=new JTextField(30);
TextAddress.setBounds(330,120,250,35);
LabelPanel.add(TextAddress);

JLabel lblPhnNo=new JLabel();
lblPhnNo.setText("Name");
lblPhnNo.setFont(new Font("",1,18));
```

```
        lblPhnNo.setBounds(30,160,100,35);
        LabelPanel.add(lblPhnNo);

        JTextField TextPhnNo=new JTextField(30);
        TextPhnNo.setBounds(330,160,250,35);
        LabelPanel.add(TextPhnNo);

JPanel ButtonPanel=new JPanel(new FlowLayout(FlowLayout.RIGHT));
        JButton btnAdd=new JButton();
        btnAdd.setText("Add Student");
        btnAdd.setFont(new Font("",1,20));
        ButtonPanel.add(btnAdd);

        JButton btnCancel=new JButton();
        btnCancel.setText("Cancel");
        btnCancel.setFont(new Font("",1,20));
        ButtonPanel.add(btnCancel);
        add("South",ButtonPanel);

        }
    }
```

```
class Demo{
        public static void main(String args[]){
                new MyFrame ().setVisible(true);
        }
}
```

22. Explain the purpose of a toggle button using the following example

```
import java.awt.*;
import javax.swing.*;
class MyFrame extends JFrame{
private JToggleButton yesNoButton;
MyFrame(){
setSize(350,200);
setDefaultCloseOperation(EXIT_ON_CLOSE);
setTitle("Demonstrate JToggleButton");
setLayout(new FlowLayout());
add(new JLabel("This is a toggle button"));
yesNoButton=new JToggleButton("Yes/No",true);
//try with following constructor
//JToggleButton(String text, boolean status)
yesNoButton.setFont(new Font("",1,20));
```

```
add(yesNoButton);
}
}
class Demo{
public static void main(String args[]) {
new MyFrame().setVisible(true); ;
}
}
```

An attribute has been taken,the type is JLoggleButton and the reference variable is yesNoButton.An object has been created and the reference type and reference variable created in the constructor have been set and arguments have been passed to that object to be printed as yes/no in the output.

23. Create a java program to the following output.

```
import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
        private JLabel lblTitle;
        private JLabel lblName;
        private JLabel lblAddress;
        private JLabel lblGender;
```

```
private JTextField textName;
private JTextField textAddress;

private JRadioButton Male;
private JRadioButton Female;

private JButton btnSave;
private JButton btnCancel;

MyFrame(){
        JPanel labelPanel=new JPanel();
        ButtonGroup gend=new ButtonGroup();
        setSize(800,400);
        setTitle("");
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);
        labelPanel.setLayout(null);
        add(labelPanel);
        //setLayout(null);

        JLabel lblTitle=new JLabel();
        lblTitle.setText("Student Detail");
```

```
lblTitle.setFont(new Font("",1,30));
lblTitle.setHorizontalAlignment(JTextField.CENTER);
add("North",lblTitle);

JLabel lblName=new JLabel();
lblName.setText("Name");
lblName.setFont(new Font("",1,18));
lblName.setBounds(30,20,100,25);
labelPanel.add(lblName);

JTextField textName=new JTextField();
textName.setBounds(150,20,250,25);
labelPanel.add(textName);

JLabel lblAddress=new JLabel();
lblAddress.setText("Address");
lblAddress.setFont(new Font("",1,18));
lblAddress.setBounds(30,50,100,25);
labelPanel.add(lblAddress);

JTextField textAddress=new JTextField();
textAddress.setBounds(150,50,250,25);
```

```
        labelPanel.add(textAddress);

        JLabel lblGender=new JLabel();
        lblGender.setText("Gender");
        lblGender.setFont(new Font("",1,18));
        lblGender.setBounds(30,80,100,25);
        labelPanel.add(lblGender);

        JRadioButton Male=new JRadioButton();
        Male.setText("Male");
        Male.setFont(new Font("",1,18));
        Male.setBounds(150,80,150,25);
        labelPanel.add(Male);

        JRadioButton Female=new JRadioButton();
        Female.setText("Female");
        Female.setFont(new Font("",1,18));
        Female.setBounds(350,80,250,25);
        labelPanel.add(Female);

        JPanel ButtonPanel=new JPanel(new
FlowLayout(FlowLayout.RIGHT));
```

```
            JButton btnSave=new JButton("Save");
            btnSave.setFont(new Font("",1,20));
            ButtonPanel.add("West",btnSave);

            JButton btnCancel=new JButton("Cancel");
            btnCancel.setFont(new Font("",1,20));
            ButtonPanel.add("West",btnCancel);
            add("South",ButtonPanel);
            add("South",ButtonPanel);
        }
}
class Demo{
        public static void main(String args[]){
            new MyFrame().setVisible(true);
        }
}
```

24. Plain check box should be the default selected one.

```
import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
        private Checkbox checkPlain;
        private Checkbox checkBold;
```

```
private Checkbox checkItalic;
private Checkbox checkBolIta;

MyFrame(){
        setSize(600,200);
        setTitle("RadioButton Test");
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);
        setLayout(new FlowLayout());

        Checkbox checkPlain=new Checkbox("Plain");
        checkPlain.setFont(new Font("",1,20));
        add(checkPlain);

        Checkbox checkBold=new Checkbox("Bold");
        checkBold.setFont(new Font("",1,20));
        add(checkBold);

        Checkbox checkItalic=new Checkbox("Italic");
        checkItalic.setFont(new Font("",1,20));
        add(checkItalic);
```

```
            Checkbox checkBolIta=new Checkbox("Bold/Italic");
            checkBolIta.setFont(new Font("",1,20));
            add(checkBolIta);
        }
}
class Demo{
        public static void main(String args[]){
            new MyFrame().setVisible(true);
        }
}
```

25. Selected Date should be 2013 April 6. In Month Combo Box showing maximum row count is 4.

```
import javax.swing.*;
import java.awt.*;
class MyFrame extends JFrame{
        private JLabel lblTitle;
        private JLabel lblDate;
        private JComboBox yearComb;
        private JComboBox monthComb;
        private JComboBox dateComb;
```

```
MyFrame(){
        JPanel labelPanel=new JPanel();
        setSize(600,300);
        setTitle("RadioButton Test");
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);
        labelPanel.setLayout(null);
        add(labelPanel);

        lblTitle=new JLabel();
        lblTitle.setText("ComboBox Demo");
        lblTitle.setFont(new Font("",1,30));
        lblTitle.setHorizontalAlignment(JLabel.CENTER);
        add("North",lblTitle);

        lblDate=new JLabel();
        lblDate.setText("Date");
        lblDate.setFont(new Font("",1,20));
        lblDate.setBounds(10,20,80,25);
        labelPanel.add(lblDate);
```

```
        String
year[]={"2000","2001","2003","2004","2005","2006","2007","2008","20
09","2010","2011","2012","2013","2014","2015","2016","2017","2018"
,"2019","2020","2021","2022"};
        JComboBox yearComb=new JComboBox(year);
        yearComb.setBounds(60,20,80,25);
        labelPanel.add(yearComb);

        String
month[]={"January","February","March","April","May","June","July","A
ugust","September","Octomber","November","December"};
        JComboBox monthComb=new JComboBox(month);
        monthComb.setBounds(150,20,80,25);
        labelPanel.add(monthComb);

        String
date[]={"1","2","3","4","5","6","7","8","9","10","11","12","13","14","15
","16","17","18","19","20","21","22","23","24","25","26","27","28","29
","30","31"};
        JComboBox dateComb=new JComboBox(date);
        dateComb.setBounds(250,20,80,25);
        labelPanel.add(dateComb);
    }
}
```

```
class Demo{
	public static void main(String args[]){
		new MyFrame().setVisible(true);
	}
}
```

26. Write java program to create an Equalizer.

27. Create the following user interface:

28. Make the following:

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
class MyFrame extends JFrame{
	private JRadioButton bird;
	private JRadioButton cat;
	private JRadioButton dog;
	private JRadioButton rabbit;
	private JRadioButton pig;

	MyFrame(){
		JPanel ButtonPanel=new JPanel();
		setSize(400,300);
```

```
setTitle("RadioButtonDemo");
setDefaultCloseOperation(EXIT_ON_CLOSE);
setLocationRelativeTo(null);
add(ButtonPanel);
ButtonPanel.setLayout(new GridLayout(5,1));

JRadioButton bird=new JRadioButton();
bird.setText("Bird");
bird.setFont(new Font("",1,20));
bird.setBounds(30,20,80,25);
ButtonPanel.add(bird);

JRadioButton cat=new JRadioButton();
cat.setText("Cat");
cat.setFont(new Font("",1,20));
cat.setBounds(30,50,80,25);
ButtonPanel.add(cat);

JRadioButton dog=new JRadioButton();
dog.setText("Dog");
dog.setFont(new Font("",1,20));
dog.setBounds(30,80,80,25);
```

```
            ButtonPanel.add(dog);

            JRadioButton rabbit=new JRadioButton();
            rabbit.setText("Rabbit");
            rabbit.setFont(new Font("",1,20));
            rabbit.setBounds(30,110,80,25);
            ButtonPanel.add(rabbit);

            JRadioButton pig=new JRadioButton();
            pig.setText("Pig");
            pig.setFont(new Font("",1,20));
            ButtonPanel.add(pig);
            add("West",ButtonPanel);

        }
}
class Demo{
        public static void main(String args[]){
            new MyFrame().setVisible(true);
        }
}
```

29. Create a menu bar and toolbar:

30. Create an employee details form as follows:

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
class Notepad extends JFrame{
        private JTextArea textArea;
        private JMenuBar mainMenuBar;

        private JMenu fileMenu;
        private JMenu editMenu;
        private JMenu formatMenu;
        private JMenu viewMenu;
        private JMenu helpMenu;


        private JMenuItem newMenuItem;
        private JMenuItem newWindowMenuItem;
        private JMenuItem openMenuItem;
        private JMenuItem saveMenuItem;

        Notepad(){
                setSize(600,400);
```

```
        setTitle("Notepad");
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);

        textArea=new JTextArea();
        textArea.setFont(new Font("",1,20));
        JScrollPane textPane=new JScrollPane(textArea);
        add("Center",textPane);

        mainMenuBar=new JMenuBar();
        fileMenu=new JMenu("File");
        newMenuItem=new JMenuItem("New     Ctrl+N");
        fileMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("open    Ctrl+O");
        fileMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("New Window
Ctrl+Shift+N");
        fileMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("Save     Ctrl+S");
```

```
        fileMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("Save As      ctrl+Shit+S");
        fileMenu.add(newMenuItem);
        mainMenuBar.add(fileMenu);

        editMenu=new JMenu("Edit");
        newMenuItem=new JMenuItem("Undo
Ctrl+Z");
        editMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("Cut          Ctrl+X");
        editMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("Copy             Ctrl+C");
        editMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("Paste       Ctrl+V");
        editMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("Delete           Del");
        editMenu.add(newMenuItem);
```

```
        newMenuItem=new JMenuItem("Search with bing...
Ctrl+E");
        editMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("Find...  Ctrl+F");
        editMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("Find Next      F3");
        editMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("Find Previous   Shift+F3");
        editMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("Replace...       ctrl+H");
        editMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("Go To...       Ctrl+G");
        editMenu.add(newMenuItem);

        newMenuItem=new JMenuItem("Select All
Ctrl+A");
        editMenu.add(newMenuItem);
```

```
newMenuItem=new JMenuItem("Time/Date      F5");
editMenu.add(newMenuItem);
mainMenuBar.add(editMenu);

formatMenu=new JMenu("Format");
newMenuItem=new JMenuItem("Word Wrap");
formatMenu.add(newMenuItem);

newMenuItem=new JMenuItem("Font...");
formatMenu.add(newMenuItem);
mainMenuBar.add(formatMenu);

viewMenu=new JMenu("View");
newMenuItem=new JMenuItem("Zoom >");
viewMenu.add(newMenuItem);

newMenuItem=new JMenuItem("Status Bar");
viewMenu.add(newMenuItem);
mainMenuBar.add(viewMenu);

helpMenu=new JMenu("Help");
```

```
            newMenuItem=new JMenuItem("View Help");
            helpMenu.add(newMenuItem);

            newMenuItem=new JMenuItem("Send Feedback");
            helpMenu.add(newMenuItem);

            newMenuItem=new JMenuItem("About Notepad");
            helpMenu.add(newMenuItem);
            mainMenuBar.add(helpMenu);
            setJMenuBar(mainMenuBar);
        }
}
class Example{
        public static void main(String args[]){
            new Notepad().setVisible(true);
        }
}
```

31. JSlider Example:

32. Various types of JSlider:

33. Write java program to create simple time table using JTable.

34. Write a java program to Customer Order Form

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