//

IJSE

Institute of Software Engin

Graduate Diploma in Software Engineering

Batch - GDSE69

Module - Object Oriented Programming

Name : Shimara Appuhami

Nic : 200362310434

//
/

Assignment 03

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

class Window extends JFrame {
```

-
- Window() {
- setSize(400, 300);
- setTitle("My Frame");
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
- }
- }
- class Main {
- public static void main(String args[]){
- new Window().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.*;
- import java.awt.event.*;
-
- class Window extends JFrame {
- private JButton btn1;
- private JButton btn2;
- private JButton btn3;
- private JButton btn4;
- private JButton btn5;
-
- Window() {
- setSize(400, 300);
- setTitle(“Border Layout Window");
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
- initComponents();
- }
-
- public void initComponents(){

- btn1=new JButton("North");
- btn2=new JButton("South");
- btn3=new JButton ("East");
- btn4=new JButton("West");
- btn5=new JButton("Center");
-
- add("North",btn1);
- add("South",btn2);
- add("East",btn3);
- add("West",btn4);
- add("Center",btn5);
-
- }
-
-
- }
- class Main {
- public static void main(String args[]){
- new Window().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.*;
- import java.awt.event.*;
-
- class Window extends JFrame {
- private JLabel label1;
- private JLabel label2;
-
- Window() {
- setSize(400, 300);
- setTitle("Border Layout Window");
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
- initComponents();

-
- }
-
- public void initComponents(){
- label1=new JLabel("This is the North Border");
- label1.setHorizontalAlignment(JLabel.CENTER);
-
- label2=new JLabel("This is the South Border");
- label2.setHorizontalAlignment(JLabel.CENTER);
-
- add("North",label1);
- add("South",label2);
-
-
- }
-
-
- }
- class Main {
- public static void main(String args[]){
- new Window().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.*;
- import java.awt.event.*;
-
- class Window extends JFrame {
- private JLabel label1;
- private JLabel label2;
-
- Window() {
- setSize(400, 300);
- setTitle("Border Layout Window");

- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
- initComponents();
-
- }
-
- public void initComponents(){
- label1=new JLabel("This is the North Border");
- label1.setHorizontalAlignment(JLabel.CENTER);
- label1.setFont(new Font("Serif", Font.BOLD, 20));
-
-
- label2=new JLabel("This is the South Border");
- label2.setHorizontalAlignment(JLabel.CENTER);
- label2.setFont(new Font("Serif", Font.BOLD, 20));
-
-
- add("North",label1);
- add("South",label2);
-
-
- }
-
-
- }
- class Main {
- public static void main(String args[]){
- new Window().setVisible(true);
- }
- }

//

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

- import javax.swing.*;
- import java.awt.*;
- import java.awt.event.*;
-
- class Window extends JFrame {
- private JButton btn1;
- private JButton btn2;

- private JButton btn3;
- private JButton btn4;
-
- Window() {
- setSize(400, 300);
- setTitle("Flow Layout Window");
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
- setLayout(new FlowLayout());
-
- initComponents();
-
- }
-
- public void initComponents(){
-
- btn1=new JButton("Button 1");
- btn2=new JButton("This is a button");
- btn3=new JButton("Button 2");
- btn4=new JButton("Execute");
-
-
-
- add(btn1);
- add(btn2);
- add(btn3);
- add(btn4);
- }
- }
- class Main {
- public static void main(String args[]){
- new Window().setVisible(true);
- }
- }

//

06.Left alignment FlowLayout:

- import javax.swing.*;
- import java.awt.*;
- import java.awt.event.*;
-
- class Window extends JFrame {

- private JButton btn1;
- private JButton btn2;
- private JButton btn3;
- private JButton btn4;
-
- Window() {
- setSize(400, 300);
- setTitle("Flow Layout Window");
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
- setLayout(new FlowLayout(FlowLayout.LEADING));
-
- initComponents();
-
- }
-
- public void initComponents(){
-
- btn1=new JButton("Button 1");
- btn2=new JButton("This is a button");
- btn3=new JButton("Button 2");
- btn4=new JButton("Execute");
-
-
-
- add(btn1);
- add(btn2);
- add(btn3);
- add(btn4);
- }
- }
- class Main {
- public static void main(String args[]){
- new Window().setVisible(true);
- }
- }

//

07.Right alignment (FlowLayout):

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

-
- class Window extends JFrame {
- private JButton btn1;
- private JButton btn2;
- private JButton btn3;
- private JButton btn4;
-
- Window() {
- setSize(400, 300);
- setTitle("Flow Layout Window");
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
- setLayout(new FlowLayout(FlowLayout.TRAILING));
-
- initComponents();
-
- }
-
- public void initComponents(){
-
- btn1=new JButton("Button 1");
- btn2=new JButton("This is a button");
- btn3=new JButton("Button 2");
- btn4=new JButton("Execute");
-
-
-
- add(btn1);
- add(btn2);
- add(btn3);
- add(btn4);
- }
- }
- class Main {
- public static void main(String args[]){
- new Window().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.*;
● import java.awt.event.*;
●
● class Window extends JFrame {
● private JButton btn1;
● private JButton btn2;
● private JButton btn3;
● private JButton btn4;
●
● Window() {
● setSize(400, 300);
● setTitle("GridLayout Window");
● setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
● setLocationRelativeTo(null);
● setLayout(new GridLayout( 2, 2));
● initComponents();
●
● }
●
● public void initComponents(){
●
● btn1=new JButton("Button 1");
● btn2=new JButton("Button 2");
● btn3=new JButton("Button 3");
● btn4=new JButton("Button 4");
●
●
●
● add(btn1);
● add(btn2);
● add(btn3);
● add(btn4);
● }
● }
● class Main {
● public static void main(String args[]){
● new Window().setVisible(true);
● }
● }
```

//

///////

09.Create an user interface with the following features:

- import javax.swing.*;
- import java.awt.*;
- import java.awt.event.*;
-
- class Calculator extends JFrame {
- private JButton btn1;
- private JButton btn2;
- private JButton btn3;
- private JButton btn4;
- private JButton btn5;
- private JButton btn6;
- private JButton btn7;
- private JButton btn8;
- private JButton btn9;
- private JButton btn10;
- private JButton btn11;
- private JButton btn12;
- private JButton btn13;
- private JButton btn14;
- private JButton btn15;
- private JButton btn16;
-
- Calculator() {
- setSize(400, 300);
- setTitle("Calculator");
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE); ● setLocationRelativeTo(null);
- setLayout(new GridLayout(4, 4, 5, 5));
-
- initComponents();
-
- }
-
- public void initComponents(){
-
- btn1=new JButton("7");
- btn2=new JButton("8");
- btn3=new JButton("9");
- btn4=new JButton("*");
- btn5=new JButton("4");

- btn6=new JButton("5");
- btn7=new JButton("6");
- btn8=new JButton("/");
- btn9=new JButton("1");
- btn10=new JButton("2");
- btn11=new JButton("3");
- btn12=new JButton("+");
- btn13=new JButton("0");
- btn14=new JButton(".");
- btn15=new JButton("=");
- btn16=new JButton("-");
-
- add(btn1);
- add(btn2);
- add(btn3);
- add(btn4);
- add(btn5);
- add(btn6);
- add(btn7);
- add(btn8);
- add(btn9);
- add(btn10);
- add(btn11);
- add(btn12);
- add(btn13);
- add(btn14);
- add(btn15);
- add(btn16);
- }
- }
- class Main {
- public static void main(String args[]){
- new Calculator().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); ;
}
}
```

- run this program, I should see a JFrame with the three buttons arranged horizontally in the top row, and the fourth button in the second row.

///
///////

11. Create java program to get the following output.

- import javax.swing.*;
- import java.awt.*;
-
- public class Main extends JFrame {
- private JButton btn1;
- private JButton btn2;
- private JButton btn3;
- private JButton btn4;
- private JButton btn5;
- private JButton btn6;
- private JButton btn7;
- private JButton btn8;
-
- public Main() {
- setTitle("JPanel is a Container");
- setSize(400, 300);
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
-
- initComponent();
- }
- public void initComponent(){
-
- JPanel panel1 = new JPanel();
- panel1.setLayout(new BorderLayout());

-
- btn1 = new JButton("North");
- btn2 = new JButton("South");
- btn3 = new JButton("East");
- btn4 = new JButton("West");
-
- panel1.add("North",btn1);
- panel1.add("South",btn2);
- panel1.add("East",btn3);
- panel1.add("West",btn4);
-
- JPanel panel2 = new JPanel(new GridLayout(2, 2));
- btn5 = new JButton("Button1");
- btn6 = new JButton("Button2");
- btn7 = new JButton("Button3");
- btn8 = new JButton("Button4");
-
- panel2.add(btn5);
- panel2.add(btn6);
- panel2.add(btn7);
- panel2.add(btn8);
-
- panel1.add(panel2, BorderLayout.CENTER);
-
- setContentPane(panel1);
- }
-
-
- public static void main(String[] args) {
- SwingUtilities.invokeLater(() -> {
- Main window = new Main();
- window.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); ;
}
```

- The layout mixing mechanism is evident here because the buttonPanel itself uses the default FlowLayout, and it is placed within the MyFrame, which uses BorderLayout. This mixing allows you to have a panel with buttons (arranged horizontally due to FlowLayout), and this panel is positioned in the center of the frame (controlled by BorderLayout).
- When we run this program, you will see a JFrame with a central panel containing three buttons arranged horizontally due to the FlowLayout of the buttonPanel. The MyFrame sets the size, title, and default close operation for the frame.

//

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

- import javax.swing.*;
- import java.awt.*;
- import java.awt.event.*;
-
-
- class Calculator extends JFrame {
- private JButton btn1;
- private JButton btn2;
- private JButton btn3;
- private JButton btn4;

● private JButton btn5;
● private JButton btn6;
● private JButton btn7;
● private JButton btn8;
● private JButton btn9;
● private JButton btn10;
● private JButton btn11;
● private JButton btn12;
● private JButton btn13;
● private JButton btn14;
● private JButton btn15;
● private JButton btn16;
● private JTextField txt1;
● private JPanel panel1;
● private JPanel panel2;
●
● Calculator() {
● setSize(400, 300);
● setTitle("Calculator");
● setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE); ● setLocationRelativeTo(null);
●
●
● initComponents();
●
● }
●
● public void initComponents(){
●
● panel1 = new JPanel(new BorderLayout());
● txt1 = new JTextField();
●
● panel2 = new JPanel(new GridLayout(4, 4)); ●
● btn1=new JButton("7");
● btn2=new JButton("8");
● btn3=new JButton("9");
● btn4=new JButton("*");
● btn5=new JButton("4");
● btn6=new JButton("5");
● btn7=new JButton("6");
● btn8=new JButton("/");
● btn9=new JButton("1");
● btn10=new JButton("2");

- btn11=new JButton("3");
- btn12=new JButton("+");
- btn13=new JButton("0");
- btn14=new JButton(".");
- btn15=new JButton("=");
- btn16=new JButton("-");
-
-
- panel1.add(txt1);
- panel2.add(btn1);
- panel2.add(btn2);
- panel2.add(btn3);
- panel2.add(btn4);
- panel2.add(btn5);
- panel2.add(btn6);
- panel2.add(btn7);
- panel2.add(btn8);
- panel2.add(btn9);
- panel2.add(btn10);
- panel2.add(btn11);
- panel2.add(btn12);
- panel2.add(btn13);
- panel2.add(btn14);
- panel2.add(btn15);
- panel2.add(btn16);
- add(panel1, BorderLayout.NORTH);
- add(panel2, BorderLayout.CENTER);
- }
- }
- class Main {
- public static void main(String args[]){
- new Calculator().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.*;

- import java.awt.event.*;
-
-
- class Calculator extends JFrame {
-
- private JTextField txt1;
-
-
- Calculator() {
- setSize(400, 300);
- setTitle("Demonstrate TextField");
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
-
-
- initComponents();
-
- }
-
- public void initComponents(){
-
- txt1 = new JTextField();
- txt1.setPreferredSize(new Dimension(5, 50));
- txt1.setFont(new Font("Serif", Font.BOLD, 20));
- txt1.setHorizontalAlignment(JTextField.RIGHT);
-
- add("North",txt1);
-
- }
- }
- class Main {
- public static void main(String args[]){
- new Calculator().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);
}
}
```

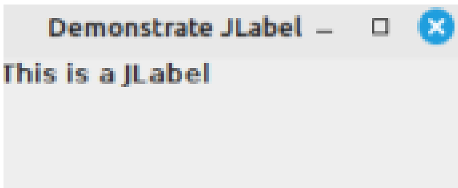
- GUI consists of two text fields for entering numbers, a label for displaying the operator, a button for performing the calculation, and another label for displaying the result. The components are arranged horizontally in a row due to the FlowLayout manager.

//

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);
}
}
```



//
///////

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); ;
}
}
```

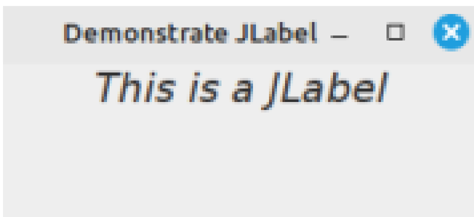
Try the above program using following code fragments:

```
ImageIcon icon =
createImageIcon("images/middle.gif");
. . .
```

label1 = new JLabel("Image and Text",

icon,
JLabel.CENTER);

//Set the position of the text, relative to the
icon:
label1.setVerticalTextPosition(JLabel.BOTTOM);
label1.setHorizontalTextPosition(JLabel.CENTER)
; label2 = new JLabel("Text-Only Label");
label3 = new JLabel(icon);



18. Develop exercise 20 to get the following output.

-
- import javax.swing.*;
- import java.awt.*;
- import java.awt.event.*;
-
- class Calculator extends JFrame {
- private JLabel l1;
- private JLabel l2;
- private JLabel l3;
- private JLabel l4;
- private JLabel l5;
- private JTextField txt1;
- private JTextField txt2;
- private JTextField txt3;
- private JTextField txt4;
- private JButton btn1;
- private JButton btn2;
- private JPanel panel1;
- private JPanel panel2;
- private JPanel panel3;
- private JPanel panel4;

●
●
●
● Calculator() {
● setSize(400, 300);
● setTitle("Student Detail Form");
● setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
● setLocationRelativeTo(null);
●
●
●
●
● initComponents();
●
● }
●
● public void initComponents(){
● panel1 = new JPanel(new FlowLayout(FlowLayout.CENTER));
● panel2 = new JPanel(new GridLayout(4,1));
● panel3 = new JPanel(new GridLayout(4,1)); ● panel4 = new JPanel(new FlowLayout(FlowLayout.RIGHT)); ● panel1.setFont(new Font("Serif", Font.BOLD, 30)); ●
● l1 = new JLabel("Student Detail Form");
● l2 = new JLabel("Student Id ");
● l3 = new JLabel("Name");
● l4 = new JLabel("Address");
● l5 = new JLabel("Phone Number");
● btn1 = new JButton("Add Student");
● btn2 = new JButton("Cancel");
●
● txt1 = new JTextField();
● txt2 = new JTextField();
● txt3 = new JTextField();
● txt4 = new JTextField();
●
● panel1.add(l1);
● panel2.add(l2);
● panel2.add(l3);
● panel2.add(l4);
● panel2.add(l5);
●
● panel3.add(txt1);
● panel3.add(txt2);

- panel3.add(txt3);
- panel3.add(txt4);
-
- panel4.add(btn1);
- panel4.add(btn2);
-
- add(panel1, BorderLayout.NORTH);
- add(panel2, BorderLayout.WEST);
- add(panel3, BorderLayout.CENTER);
- add(panel4, BorderLayout.SOUTH);
-
- }
- }
- class Main {
- public static void main(String args[]){
- new Calculator().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);
}
}
```

20. Create java program to get the following output.
    - import javax.swing.*;
    - import java.awt.*;
    - import java.awt.event.*;
    -
    -
    - class Calculator extends JFrame {
    - private JLabel l1;
    - private JLabel l2;
    - private JLabel l3;
    - private JLabel l4;
    - private JLabel l5;
    - private JTextField txt1;
    - private JTextField txt2;
    - private JTextField txt3;
    - private JTextField txt4;
    - private JPanel panel1;
    - private JPanel panel2;
    - private JPanel panel3;
    - private JPanel panel4;
    -
    -
    -
    -
    -

● Calculator() {
● setSize(400, 300);
● setTitle("Student Detail Form");
● setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE); ●
setLocationRelativeTo(null);
●
● initComponents();
●
● }
●
● public void initComponents(){
● panel1 = new JPanel(new FlowLayout(FlowLayout.CENTER)); ●
panel2 = new JPanel(new GridLayout(4,1));
● panel3 = new JPanel(new GridLayout(4,1));
● panel4 = new JPanel(new FlowLayout(FlowLayout.RIGHT)); ●
panel1.setFont(new Font("Serif", Font.BOLD, 30)); ●
●
● l1 = new JLabel("Student Detail Form");
● l2 = new JLabel("Student Id ");
● l3 = new JLabel("Name");
● l4 = new JLabel("Address");
● l5 = new JLabel("Phone Number");
●
●
●
● txt1 = new JTextField();
● txt2 = new JTextField();
● txt3 = new JTextField();
● txt4 = new JTextField();
●
●
● panel1.add(l1);
● panel2.add(l2);
● panel2.add(l3);
● panel2.add(l4);
● panel2.add(l5);
●
●
● panel3.add(txt1);
● panel3.add(txt2);
● panel3.add(txt3);
● panel3.add(txt4);
●

-
-
- //add(panel1, BorderLayout.NORTH);
- add(panel2, BorderLayout.WEST);
- add(panel3, BorderLayout.CENTER);
-
-
-
- }
- }
- class Main {
- public static void main(String args[]){
- new Calculator().setVisible(true);
- }
- }

///
///////

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

- import javax.swing.*;
- import java.awt.*;
- import java.awt.event.*;
-
-
- class Calculator extends JFrame {
- private JLabel l1;
- private JLabel l2;
- private JLabel l3;
- private JLabel l4;
- private JLabel l5;
- private JTextField txt1;
- private JTextField txt2;
- private JTextField txt3;
- private JTextField txt4;
- private JButton btn1;
- private JButton btn2;
- private JPanel panel1;
- private JPanel panel2;
- private JPanel panel3;
- private JPanel panel4;
-

●
●
●
●
● Calculator() {
● setSize(400, 300);
● setTitle("Student Detail Form");
● setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE); ● setLocationRelativeTo(null);
●
●
●
●
●
●
●
●
● initComponents();
●
● }
●
● public void initComponents(){
● panel1 = new JPanel(new FlowLayout(FlowLayout.CENTER)); ● panel2 = new JPanel(new GridLayout(4,1)); ● panel3 = new JPanel(new GridLayout(4,1)); ● panel4 = new JPanel(new FlowLayout(FlowLayout.RIGHT)); ● panel1.setFont(new Font("Serif", Font.BOLD, 30)); ●
●
● l1 = new JLabel("Student Detail Form");
● l2 = new JLabel("Student Id ");
● l3 = new JLabel("Name");
● l4 = new JLabel("Address");
● l5 = new JLabel("Phone Number");
● btn1 = new JButton("Add Student");
● btn2 = new JButton("Cancel");
●
●
● txt1 = new JTextField();
● txt2 = new JTextField();
● txt3 = new JTextField();
● txt4 = new JTextField();
●
●

- panel1.add(l1);
- panel2.add(l2);
- panel2.add(l3);
- panel2.add(l4);
- panel2.add(l5);
-
-
- panel3.add(txt1);
- panel3.add(txt2);
- panel3.add(txt3);
- panel3.add(txt4);
-
-
- panel4.add(btn1);
- panel4.add(btn2);
-
- add(panel1, BorderLayout.NORTH);
- add(panel2, BorderLayout.WEST);
- add(panel3, BorderLayout.CENTER);
- add(panel4, BorderLayout.SOUTH);
-
-
- }
- }
- class Main {
- public static void main(String args[]){
- new Calculator().setVisible(true);
- }
- }
-
-

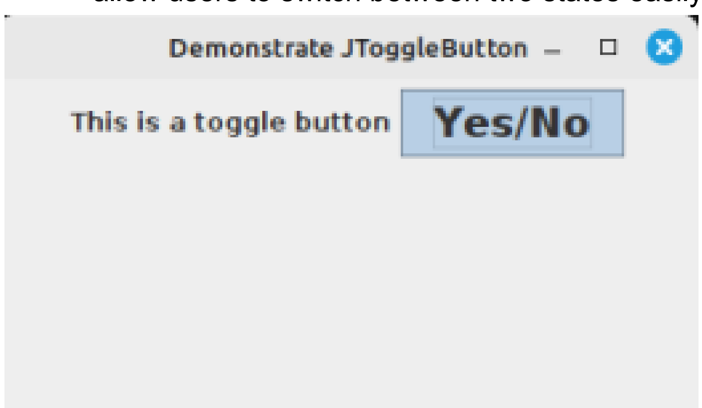
//
///////

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); ;
}
}
```

- see a JFrame with a label ("This is a toggle button") and a toggle button labelled "Yes/No". Since the initial state is set to "true", the button will appear in the pressed state. Clicking the button will toggle its state between pressed and not pressed. The JToggleButton is useful in scenarios where you want to represent a binary choice and allow users to switch between two states easily.



23. Create a java program to the following output.

- import javax.swing.*;
- import java.awt.*;
-
- class Calculator extends JFrame {
- private JLabel l1;
- private JLabel l2;
- private JLabel l3;
- private JLabel l4;

● private JTextField txt1;
● private JTextField txt2;
● private JTextField txt3;
● private JButton btn1;
● private JButton btn2;
● private JPanel panel1;
● private JPanel panel2;
● private JPanel panel3;
● private JPanel panel4;
● private JPanel panel5;
● private JPanel panel6;
● private JRadioButton r1;
● private JRadioButton r2;
●
● Calculator() {
● setSize(400, 300);
● setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE); ● setLocationRelativeTo(null);
●
● initComponents();
● }
●
● public void initComponents() {
● panel1 = new JPanel(new FlowLayout(FlowLayout.CENTER)); ● panel2 = new JPanel(new GridLayout(4, 1,5,5)); ● panel3 = new JPanel(new GridLayout(2, 1,5,5)); ● panel4 = new JPanel(new FlowLayout(FlowLayout.RIGHT)); ● panel5 = new JPanel(new GridLayout(2, 1,5,5)); ● panel6 = new JPanel(new FlowLayout(FlowLayout.CENTER)); ●
● l4 = new JLabel("Student Detail") ;
● l4.setFont(new Font("Serif", Font.ITALIC, 30)); ● l1 = new JLabel("Name");
● l2 = new JLabel("Address");
● l3 = new JLabel("Gender");
●
● r1 = new JRadioButton("Male");
● r2 = new JRadioButton("Female");
●
● ButtonGroup group = new ButtonGroup();
● group.add(r1);
● group.add(r2);
●
● btn1 = new JButton("Save");

- btn2 = new JButton("Cancel");
-
- txt1 = new JTextField();
- txt2 = new JTextField();
- txt3 = new JTextField();
-
- panel2.add(l1);
- panel2.add(l2);
- panel2.add(l3);
- panel1.add("Center",l4);
- panel3.add(txt1);
- panel3.add(txt2);
-
- panel4.add(btn1);
- panel4.add(btn2);
-
- panel5.add(panel3);
- panel6.add(r1);
- panel6.add(r2);
- panel5.add(panel6);
-
- add(panel1, BorderLayout.NORTH);
- add(panel2, BorderLayout.WEST);
- add(panel5, BorderLayout.CENTER);
- add(panel4, BorderLayout.SOUTH);
- }
-
- public static void main(String args[]) {
- new Calculator().setVisible(true);
- }
- }
-
-

//
///////

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

- import javax.swing.*;
- import java.awt.*;
-
- class Calculator extends JFrame {

- private Checkbox ckbox1;
- private Checkbox ckbox2;
- private Checkbox ckbox3;
- private Checkbox ckbox4;
-
-
-
- Calculator() {
- setSize(300, 100);
- setTitle("RadioButton Test");
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
- setLayout(new FlowLayout());
- initComponents();
- }
-
- public void initComponents() {
-
- ckbox1=new Checkbox("Plain");
- ckbox2=new Checkbox("Bold");
- ckbox3=new Checkbox("Italic");
- ckbox4=new Checkbox("Bold/Italic");
-
- add(ckbox1);
- add(ckbox2);
- add(ckbox3);
- add(ckbox4);
-
- }
-
- public static void main(String args[]) {
- new Calculator().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 Calculator extends JFrame {
● private JComboBox<String> combox1, combox2, combox3;
● private JLabel label1, label2;
● private JPanel panel1, panel2;
●
● public Calculator() {
● setSize(300, 150); // Adjusted height to accommodate labels
● setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
● setLocationRelativeTo(null);
●
● initComponents();
● }
●
● public void initComponents() {
● label2 = new JLabel("Combo Box Demo");
● label2.setFont(new Font("Serif", Font.ITALIC, 30));
● panel2=new JPanel(new FlowLayout(FlowLayout.CENTER)); ● label1
= new JLabel("Date");
●
● String[] years = {"2013", "2014", "2015", "2016", "2017"};
● String[] months = {"April", "Feb", "March", "July", "May"};
● String[] days = {"6", "2", "3", "4", "5"};
●
●
● panel1 = new JPanel(new FlowLayout());
● panel2 = new JPanel(new BorderLayout());
●
● combox1 = new JComboBox<>(years);
● combox2 = new JComboBox<>(months);
● combox3 = new JComboBox<>(days);
●
● panel1.add(label1);
● panel1.add(combox1);
● panel1.add(combox2);
● panel1.add(combox3);
●
● panel2.add(label2, BorderLayout.NORTH);
●
● add(panel1, BorderLayout.CENTER);
● add(panel2, BorderLayout.NORTH);
● }
● public static void main(String args[]) {

● new Calculator().setVisible(true);
● }
● }
●
●
●
●
///
///////

26. Write java program to create an Equalizer.

● import javax.swing.*;
● import java.awt.*;
● import java.awt.event.*;
● import javax.swing.event.*;
●
● class Calculator extends JFrame {
● private JSlider slider1;
● private JSlider slider2;
● private JSlider slider3;
● private JSlider slider4;
● private JSlider slider5;
● private JSlider slider6;
● private JSlider slider7;
● private JSlider slider8;
● private JSlider slider9;
● private JSlider slider10;
● private JLabel label1;
● private JPanel panel1;
● private JPanel panel2;
●
● public Calculator() {
● setSize(350, 300);
● setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE); ● setLocationRelativeTo(null);
●
● initComponents();
● }
●
● public void initComponents() {
● label1 = new JLabel("Equalizer");
● label1.setFont(new Font("Serif", Font.ITALIC, 20)); ●

● panel1 = new JPanel(new FlowLayout(FlowLayout.CENTER)); ●
panel2 = new JPanel(new GridLayout(1, 10)); ●
● slider1 = new JSlider(JSlider.VERTICAL);
● slider2 = new JSlider(JSlider.VERTICAL);
● slider3 = new JSlider(JSlider.VERTICAL);
● slider4 = new JSlider(JSlider.VERTICAL);
● slider5 = new JSlider(JSlider.VERTICAL);
● slider6 = new JSlider(JSlider.VERTICAL);
● slider7 = new JSlider(JSlider.VERTICAL);
● slider8 = new JSlider(JSlider.VERTICAL);
● slider9 = new JSlider(JSlider.VERTICAL);
● slider10 = new JSlider(JSlider.VERTICAL);
●
● slider1.setPaintTicks(true);
● slider2.setPaintLabels(true);
● slider3.setPaintTicks(true);
● slider4.setPaintLabels(true);
● slider5.setPaintTicks(true);
● slider6.setPaintLabels(true);
● slider7.setPaintTicks(true);
● slider8.setPaintLabels(true);
● slider9.setPaintTicks(true);
● slider10.setPaintLabels(true);
●
● panel1.add(label1);
● panel2.add(slider1);
● panel2.add(slider2);
● panel2.add(slider3);
● panel2.add(slider4);
● panel2.add(slider5);
● panel2.add(slider6);
● panel2.add(slider7);
● panel2.add(slider8);
● panel2.add(slider9);
● panel2.add(slider10);
●
● setLayout(new BorderLayout());
● add(panel1, BorderLayout.NORTH);
● add(panel2, BorderLayout.CENTER);
● }
● }
●
● class Main {

- public static void main(String args[]) {
- new Calculator().setVisible(true);
- }
- }

//
///////

27. Create the following user interface:

- import javax.swing.*;
- import java.awt.*;
-
-
- class Calculator extends JFrame {
- private JTextField txt1;
- private JTextField txt2;
- private JTextField txt3; // Initialize txt3
- private JComboBox<String> c3;
- private Checkbox b1;
- private JButton btn1;
- private JButton btn2;
- private JButton btn3;
- private JLabel l1;
- private JLabel l2;
- private JLabel l3;
- private JLabel l4;
- private JPanel p1;
- private JPanel p2;
- private JPanel p3;
- private JPanel p4;
- private JPanel p5;
-
- Calculator() {
- setSize(400, 300);
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE); ● setLocationRelativeTo(null);
-
- initComponents();
- }
-
- public void initComponents() {

● l1 = new JLabel("User Name: ");
● l2 = new JLabel("Password: ");
● l3 = new JLabel("Database: ");
● l4 = new JLabel("Encryption Status: Unencrypted"); ● c3 = new JComboBox<>(new String[]{"Common", "private"}); ● b1 = new Checkbox("Remember Password"); ● txt1 = new JTextField();
● txt2 = new JTextField();
● txt3 = new JTextField();
● btn1 = new JButton("OK");
● btn2 = new JButton("Close");
● btn3 = new JButton("Help");
● p1 = new JPanel(new GridLayout(3, 1));
● p2 = new JPanel(new GridLayout(4, 1, 15, 15)); ● p3 = new JPanel(new FlowLayout(FlowLayout.LEFT)); ● p4 = new JPanel(new GridLayout(3, 1, 15, 15)); ● p5 = new JPanel(new GridLayout(3, 1, 15, 15)); ●
● setLayout(new BorderLayout());
● add(p1, BorderLayout.WEST);
● p1.add(l1);
● p1.add(l2);
● p1.add(l3);
● add(p2, BorderLayout.CENTER);
● p2.add(txt1);
● p2.add(txt2);
● p2.add(c3);
● p2.add(b1);
● add(p3, BorderLayout.SOUTH);
● p3.add(l4);
● add(p4, BorderLayout.EAST);
● p4.add(btn1);
● p4.add(btn2);
● p4.add(btn3);
●
● Dimension txtSize = new Dimension(60, 20);
● txt1.setPreferredSize(txtSize);
● txt2.setPreferredSize(txtSize);
● txt3.setPreferredSize(txtSize);
●
● Dimension btnSize = new Dimension(80, 30);
● btn1.setPreferredSize(btnSize);
● btn2.setPreferredSize(btnSize);
● btn3.setPreferredSize(btnSize);
● }

- }
-
- class Main {
- public static void main(String args[]) {
- new Calculator().setVisible(true);
- }
- }
-
-

//
///////

28. Make the following:

- import javax.swing.*;
- import java.awt.*;
-
- class Calculator extends JFrame {
- private JRadioButton r1;
- private JRadioButton r2;
- private JRadioButton r3;
- private JRadioButton r4;
- private JRadioButton r5;
- private ButtonGroup buttonGroup;
- private JLabel pig;
-
- Calculator() {
- setSize(200, 250);
- setTitle("RadioButtonDemo");
-
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
-
- initComponents();
- }
-
- public void initComponents() {
- setLayout(new GridLayout(6, 1));
-
- r1 = new JRadioButton("Bird");
- r2 = new JRadioButton("Cat");
- r3 = new JRadioButton("Dog");
- r4 = new JRadioButton("Rabbit");

- r5 = new JRadioButton("Pig");
-
- add(r1);
- add(r2);
- add(r3);
- add(r4);
- add(r5);
-
- pig = new JLabel(new ImageIcon("pig_image.jpg"));
- add(pig);
- }
- }
- class Main {
- public static void main(String args[]) {
- new Calculator().setVisible(true);
- }
- }
-
-
-

///

29. Create a menu bar and toolbar:

///

30. Create an employee details form as follows:

///

31. JSlider Example:

- import javax.swing.*;
- import java.awt.*;
-
- class Calculator extends JFrame {
- private JSlider slider;
-
- Calculator() {
- setSize(200, 100);
- setTitle("Slider Example");

- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
-
- setLayout(new FlowLayout());
-
- initComponents();
- }
-
- public void initComponents() {
-
- slider = new JSlider(JSlider.HORIZONTAL, 0, 50, 25);
- slider.setMinorTickSpacing(2);
- slider.setMajorTickSpacing(10);
- slider.setPaintTicks(true);
- slider.setPaintLabels(true);
-
-
-
- add(slider);
- }
- }
-
-
- class Main {
- public static void main(String args[]) {
- new Calculator().setVisible(true);
- }
- }
-
-

//
///////

32. Various types of JSlider:
- import javax.swing.*;
- import java.awt.*;
-
- class Calculator extends JFrame {
-
- private JSlider j1;
- private JSlider j2;
- private JSlider j3;
- private JLabel label1;

- private JLabel label2;
- private JLabel label3;
- private JPanel panel1;
- private JPanel panel2;
- private JPanel panel3;
-
-
- Calculator() {
- setSize(400, 300);
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLocationRelativeTo(null);
-
- initComponents();
- }
-
- public void initComponents() {
- panel1 = new JPanel(new GridLayout(2,1));
- panel2 = new JPanel(new GridLayout(2,1));
- panel3 = new JPanel(new GridLayout(2,1));
- label1 = new JLabel("JSlider without Tick Markers");
- label2 = new JLabel("JSlider with Tick Markers");
- label3 = new JLabel("JSlider with Tick Markers & Labels");
-
- j1 = new JSlider(0,100,35);
-
- j2 = new JSlider(0,100,65);
- j2.setMinorTickSpacing(5);
- j2.setMajorTickSpacing(20);
- j2.setPaintTicks(true);
-
- j3 = new JSlider(0,100,25);
- j3.setMinorTickSpacing(5);
- j3.setMajorTickSpacing(20);
- j3.setPaintTicks(true);
- j3.setPaintLabels(true);
-
- setLayout(new BorderLayout());
- add(panel1, BorderLayout.NORTH);
- add(panel2, BorderLayout.CENTER);
- add(panel3, BorderLayout.SOUTH);
- panel1.add(label1);
- panel1.add(j1);
- panel2.add(label2);

- panel2.add(j2);
- panel3.add(label3);
- panel3.add(j3);
-
- }
- }
-
- class Main {
- public static void main(String args[]) {
- new Calculator().setVisible(true);
- }
- }
-
-
-

//

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

- import javax.swing.*;
- import java.awt.*;
- import java.awt.event.ActionEvent;
- import java.awt.event.ActionListener;
-
- class Calculator extends JFrame {
- private final String[] daysOfWeek = {"Monday", "Tuesday", "Wednesday", "Thursday", "Friday"};
- private final String[] timeSlots = {" ", " ", " "," ", " ", " ", " "," ", " ", " "}; ●
- private final JTextField[][] timetableCells;
-
- public Calculator() {
- setSize(550, 350);
- setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
- setLayout(new GridLayout(timeSlots.length + 1, daysOfWeek.length + 1)); ●
- for (String day : daysOfWeek) {
- add(new JLabel(day, SwingConstants.CENTER));
- }
-
- timetableCells = new JTextField[timeSlots.length][daysOfWeek.length]; ● for (int i = 0; i < timeSlots.length; i++) {
- add(new JLabel(timeSlots[i], SwingConstants.CENTER));

- for (int j = 0; j < daysOfWeek.length; j++) {
- timetableCells[i][j] = new JTextField();
- add(timetableCells[i][j]);
- }
- }
-
- setLocationRelativeTo(null);
- }
-
- }
- class Main{
- public static void main(String[] args) {
- new Calculator().setVisible(true);
-
- }
- }

//
///////

****