Shri Vile Parle Kelavani Mandal's
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

Academic Year: 2022-2023

Name – Prerna Sunil Jadhav **SAP ID - 60004220127**

Experiment No – 15

AIM: Develop simple swing applications and complex GUI using Java Swing classes. (CO6)

THEORY:

Swing in Java is a lightweight GUI toolkit which has a wide variety of widgets for building optimized window based applications. It is a part of the JFC(Java Foundation Classes). It is build on top of the AWT API and entirely written in java. It is platform independent unlike AWT and has lightweight components. It becomes easier to build applications since we already have GUI components like button, checkbox etc. This is helpful because we do not have to start from the scratch. Different methods of JFrame class are : public void add(Component c) : Inserts a component on this component. public void setSize(int width,int height) : Sets the size (width and height) of the component. public void setLayout(LayoutManager m) : Defines the layout manager for the component. public void setVisible(boolean status) : Changes the visibility of the component, by default false. An object of the java.awt.Font class represents a font in a Java program

Code (i): Write a program to create a window with four text fields for the name, street, city and pin code with suitable labels. Also windows contains a button MyInfo. When the user types the name, his street, city and pincode and then clicks the button, the types details must appear in Arial Font with Size 32, Italics.

Code1_Register.java

Exp15 > Code1_Register.java > Code1_Register > actionPerformed

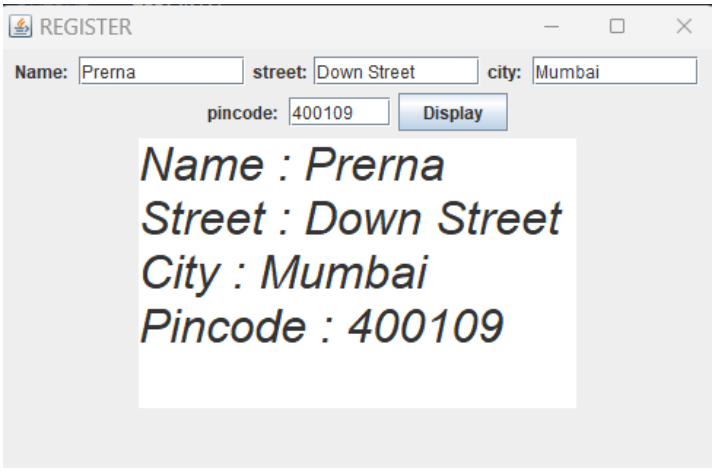
```
1   package Exp15;
2
3   import java.awt.*;
4   import javax.swing.*;
5   import java.awt.event.*;
6
7   class Code1_Register extends JFrame implements ActionListener {
8       Container c;
9       JLabel name, street, city, pincode;
10      JTextField tname, tstreet, tcity, tpincode;
11      JTextArea tout;
12      JButton MyInfo, btnClear, btnExit;
13      String sname, sstreet, scity, spincode;
14
15      Code1_Register() {
16          c = getContentPane();
17          c.setLayout(new FlowLayout());
18          // label
19          name = new JLabel(text: "Name: ");
20          street = new JLabel(text: "street:");
21          city = new JLabel(text: "city: ");
22          pincode = new JLabel(text: "pincode: ");
```

```
        // text fields
        tname = new JTextField(columns: 10);
        tstreet = new JTextField(columns: 10);
        tcity = new JTextField(columns: 10);
        tpincode = new JTextField(columns: 6);
        // buttons
        MyInfo = new JButton(text: "Display");
        c.add(name);
        c.add(tname);
        c.add(street);
        c.add(tstreet);
        c.add(city);
        c.add(tcity);
        c.add(pincode);
        c.add(tpincode);
        c.add(MyInfo);
        tout = new JTextArea();
        tout.setFont(new Font(name: "Arial", Font.ITALIC, size: 32));
        tout.setSize(width: 300, height: 400);
        tout.setLocation(x: 100, y: 500);
        tout.setLineWrap(wrap: true);
        tout.setEditable(b: false);
        c.add(tout);
        MyInfo.addActionListener(this);
    }

    public void actionPerformed(ActionEvent e) {
        if (e.getSource() == MyInfo) {
            sname = tname.getText();
            scity = tcity.getText();
            sstreet = tstreet.getText();
            spincode = tpincode.getText();
            if (sname.equals(anObject: "") || sstreet.equals(anObject: "") ||
                    scity.equals(anObject: "") ||
                    spincode.equals(anObject: "")) {
                JOptionPane.showMessageDialog(c, message: "Input field is empty !!");
                tname.requestFocus();
            } else {
                String data = "Name : " + tname.getText() + "\n" +
                        "Street : " + tstreet.getText() + "\n" + "City : "
                        + tcity.getText() + "\n" + "Pincode : " +
                        tpincode.getText() + "\n";
                tout.setText(data);
                tout.setEditable(b: false);
            }
```

```
68          } else if (e.getSource() == btnClear) {
69              tname.setText(t: "");
70              tpincode.setText(t: "");
71              tstreet.setText(t: "");
72              tcity.setText(t: "");
73              tname.requestFocus();
74          } else {
75              System.exit(status: 0);
76          }
77      }
        Run | Debug
78      public static void main(String[] args) {
79          Code1_Register frm = new Code1_Register();
80          frm.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
81          frm.setBounds(x: 200, y: 200, width: 400, height: 300);
82          frm.setVisible(b: true);
83          frm.setTitle(title: "REGISTER");
84      }
85  }
```

OUTPUT:



Theory:

Interface ActionListener : The listener interface for receiving action events. The class that is interested in processing an action event implements this interface, and the object created with that class is registered with a component, using the component's addActionListener method. When the action event occurs, that object's actionPerformed method is invoked. The EventObject contains the getSource( ) method.Suppose you have many buttons in your application. So, you can find which button is clicked by using the getSource() method. The getSource( ) method returns the source of the event. Java CollationElementIterator setText(String source) Set a new string over which to iterate.

Code (ii): WA applet with 4 swing buttons with suitable texts on them. When the user presses a button a message should appear in the label as to which button was pressed by the user

Code2_Buttons.java

Exp15 > Code2_Buttons.java > Code2_Buttons > Code2_Buttor

```
1   package Exp15;
2
3   import java.awt.*;
4   import javax.swing.*;
5   import java.awt.event.*;
6
7   public class Code2_Buttons extends JFrame implements ActionListener {
8       Container c;
9       JButton btnHi, btnHowareyou, btnPrerna, btnGladtomeet;
10      JLabel label;
11
12      Code2_Buttons() {
13          c = getContentPane();
14          c.setLayout(mgr: null);
15          btnHi = new JButton(text: "Hi");
16          btnPrerna = new JButton(text: "Prerna");
17          btnGladtomeet = new JButton(text: "Glad to meet");
18          btnHowareyou = new JButton(text: "How are you?");
19          label = new JLabel(text: " ");
20          label.setSize(width: 200, height: 60);
21          btnHi.setLocation(x: 100, y: 50);
22          btnPrerna.setLocation(x: 100, y: 110);
23          btnGladtomeet.setLocation(x: 100, y: 170);
24          btnHowareyou.setLocation(x: 100, y: 230);
25          btnHi.setSize(width: 100, height: 50);
26          btnPrerna.setSize(width: 100, height: 50);
27          btnGladtomeet.setSize(width: 100, height: 50);
28          btnHowareyou.setSize(width: 100, height: 50);
29          c.add(btnHi);
30          c.add(btnPrerna);
31          c.add(btnGladtomeet);
32          c.add(btnHowareyou);
33          c.add(label);
34          btnHi.addActionListener(this);
35          btnPrerna.addActionListener(this);
36          btnGladtomeet.addActionListener(this);
```

```
37          btnHowareyou.addActionListener(this);
38      }
39
        Run | Debug
40      public static void main(String[] args) {
41          Code2_Buttons frm = new Code2_Buttons();
42          frm.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
43          frm.setBounds(x: 200, y: 200, width: 400, height: 500);
44          frm.setVisible(b: true);
45          frm.setTitle(title: "click me");
46      }
47
48      public void actionPerformed(ActionEvent e) {
49          if (e.getSource() == btnHi) {
50              label.setText(text: "Hi");
51              label.setLocation(x: 220, y: 50);
52          }
53          if (e.getSource() == btnPrerna) {
54              label.setText(text: "Prerna?");
55              label.setLocation(x: 220, y: 110);
56          }
57          if (e.getSource() == btnGladtomeet) {
58              label.setText(text: "Glad to meet");
59              label.setLocation(x: 220, y: 160);
60          }
61          if (e.getSource() == btnHowareyou) {
62              label.setText(text: "How are you");
63              label.setLocation(x: 220, y: 230);
64          }
65      }
66  }
```

OUTPUT: