INSTITUTE OF TECHNOLOGY AND MANAGEMENT SKILLS UNIVERSITY, KHARGHAR, NAVI MUMBAI

Java

Assignment 5

Prepared by:

Name of Student : Chaitanya Dalvi

Roll No: 19

Batch: 2023-27

Dept. of CSE

Name of Student: Chaitanya Dalvi

Roll Number: 19

Experiment No: 1

Title:WAP to create a frame using Association.

Code:

```java
import javax.swing.*;
class Frame {
    JFrame frame;
    JButton button;

    Frame() {
        frame = new JFrame("Association Example");
        button = new JButton("Click Me");
        button.setBounds(50,100,100,50);
        frame.setSize(400, 400);
        frame.setLayout(null);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setVisible(true);
        frame.add(button);
    }
}

public class FrameAssociation {
    public static void main(String[] args) {
        Frame frame = new Frame();
    }
}
```

Output: (screenshot)
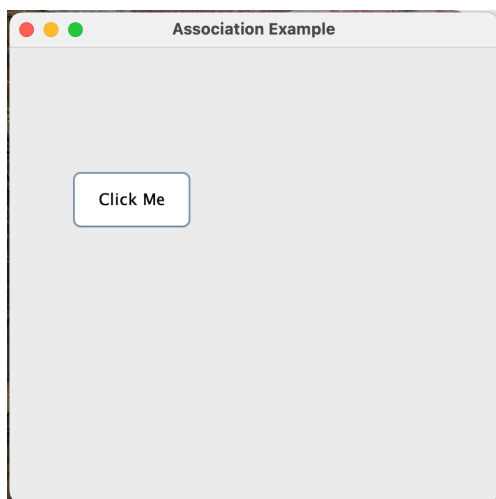
Name of Student: Chaitanya Dalvi

Roll Number: 19

Experiment No: 2

Title:WAP to create a frame using Inheritance.
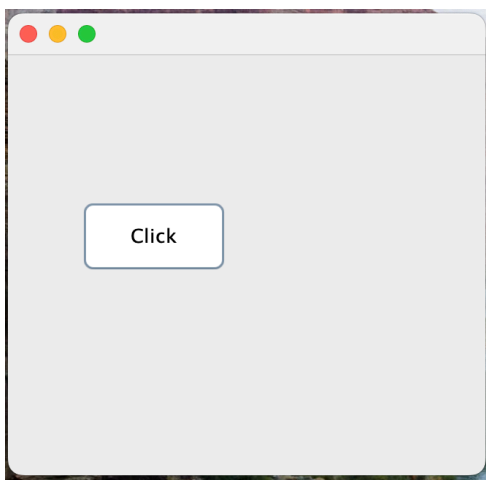
```java
import javax.swing.*;

class Frame extends JFrame {
    JButton button;

    Frame() {
        button = new JButton("Click");
        button.setBounds(50,100,100,50);
        setSize(400, 400);
        setLayout(null);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setVisible(true);
        add(button);
    }
}

public class FrameInheritance {
    public static void main(String[] args) {
        new Frame();
    }
}
```

Output: (screenshot)

Name of Student: Chaitanya Dalvi

Roll Number: 19

Experiment No: 3

Title:Write an swing GUI application as shown in the Figure. Each time the "Count" button is

**clicked, the counter value shall increase by 1.**

```java
import javax.swing.*;

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

public class FrameCounter {
    FrameCounter() {
        JFrame counter = new JFrame("Swing Counter");
        JButton button = new JButton("Count");
        JTextField textField = new JTextField(10);
        JLabel label = new JLabel("Counter");
        textField.setText("0");
        button.addActionListener(
                new ActionListener() {
                    public void actionPerformed(ActionEvent e) {
                        int res =
Integer.parseInt(textField.getText());
                        textField.setText(Integer.toString(res +
1));
                    }
                });
        counter.add(label);
        counter.add(textField);
        counter.add(button);
        counter.setSize(400, 400);
        counter.setLayout(new FlowLayout());
        counter.setVisible(true);
        counter.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }

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

Output: (screenshot)
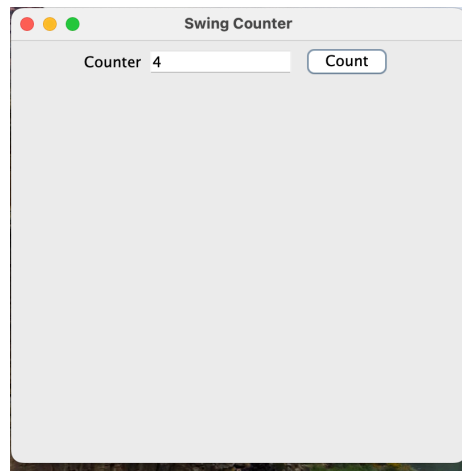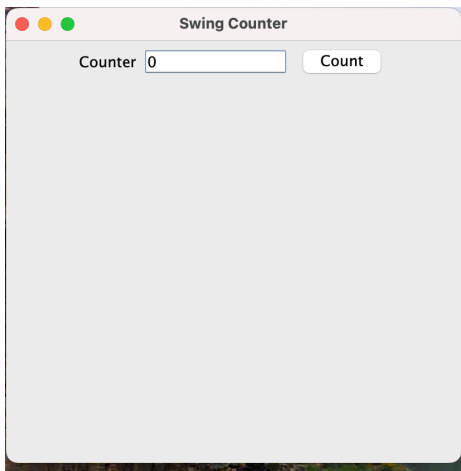
Name of Student: Chaitanya Dalvi

Roll Number: 19

Experiment No: 4

Title:Write a Swing application to design a basic calculator to add and subtract numbers.

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

public class SimpleCalculator {
    public static void main(String[] args) {
        JFrame f = new JFrame("Simple Calculator");
        JButton b = new JButton("Add");
        JButton b1 = new JButton("Subtract");
        JButton b2 = new JButton("Reset");
        JTextField tf1 = new JTextField(10);
        JLabel l1 = new JLabel("Enter first number: ");
        JTextField tf2 = new JTextField(10);
        JLabel l2 = new JLabel("Enter second number: ");
        JLabel l3 = new JLabel("Result: ");
        JTextField tf3 = new JTextField(10);

        b.addActionListener(
                new ActionListener() {
                    public void actionPerformed(ActionEvent e) {
                        int num1 = Integer.parseInt(tf1.getText());
                        int num2 = Integer.parseInt(tf2.getText());
                        int res = num1 + num2;
                        tf3.setText(String.valueOf(res));
                    }
                });

        b1.addActionListener(
                new ActionListener() {
                    public void actionPerformed(ActionEvent e) {
                        int num1 = Integer.parseInt(tf1.getText());
                        int num2 = Integer.parseInt(tf2.getText());
                        int res = num1 - num2;
                        tf3.setText(String.valueOf(res));
                    }
                });

        b2.addActionListener(
                new ActionListener() {
```

```java
        public void actionPerformed(ActionEvent e) {
            tf1.setText("");
            tf2.setText("");
            tf3.setText("");
        }
    });

    f.add(l1);
    f.add(tf1);
    f.add(l2);
    f.add(tf2);
    f.add(b2);
    f.add(l3);
    f.add(tf3);
    f.add(b);
    f.add(b1);
    f.setSize(400, 500);
    f.setLayout(new FlowLayout());
    f.setVisible(true);
    f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}
```
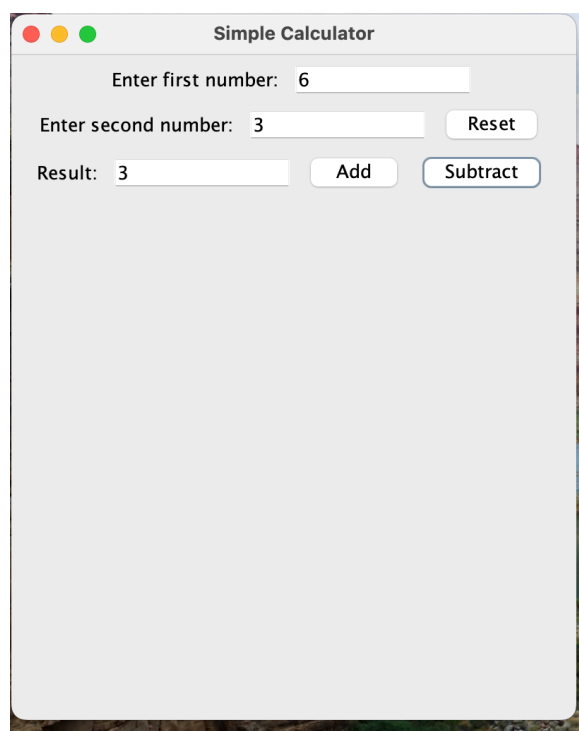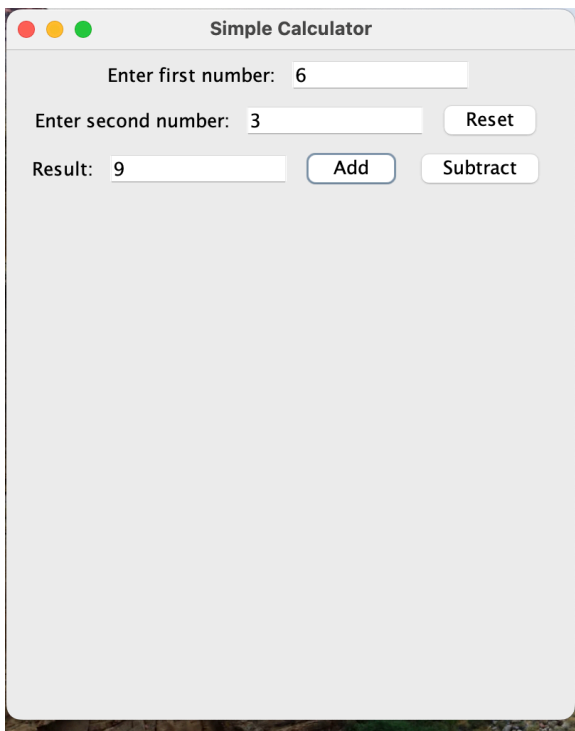
Output: (screenshot)

Name of Student: Chaitanya Dalvi

Roll Number: 19

Experiment No: 5

Title:Create a Swing application that include buttons "+", "-", "*", "/", "%" (remainder) and

"CLEAR" as shown and perform arithmetic operations.

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

public class SwingArithmetics {
    public static void main(String[] args) {
        JFrame f = new JFrame("Swing Arithmetics");
        JButton b = new JButton("+");
        JButton b1 = new JButton("-");
        JButton b2 = new JButton("*");
        JButton b3 = new JButton("/");
        JButton b4 = new JButton("%");
        JButton b5 = new JButton("CLEAR");
        JTextField tf1 = new JTextField(10);
        JLabel l1 = new JLabel("First Number");
        JTextField tf2 = new JTextField(10);
        JLabel l2 = new JLabel("Second Number");
        JLabel l3 = new JLabel("Result");
        JTextField tf3 = new JTextField(10);

        b.addActionListener(
                new ActionListener() {
                    public void actionPerformed(ActionEvent e) {
                        int num1 = Integer.parseInt(tf1.getText());
                        int num2 = Integer.parseInt(tf2.getText());
                        int res = num1 + num2;
                        tf3.setText(String.valueOf(res));
                    }
                });

        b1.addActionListener(
                new ActionListener() {
                    public void actionPerformed(ActionEvent e) {
                        int num1 = Integer.parseInt(tf1.getText());
                        int num2 = Integer.parseInt(tf2.getText());
                        int res = num1 - num2;
                        tf3.setText(String.valueOf(res));
                    }
                });
```

```java
b2.addActionListener(
        new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                int num1 = Integer.parseInt(tf1.getText());
                int num2 = Integer.parseInt(tf2.getText());
                int res = num1 * num2;
                tf3.setText(String.valueOf(res));
            }
        });

b3.addActionListener(
        new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                int num1 = Integer.parseInt(tf1.getText());
                int num2 = Integer.parseInt(tf2.getText());
                int res = num1 / num2;
                tf3.setText(String.valueOf(res));
            }
        });

b4.addActionListener(
        new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                int num1 = Integer.parseInt(tf1.getText());
                int num2 = Integer.parseInt(tf2.getText());
                int res = num1 % num2;
                tf3.setText(String.valueOf(res));
            }
        });

b5.addActionListener(
        new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                tf1.setText("");
                tf2.setText("");
                tf3.setText("");
            }
        });

f.add(l1);
f.add(tf1);
f.add(l2);
f.add(tf2);
f.add(l3);
f.add(tf3);
f.add(b);
f.add(b1);
f.add(b2);
```
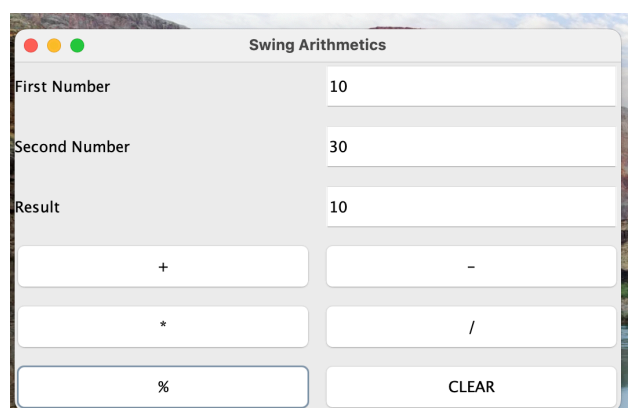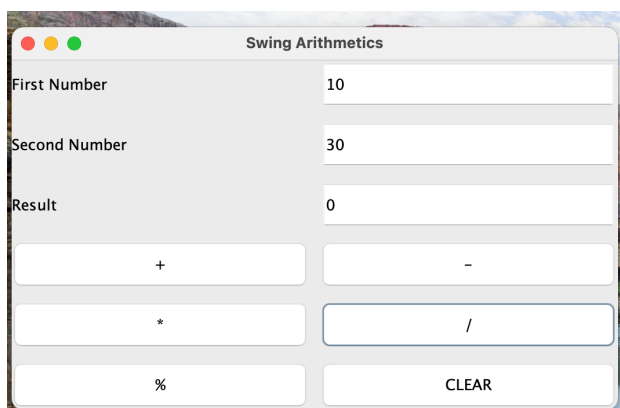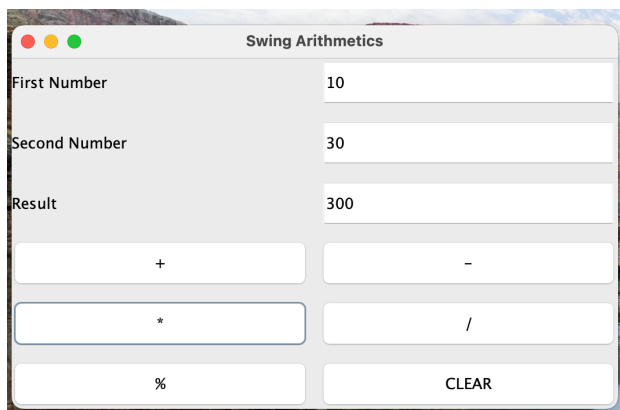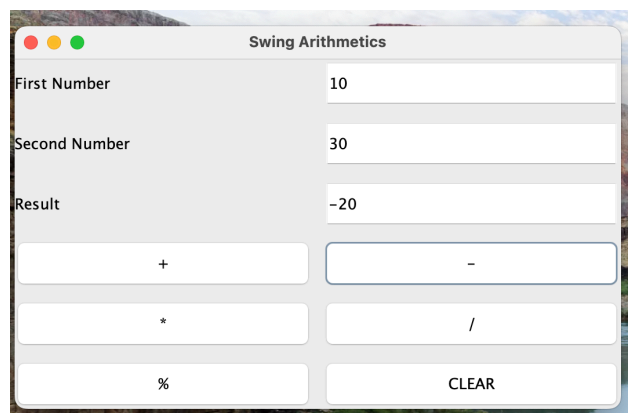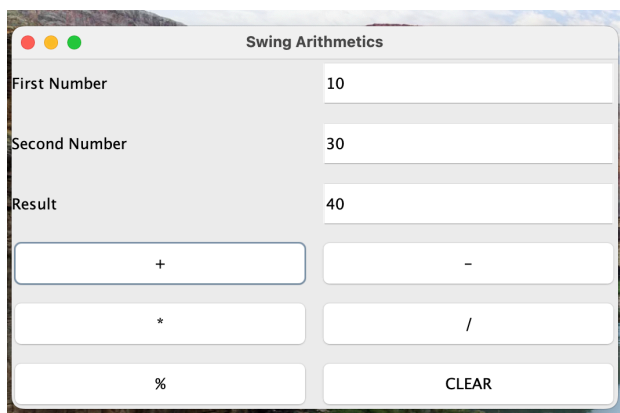
```
        f.add(b3);
        f.add(b4);
        f.add(b5);
        f.setSize(400, 300);
        f.setLayout(new GridLayout(6, 2, 10, 10));
        f.setVisible(true);
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}
```

Output: (screenshot)

Name of Student: Chaitanya Dalvi

Roll Number: 19

Experiment No: 6

Title: Create a Swing application that calculates a square of a number.

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

public class SquareCalculator {
    public static void main(String[] args) {
        JFrame f = new JFrame("Square Calculator");
        JButton b = new JButton("Calculate square");
        JButton b1 = new JButton("Reset");
        JTextField tf = new JTextField(10);
        JLabel l = new JLabel("Enter a number: ");

        l.setBounds(50, 50, 150, 20);
        tf.setBounds(150, 50, 150, 20);
        b.setBounds(50, 100, 150, 30);
        b1.setBounds(200, 100, 95, 30);

        b.addActionListener(
                new ActionListener() {
                    public void actionPerformed(ActionEvent e) {
                        int num = Integer.parseInt(tf.getText());
                        int res = num * num;
                        tf.setText(String.valueOf(res));
                    }
                });

        b1.addActionListener(
                new ActionListener() {
                    public void actionPerformed(ActionEvent e) {
                        tf.setText("");
                    }
                });
        f.add(l);
        f.add(tf);
        f.add(b);
        f.add(b1);
        f.setSize(400, 500);
        f.setLayout(null);
        f.setVisible(true);
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}
```
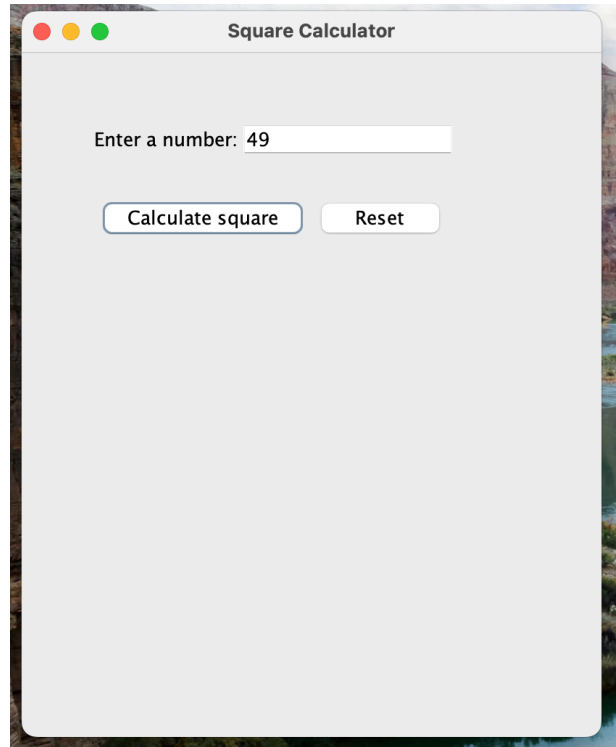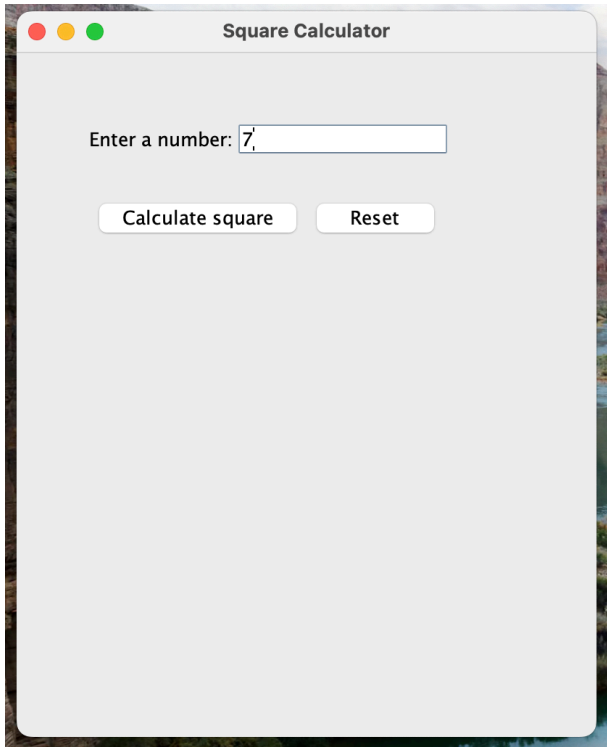
}

Output: (screenshot)

**Q7.Create a Swing application that creates two radio button "Male",
"Female". If a user selects a radio button, the application displays a dialog
box as per user's choice.**

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

public class GenderRadio extends JFrame {
    GenderRadio() {
        JRadioButton r1 = new JRadioButton("Male");
        JRadioButton r2 = new JRadioButton("Female");
        JButton b = new JButton("Click");
        r1.setBounds(100, 50, 100, 30);
        r2.setBounds(100, 100, 100, 30);
        ButtonGroup bg = new ButtonGroup();
        b.addActionListener(
                new ActionListener() {
                    public void actionPerformed(ActionEvent e) {
                        if (r1.isSelected()) {
                            JOptionPane.showMessageDialog(null,
"You selected Male");
                        }
                        if (r2.isSelected()) {
                            JOptionPane.showMessageDialog(null,
"You selected Female");
                        }
                    }
                });
        bg.add(r1);
        bg.add(r2);
        add(r1);
        add(r2);
        add(b);
        setSize(300, 300);
        setLayout(new FlowLayout());
        setVisible(true);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
    public static void main(String[] args) {
        new GenderRadio();
    }
}
```

}

Output: (screenshot)
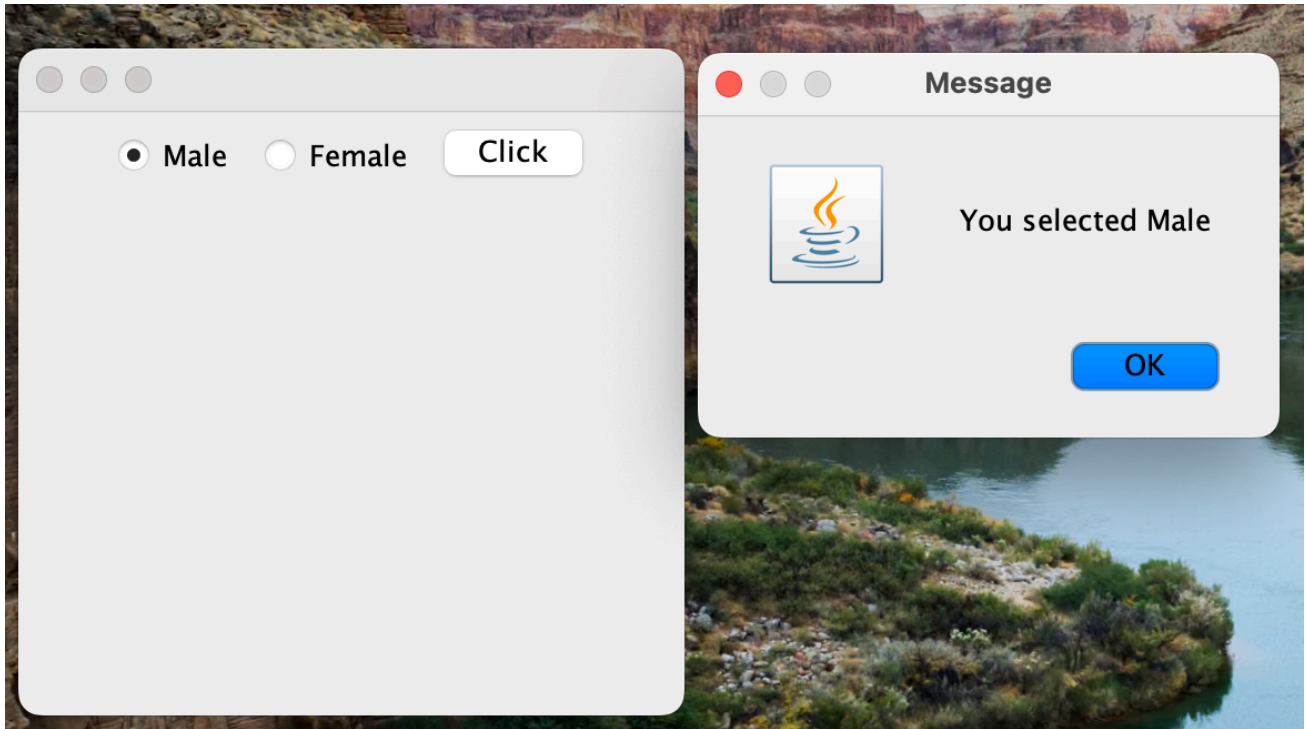
Name of Student: Chaitanya Dalvi
Roll Number: 19

Experiment No: 8

Title:Create a Swing application that creates two check boxes. Depending on the user selection of check boxes, message should be displayed.

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

public class CheckBoxEx extends JFrame {
    CheckBoxEx() {
        JCheckBox c1 = new JCheckBox("C++");
        JCheckBox c2 = new JCheckBox("Java");
        JLabel l1 = new JLabel("C++ Checkbox: unchecked");
        JLabel l2 = new JLabel("Java Checkbox: unchecked");

        c1.addItemListener(
                new ItemListener() {
                    public void itemStateChanged(ItemEvent e) {
                        if (e.getStateChange() ==
ItemEvent.SELECTED) {
                            l1.setText("C++ Checkbox: checked");
                        } else {
                            l1.setText("C++ Checkbox: unchecked");
                        }
                    }
                });

        c2.addItemListener(
                new ItemListener() {
                    public void itemStateChanged(ItemEvent e) {
                        if (e.getStateChange() ==
ItemEvent.SELECTED) {
                            l2.setText("Java Checkbox: checked");
                        } else {
                            l2.setText("Java Checkbox: unchecked");
                        }
                    }
                });

        add(l1);
        add(l2);
        add(c1);
        add(c2);
```
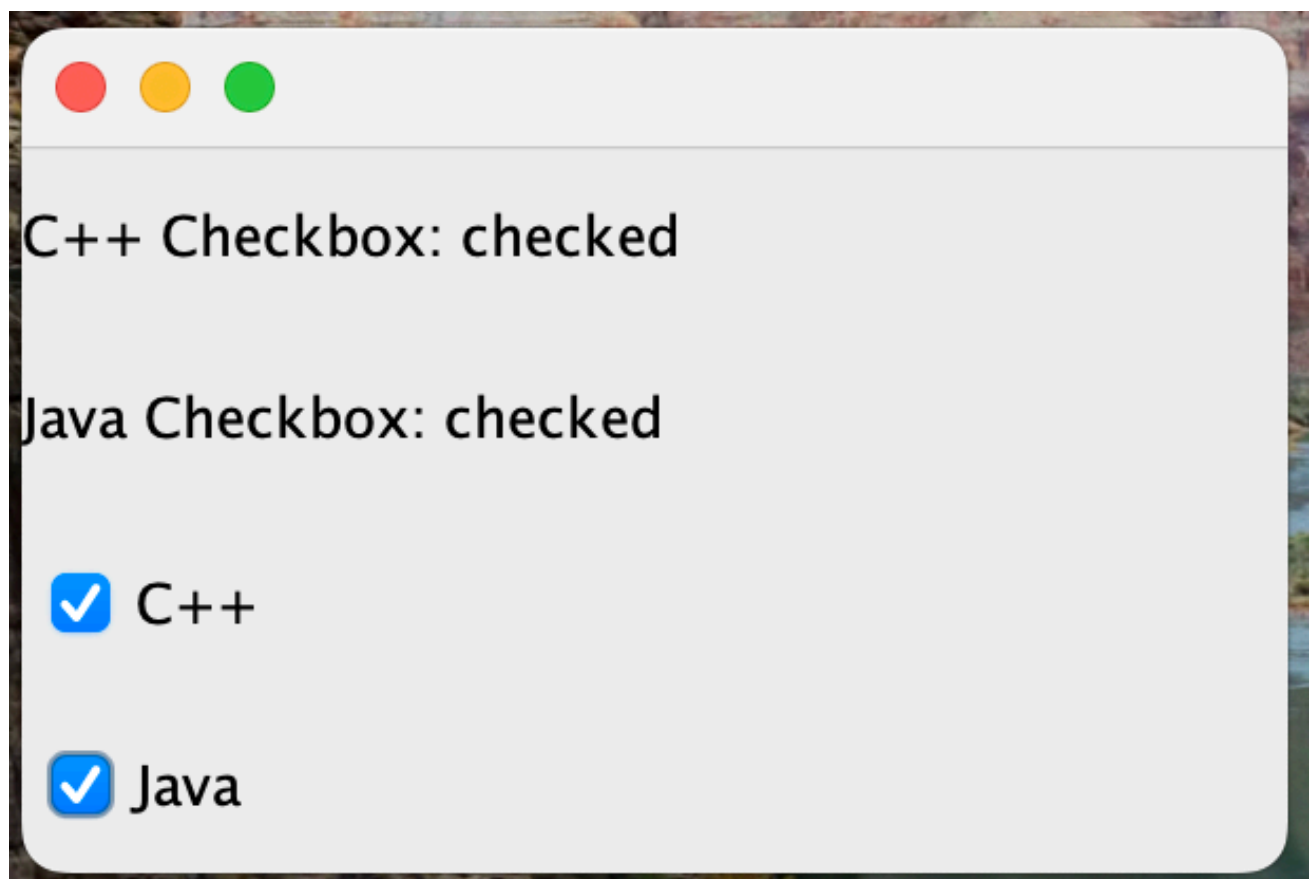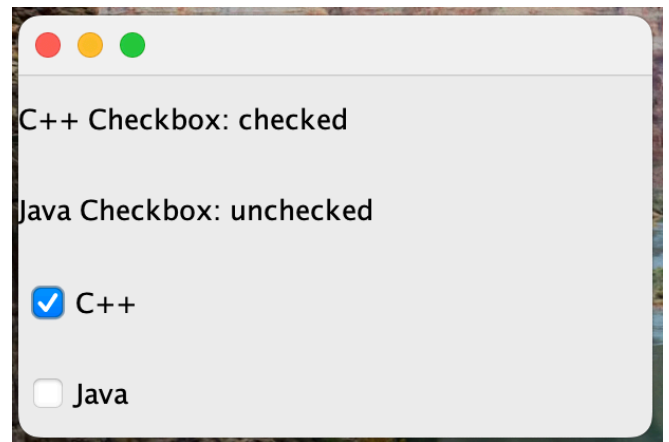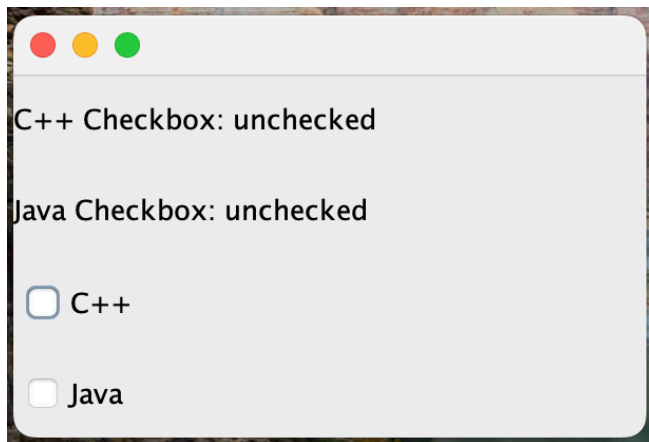
```java
        setSize(300, 200);
        setLayout(new GridLayout(4, 1));
        setVisible(true);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }

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

Output: (screenshot)
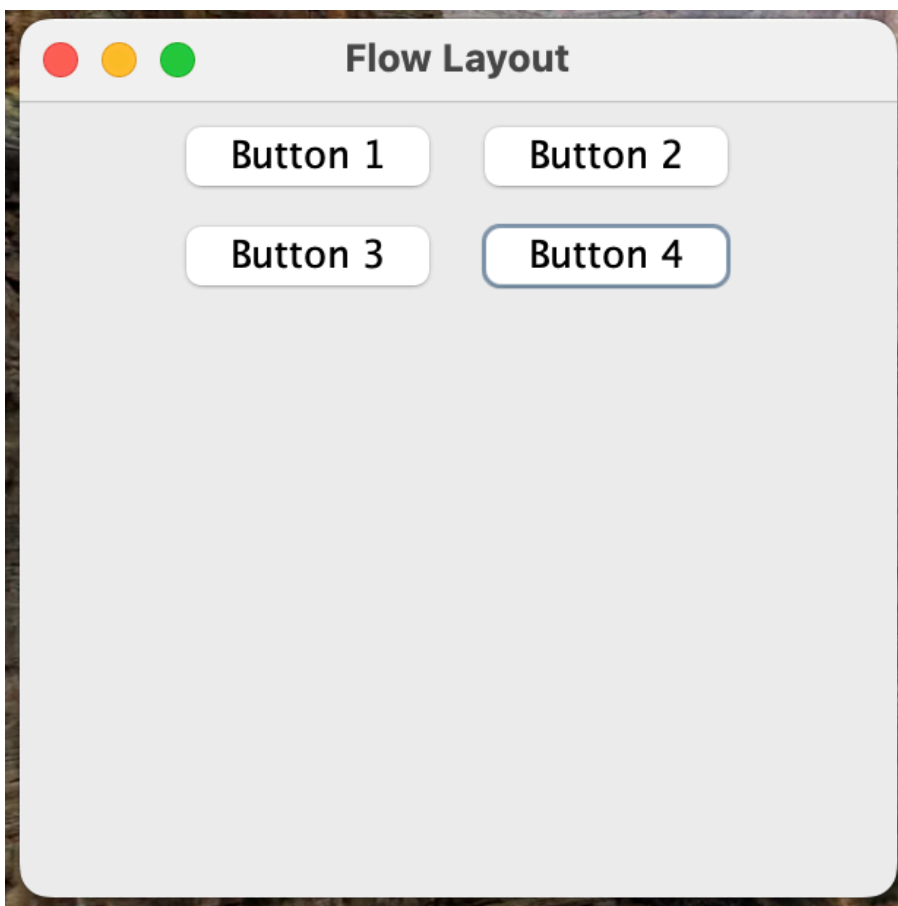
Name of Student: Chaitanya Dalvi

Roll Number: 19

Experiment No: 9

Title:Create a Swing application to demonstrate the flow layout.

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

public class FlowLayoutEx {
    public static void main(String[] args) {
        JFrame frame = new JFrame("Flow Layout");
        frame.add(new JButton("Button 1"));
        frame.add(new JButton("Button 2"));
        frame.add(new JButton("Button 3"));
        frame.add(new JButton("Button 4"));
        frame.setSize(300, 300);
        frame.setLayout(new FlowLayout());
        frame.setVisible(true);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}
```

Output: (screenshot)
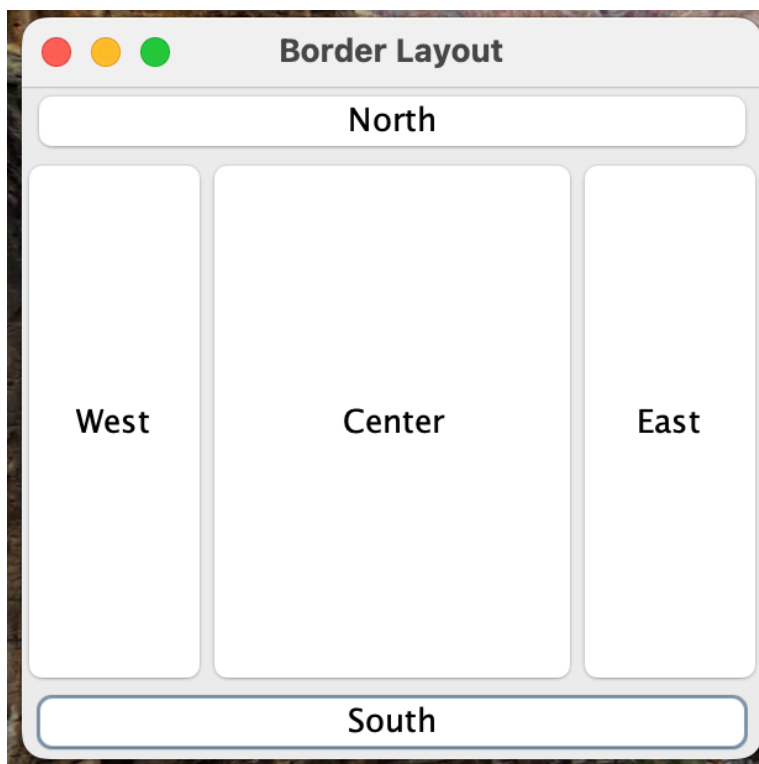
Name of Student: Chaitanya Dalvi

Roll Number: 19

Experiment No: 10

Title: Create a Swing application to demonstrate the border layout.

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

public class BorderLayoutEx {
    public static void main(String[] args) {
        JFrame frame = new JFrame("Border Layout");
        JButton b1=new JButton("North");
        JButton b2=new JButton("South");
        JButton b3=new JButton("East");
        JButton b4=new JButton("West");
        JButton b5=new JButton("Center");
        frame.add(b1, BorderLayout.NORTH);
        frame.add(b2, BorderLayout.SOUTH);
        frame.add(b3, BorderLayout.EAST);
        frame.add(b4, BorderLayout.WEST);
        frame.add(b5, BorderLayout.CENTER);
        frame.setSize(300, 300);
        frame.setVisible(true);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}
```

Output: (screenshot)
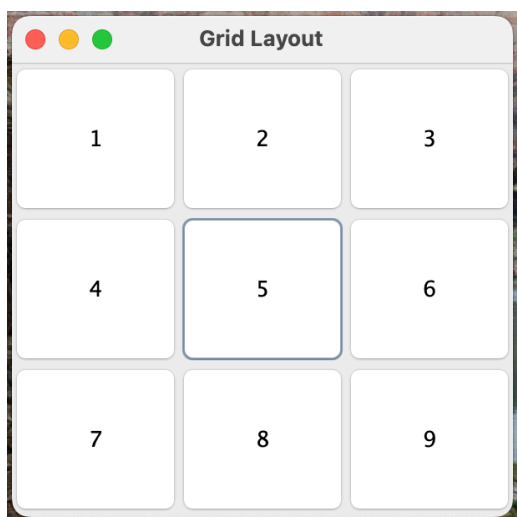
Name of Student: Chaitanya Dalvi

Roll Number: 19

Experiment No: 11

Title:Create a Swing application to demonstrate the grid layout.

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

public class GridLayoutEx {
    public static void main(String[] args) {
        JFrame frame = new JFrame("Grid Layout");
        frame.setLayout(new GridLayout(3, 3));
        JButton b1=new JButton("1");
        JButton b2=new JButton("2");
        JButton b3=new JButton("3");
        JButton b4=new JButton("4");
        JButton b5=new JButton("5");
        JButton b6=new JButton("6");
        JButton b7=new JButton("7");
        JButton b8=new JButton("8");
        JButton b9=new JButton("9");
        frame.add(b1);
        frame.add(b2);
        frame.add(b3);
        frame.add(b4);
        frame.add(b5);
        frame.add(b6);
        frame.add(b7);
        frame.add(b8);
        frame.add(b9);
        frame.setSize(300, 300);
        frame.setVisible(true);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}
```

Output: (screenshot)

Name of Student: Chaitanya Dalvi

Roll Number: 19

Experiment No: 12

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

public class JPanelEx {
    public static void main(String[] args) {
        JFrame f = new JFrame("Panel Example");
        JPanel panel = new JPanel();
        panel.setBounds(40, 80, 200, 200);
        panel.setBackground(Color.gray);
        JButton b1 = new JButton("Button 1");
        b1.setBounds(50, 100, 80, 30);
        JButton b2 = new JButton("Button 2");
        b2.setBounds(100, 100, 80, 30);
        panel.add(b1);
        panel.add(b2);
        f.add(panel);
        f.setSize(300, 300);
        f.setVisible(true);
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }

}
```

Output: (screenshot)