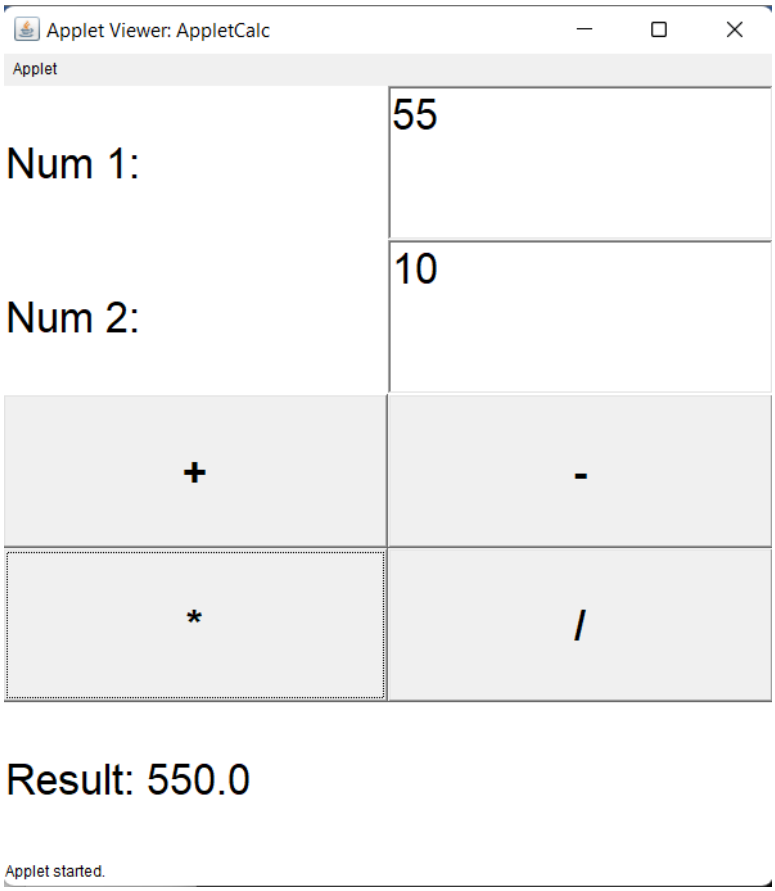
Question 2

Write an applet program in Java to implement a simple calculator.

```
import java.applet.*;
import java.awt.*;
import java.awt.event.*;

/* <applet code = "AppletCalc" width = 600 height = 600>
</applet>
 */

public class AppletCalc extends Applet implements ActionListener {
    private TextField input1 = new TextField(10);
    private TextField input2 = new TextField(10);
    private Label label1 = new Label("Num 1:");
    private Label label2 = new Label("Num 2:");
    private Label resultLabel = new Label("Result:");

    private Button[] operationButtons = {new Button("+"), new Button("-"),
                    new Button("*"), new Button("/")};

    private double result;

    public void init() {
        setLayout(new GridLayout(5, 2)); //grid with 5 rows and 2 columns

        Font largeFont = new Font("Arial", Font.PLAIN, 33);
        Font buttonFont = new Font("Arial", Font.BOLD, 33);

        for (Button button : operationButtons) {
            button.addActionListener(this);
            button.setFont(buttonFont);
        }

        label1.setFont(largeFont);
        label2.setFont(largeFont);

        resultLabel.setFont(largeFont);
```

```
        input1.setFont(largeFont);
        input2.setFont(largeFont);

        add(label1); //adding to the grid layout
        add(input1); //this is the order in which controls will be added to the layout
        add(label2);
        add(input2);

        for (Button button : operationButtons) {
            add(button);
        }

        add(resultLabel);
    }

    public void actionPerformed(ActionEvent e) {
        double num1 = parseInput(input1.getText());
        double num2 = parseInput(input2.getText());

        if (Double.isNaN(num1) || Double.isNaN(num2)) {
            resultLabel.setText("Result: Error");
            return;
        }

        if (e.getSource() == operationButtons[0])
        result = num1 + num2;
        else if (e.getSource() == operationButtons[1])
        result = num1 - num2;
        else if (e.getSource() == operationButtons[2])
        result = num1 * num2;
        else if (e.getSource() == operationButtons[3]) {
            if (num2 != 0) {
                result = num1 / num2;
            } else {
                resultLabel.setText("Result: Can't divide by 0");
                return;
            }
        }

        resultLabel.setText("Result: " + result);
    }

    private double parseInput(String input) {
        try {
            return Double.parseDouble(input);
        } catch (NumberFormatException e) {
            return Double.NaN;
        }
    }
}
```

Output:



OR

```
import java.awt.*;
import java.awt.event.*;
import java.applet.*;

/*<applet code="SCApplet.class" width="400" height="500">
</applet>*/

public class SCApplet extends Applet implements ActionListener {
    private TextField num1Field, num2Field;
    private Label label1, label2, resultLabel;
    private Button[] opButtons = {new Button("+"), new Button("-"),
                    new Button("*"), new Button("/")};

    public void init() {
        num1Field = new TextField(10);
        num2Field = new TextField(10);
```

```
        label1 = new Label("Num 1:");
        label2 = new Label("Num 2:");
        resultLabel = new Label("Result:");

        // set the layout of the applet
        setLayout(new GridLayout(5, 2));

        // set font
        Font largeFont = new Font("Arial", Font.PLAIN, 33);
        Font buttonFont = new Font("Arial", Font.BOLD, 33);

        // add action listeners to buttons
        for (Button button : opButtons) {
            button.addActionListener(this);
            button.setFont(buttonFont);
        }

        label1.setFont(largeFont);
        label2.setFont(largeFont);

        resultLabel.setFont(largeFont);

        num1Field.setFont(largeFont);
        num2Field.setFont(largeFont);

        // Add components to the applet
        add(label1);
        add(num1Field);
        add(label2);
        add(num2Field);

        for (Button button : opButtons) {
            add(button);
        }

        add(resultLabel);
    }

    public void actionPerformed(ActionEvent e) {
        double num1 = Double.parseDouble(num1Field.getText());
        double num2 = Double.parseDouble(num2Field.getText());
        double result = 0.0;

  if (e.getSource() == opButtons[0]) {
            result = num1 + num2;
        } else if (e.getSource() == opButtons[1]) {
            result = num1 - num2;
        } else if (e.getSource() == opButtons[2]) {
            result = num1 * num2;
        } else if (e.getSource() == opButtons[3]) {
            if (num2 != 0) {
                result = num1 / num2;
            } else {
```

```
                resultLabel.setText("Error: Division by zero");
                return;
            }
        }

        resultLabel.setText("Result: " + result);
    }
}
```

Output: