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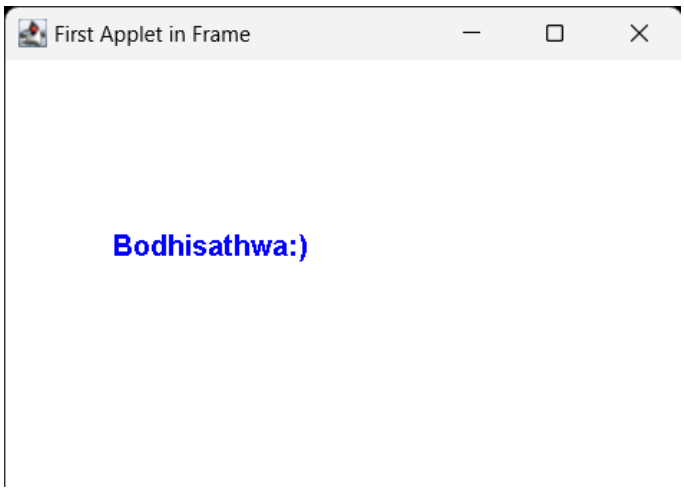
CLASS & ROLL NO.	CSD-C, 22P61A67H6
SUBJECT:	JAVA LAB

CONVERTING APPLET PROGRAMS INTO JFRAME

1) Develop an applet in Java that displays a simple message (INTO JFRAME)

```
import java.awt.*;
import java.awt.event.*;
public class FirstAppletFrame extends Frame {
public FirstAppletFrame() {
setSize(400, 300);
setTitle("First Applet in Frame");
// Create an instance of your applet
FirstApplet firstApplet = new FirstApplet();
// Add the applet to the frame
add(firstApplet);
// Set up a WindowListener to handle closing the frame
addWindowListener(new WindowAdapter() {
public void windowClosing(WindowEvent we) {
System.exit(0);
}      });   }
public static void main(String[] args) {
// Create and show the frame
EventQueue.invokeLater(() -> {
FirstAppletFrame frame = new FirstAppletFrame();
frame.setVisible(true);
});   } }
// Original Applet code
class FirstApplet extends java.applet.Applet {
public void paint(Graphics g) {
g.setColor(Color.blue);
Font font = new Font("Arial", Font.BOLD, 16);
g.setFont(font);
g.drawString("Bodhisathwa:)", 60, 110);
} }
```

Output:



2)Calculator using jframe:

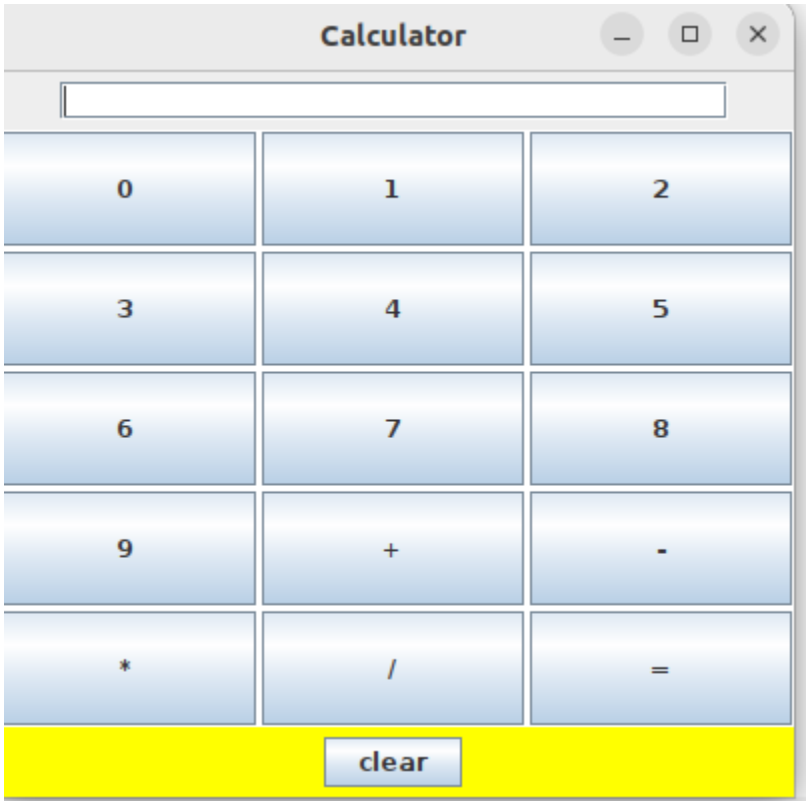
```
import java.awt.*;

import java.awt.event.*;

import javax.swing.*;


public class MyCalculatorFrame extends JFrame implements ActionListener {

   int num1, num2, result;

   JTextField T1;

   JButton NumButtons[] = new JButton[10];

   JButton Add, Sub, Mul, Div, clear, EQ;

   char Operation;

   JPanel nPanel, CPanel, SPanel;


   public MyCalculatorFrame() {

      nPanel = new JPanel();

      T1 = new JTextField(30);

      nPanel.setLayout(new FlowLayout(FlowLayout.CENTER));

      nPanel.add(T1);


      CPanel = new JPanel();

      CPanel.setBackground(Color.white);

      CPanel.setLayout(new GridLayout(5, 5, 3, 3));
```

```
for (int i = 0; i < 10; i++) {
   NumButtons[i] = new JButton("" + i);
}
Add = new JButton("+");
Sub = new JButton("-");
Mul = new JButton("*");
Div = new JButton("/");
clear = new JButton("clear");
EQ = new JButton("=");
T1.addActionListener(this);
for (int i = 0; i < 10; i++) {
   CPanel.add(NumButtons[i]);
   NumButtons[i].addActionListener(this);
}
CPanel.add(Add);
CPanel.add(Sub);
CPanel.add(Mul);
CPanel.add(Div);
CPanel.add(EQ);

SPanel = new JPanel();
SPanel.setLayout(new FlowLayout(FlowLayout.CENTER));
SPanel.setBackground(Color.yellow);
SPanel.add(clear);
clear.addActionListener(this);
EQ.addActionListener(this);

this.setLayout(new BorderLayout());
add(nPanel, BorderLayout.NORTH);
add(CPanel, BorderLayout.CENTER);
add(SPanel, BorderLayout.SOUTH);
```

```
    setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    setSize(400, 400);
    setTitle("Calculator");
    setLocationRelativeTo(null); // Center the frame on the screen
}

public void actionPerformed(ActionEvent ae) {
    String str = ae.getActionCommand();
    char ch = str.charAt(0);
    if (Character.isDigit(ch))
        T1.setText(T1.getText() + str);
    else if (str.equals("+")) {
        num1 = Integer.parseInt(T1.getText());
        Operation = '+';
        T1.setText("");
    } else if (str.equals("-")) {
        num1 = Integer.parseInt(T1.getText());
        Operation = '-';
        T1.setText("");
    } else if (str.equals("*")) {
        num1 = Integer.parseInt(T1.getText());
        Operation = '*';
        T1.setText("");
    } else if (str.equals("/")) {
        num1 = Integer.parseInt(T1.getText());
        Operation = '/';
        T1.setText("");
    } else if (str.equals("=")) {
        num2 = Integer.parseInt(T1.getText());
        switch (Operation) {
```

```
            case '+':
                result = num1 + num2;
                break;
            case '-':
                result = num1 - num2;
                break;
            case '*':
                result = num1 * num2;
                break;
            case '/':
                try {
                    result = num1 / num2;
                } catch (ArithmeticException e) {
                    result = num2;
                    JOptionPane.showMessageDialog(this, "Divided by zero");
                }
                break;
        }
        T1.setText("" + result);
    } else if (str.equals("clear")) {
        T1.setText("");
    }
  }

  public static void main(String[] args) {
    SwingUtilities.invokeLater(() -> {
        MyCalculatorFrame calculatorFrame = new MyCalculatorFrame();
        calculatorFrame.setVisible(true);
    });
  }
}
```

Output:



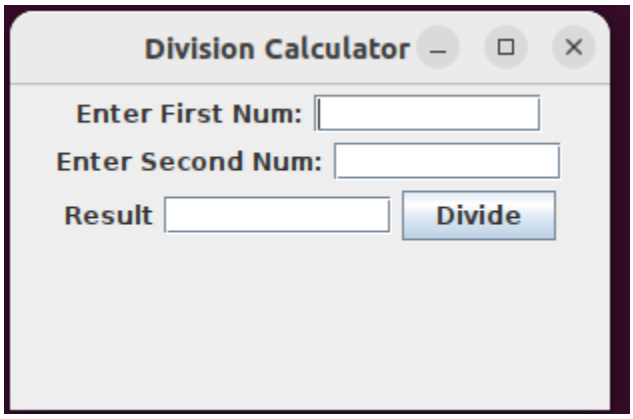
3)Division calculator:

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

public class DivisionFrame extends JFrame implements ActionListener {
    JLabel L1, L2, L3;
    JTextField T1, T2, Result;
    JButton B1;

    public DivisionFrame() {
        L1 = new JLabel("Enter First Num:");
        add(L1);
        T1 = new JTextField(10);
        add(T1);
        L2 = new JLabel("Enter Second Num:");
```

```
    add(L2);
    T2 = new JTextField(10);
    add(T2);
    L3 = new JLabel("Result");
    add(L3);
    Result = new JTextField(10);
    add(Result);
    B1 = new JButton("Divide");
    add(B1);
    B1.addActionListener(this);

    setLayout(new FlowLayout());
    setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    setSize(300, 200);
    setTitle("Division Calculator");
}

public void actionPerformed(ActionEvent e) {
    if (e.getSource() == B1) {
        try {
            int value1 = Integer.parseInt(T1.getText());
            int value2 = Integer.parseInt(T2.getText());

            int result = value1 / value2;
            Result.setText(String.valueOf(result));
        } catch (NumberFormatException nfe) {
            JOptionPane.showMessageDialog(this, "Not a number");
        } catch (ArithmeticException ae) {
            JOptionPane.showMessageDialog(this, "Divided by Zero");
        }
    }
```

```
    }

    public static void main(String[] args) {
        SwingUtilities.invokeLater(() -> {
            DivisionFrame divisionFrame = new DivisionFrame();
            divisionFrame.setVisible(true);
        });
    }
}
```

output:



4)Factorial :

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

public class FactorialFrame extends JFrame {
    private JLabel L1, L2;
    private JTextField T1, T2;
    private JButton B1;

    public FactorialFrame() {
        setLayout(new FlowLayout());
        L1 = new JLabel("Enter any Number : ");
        add(L1);
```

```
        T1 = new JTextField(10);
        add(T1);
        L2 = new JLabel("Factorial of Num : ");
        add(L2);
        T2 = new JTextField(10);
        add(T2);
        B1 = new JButton("Compute");
        add(B1);
        B1.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                int value = Integer.parseInt(T1.getText());
                int fact = factorial(value);
                T2.setText(String.valueOf(fact));
            }
        });
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setSize(500, 250);
        setVisible(true);
    }

    int factorial(int n) {
        if (n == 0)
            return 1;
        else
            return n * factorial(n - 1);
    }

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

Output: