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CLASS & ROLL NO.	CSD-C, 22P61A67G6
SUBJECT:	JAVA LAB

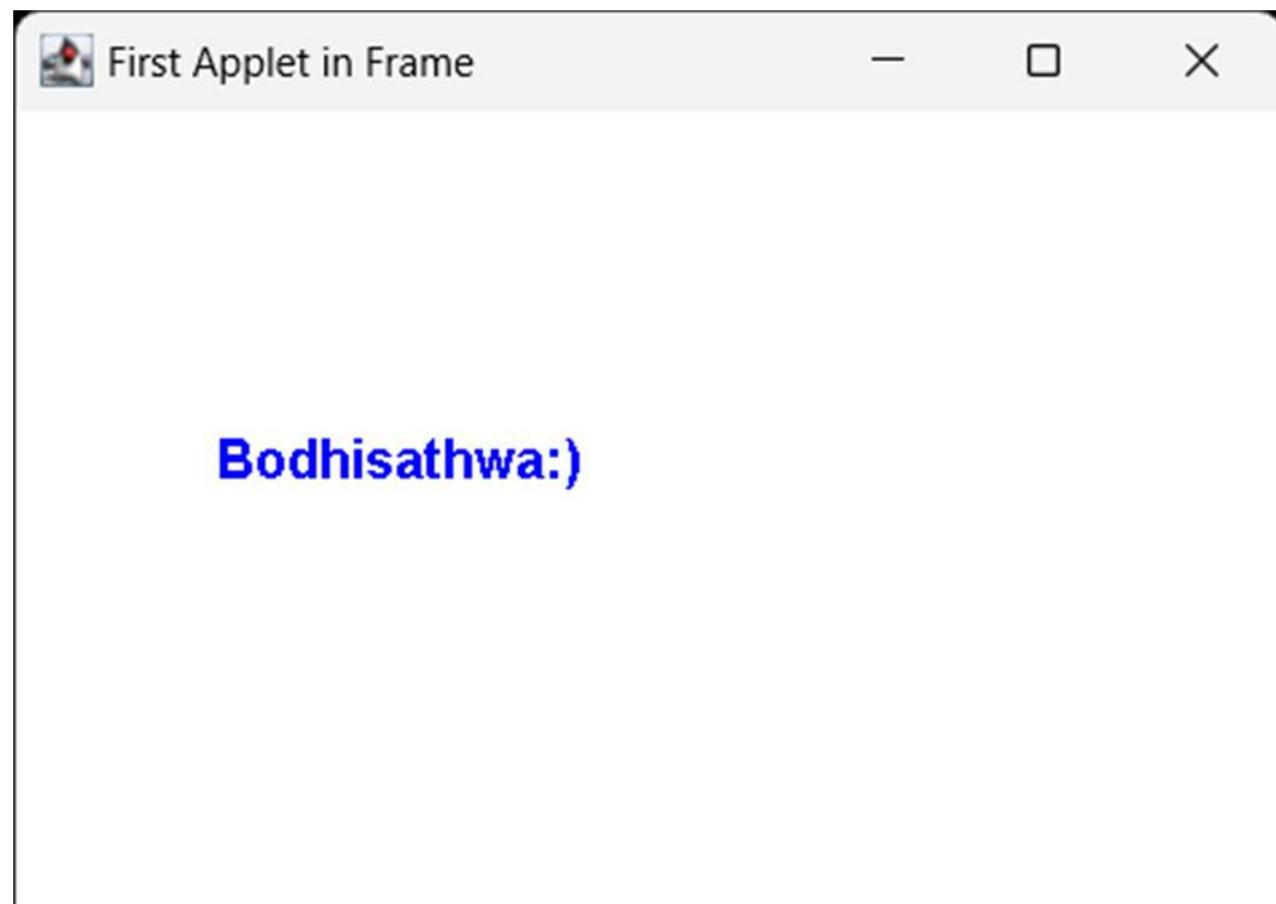
## CONVERTING APPLET PROGRAMS INTO JFRAME

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- 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 (ArithmaticException 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);

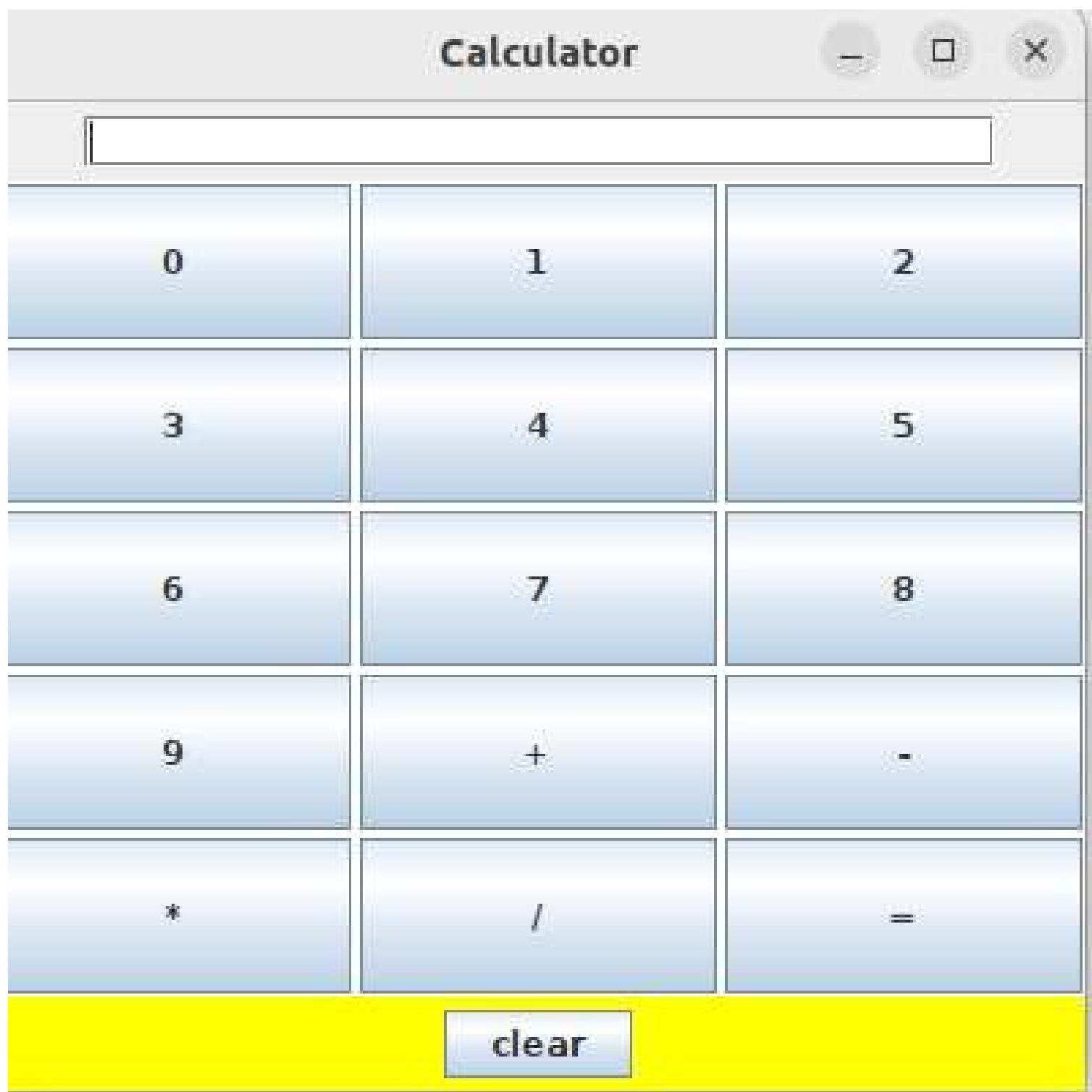
    });

}

}

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 (ArithmetricException ae) {
JOptionPane.showMessageDialog(this, "Divided by Zero");
}
}
}
```

}

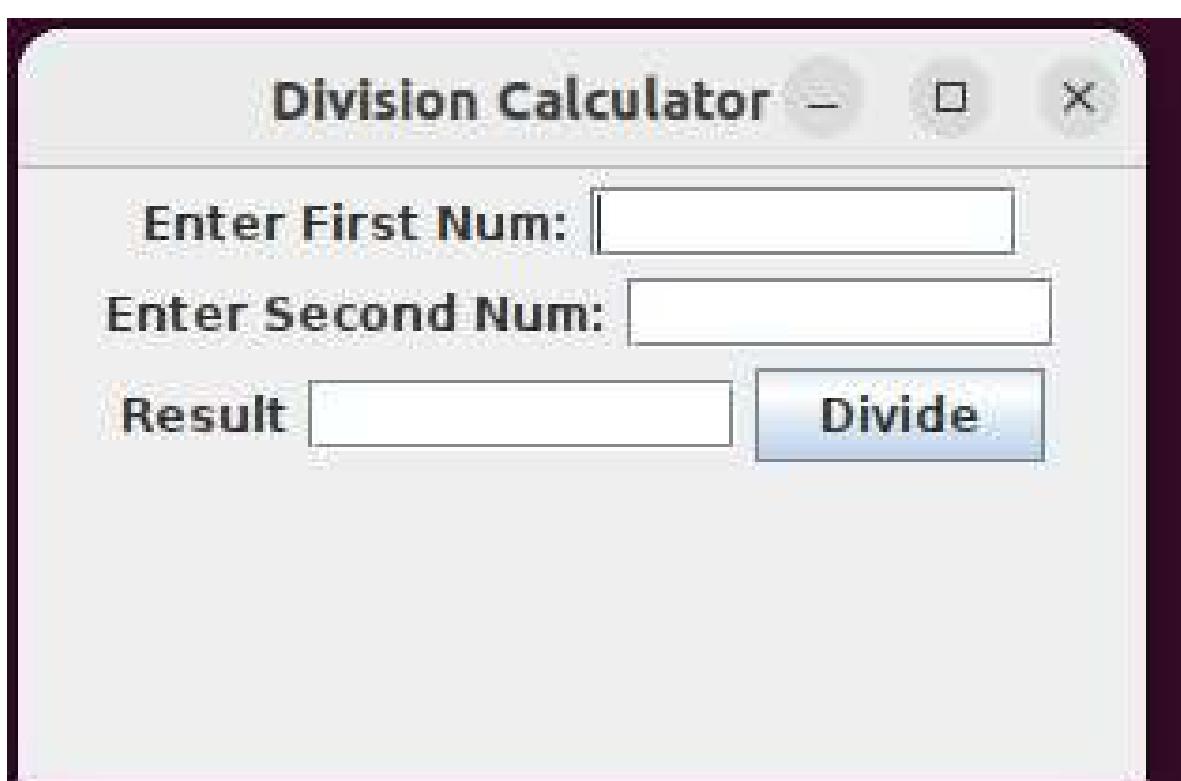
```

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:
```

A screenshot of a Windows application window titled "Factorial". The window has a standard title bar with minimize, maximize, and close buttons. Inside, there are two text input fields: one labeled "Enter any Number :" and another labeled "Factorial of Num :". Below these is a blue "Compute" button. The window is set against a light gray background.