NAME :	S.MANASA
CLASS & ROLL NO.	CSD-C, 22P61A67F9
SUBJECT:	JAVA LAB

CONVERTING APPLET PROGRAMS INTO JFRAME

1)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();
```

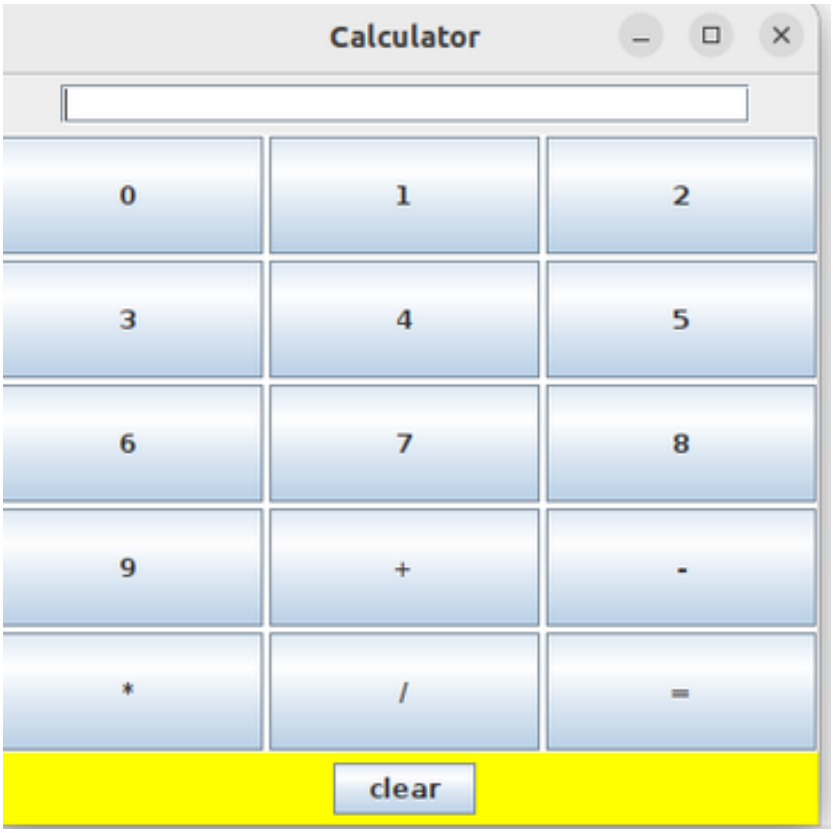
```
T1 = new JTextField(30);
nPanel.setLayout(new FlowLayout(FlowLayout.CENTER));
nPanel.add(T1);

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:

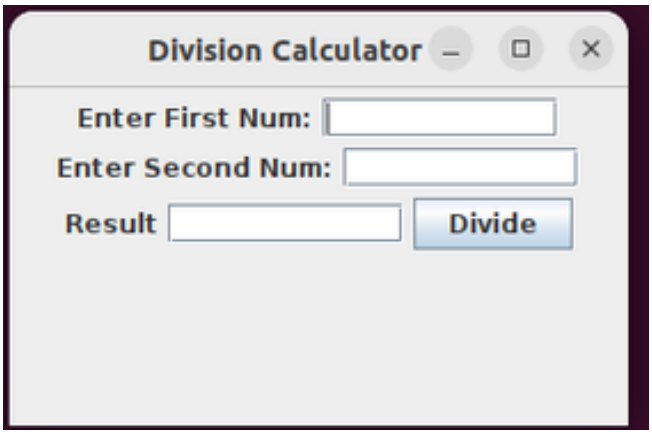


2) Division calculator:

```
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
:
```



3)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: