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package Java;

import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.*;

public class calc implements ActionListener {
    JTextField t1;
    JButton b1, b2, b3, b4, b5, b6, b7, b8, b9, b10, b11, b12, b13, b14, b15, b16;
    int n = 0, i = 0; // i is the operator

    calc() {
        JFrame f = new JFrame("Calculator");
        JPanel p = new JPanel();
        t1 = new JTextField();
        t1.setBounds(100, 100, 200, 30);

        // Initialize buttons
        b1 = new JButton("1"); b2 = new JButton("2"); b3 = new JButton("3");
        b4 = new JButton("+"); b5 = new JButton("4"); b6 = new JButton("5");
        b7 = new JButton("6"); b8 = new JButton("-"); b9 = new JButton("7");
        b10 = new JButton("8"); b11 = new JButton("9"); b12 = new JButton("*");
        b13 = new JButton("/"); b14 = new JButton("0"); b15 = new JButton("=");
        b16 = new JButton("C");

        // Set button bounds
        b1.setBounds(100, 140, 50, 30);
        b2.setBounds(150, 140, 50, 30);
        b3.setBounds(200, 140, 50, 30);
        b4.setBounds(250, 140, 50, 30);
        b5.setBounds(100, 170, 50, 30);
        b6.setBounds(150, 170, 50, 30);
        b7.setBounds(200, 170, 50, 30);
        b8.setBounds(250, 170, 50, 30);
        b9.setBounds(100, 200, 50, 30);
        b10.setBounds(150, 200, 50, 30);
        b11.setBounds(200, 200, 50, 30);
        b12.setBounds(250, 200, 50, 30);
        b13.setBounds(100, 230, 50, 30);
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    b14.setBounds(150, 230, 50, 30);
    b15.setBounds(200, 230, 50, 30);
    b16.setBounds(250, 230, 50, 30);

    // Add components to panel
    p.add(t1);
    p.add(b1); p.add(b2); p.add(b3); p.add(b4);
    p.add(b5); p.add(b6); p.add(b7); p.add(b8);
    p.add(b9); p.add(b10); p.add(b11); p.add(b12);
    p.add(b13); p.add(b14); p.add(b15); p.add(b16);

    // Add action listeners
    b1.addActionListener(this);
    b2.addActionListener(this);
    b3.addActionListener(this);
    b4.addActionListener(this);
    b5.addActionListener(this);
    b6.addActionListener(this);
    b7.addActionListener(this);
    b8.addActionListener(this);
    b9.addActionListener(this);
    b10.addActionListener(this);
    b11.addActionListener(this);
    b12.addActionListener(this);
    b13.addActionListener(this);
    b14.addActionListener(this);
    b15.addActionListener(this);
    b16.addActionListener(this);

    f.setContentPane(p);
    f.setSize(400, 500);
    f.setLayout(null);
    f.setVisible(true);
    f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
}

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

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public void actionPerformed(ActionEvent e) {
   if (e.getSource() == b1) t1.setText(t1.getText() + "1");
   else if (e.getSource() == b2) t1.setText(t1.getText() + "2");
   else if (e.getSource() == b3) t1.setText(t1.getText() + "3");
   else if (e.getSource() == b5) t1.setText(t1.getText() + "4");
   else if (e.getSource() == b6) t1.setText(t1.getText() + "5");
   else if (e.getSource() == b7) t1.setText(t1.getText() + "6");
   else if (e.getSource() == b9) t1.setText(t1.getText() + "7");
   else if (e.getSource() == b10) t1.setText(t1.getText() + "8");
   else if (e.getSource() == b11) t1.setText(t1.getText() + "9");
   else if (e.getSource() == b14) t1.setText(t1.getText() + "0");
   else if (e.getSource() == b4) {
      n = Integer.parseInt(t1.getText());
      t1.setText("");
      i = 1;
   } else if (e.getSource() == b8) {
      n = Integer.parseInt(t1.getText());
      t1.setText("");
      i = 2;
   } else if (e.getSource() == b12) {
      n = Integer.parseInt(t1.getText());
      t1.setText("");
      i = 3;
   } else if (e.getSource() == b13) {
      n = Integer.parseInt(t1.getText());
      t1.setText("");
      i = 4;
   } else if (e.getSource() == b15) {
      calculate();
   } else if (e.getSource() == b16) {
      t1.setText("");
      n = 0;
      i = 0;
   }
}

private void calculate() {
   int res = 0;
   int secondOperand;
   try {
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            secondOperand = Integer.parseInt(t1.getText());
            switch (i) {
                case 1: res = n + secondOperand; break;
                case 2: res = n - secondOperand; break;
                case 3: res = n * secondOperand; break;
                case 4:
                    if (secondOperand != 0) {
                        res = n / secondOperand;
                    } else {
                        t1.setText("Div by 0!");
                        return;
                    }
                    break;
                default: return;
            }
            t1.setText(Integer.toString(res));
        } catch (NumberFormatException e) {
            t1.setText("Error");
        }
    }
}
```