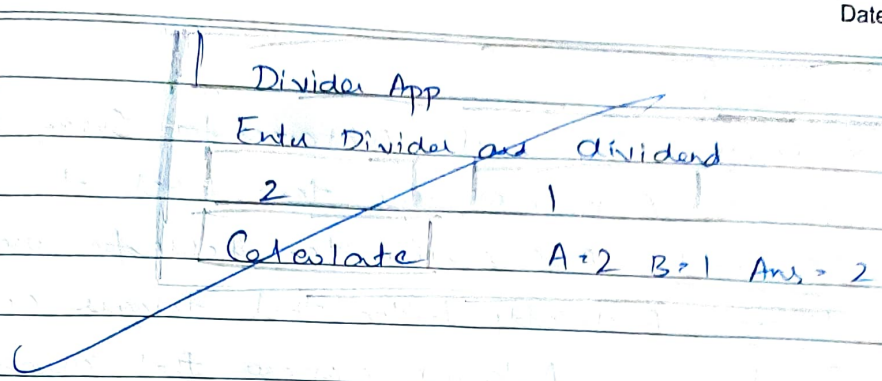
Lab Program - 9

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

class SwingDemo {
    SwingDemo() {
        JFrame jfrm = new JFrame("Divider App");
        jfrm.setSize(275, 180);
        jfrm.setLayout(new FlowLayout());
        jfrm.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        JLabel jlab = new JLabel("Enter dividend and divisor: ");
        JTextField ajtf = new JTextField(8);
        JTextField bjtf = new JTextField(8);

        JButton button = new JButton("Calculate");
        JLabel alab = new JLabel();
        JLabel blab = new JLabel();
        JLabel anslab = new JLabel();
        jfrm.add(jlab); jfrm.add(ajtf);
        jfrm.add(bjtf); jfrm.add(button); jfrm.add(alab);
        jfrm.add(blab); jfrm.add(anslab);

        ActionListener l = new ActionListener() {
            public void actionPerformed(ActionEvent ae) {
                System.out.println("Action event from a text field");
            }
        };
        ajtf.addActionListener(l); bjtf.addActionListener(l);
```

```
button.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        try {
            int a = Integer.parseInt(ajt.getText());
            int b = Integer.parseInt(bjtf.getText());
            int ans = b/a;
            alab.setText("\n A = " + a);
            blab.setText("\n B = " + b);
            anslab.setText("\n Ans = " + ans);
        } catch (NumberFormatException e) {
            alab.setText("");
            blab.setText("");
            anslab.setText("");
            ex.setText("Enter integers!");
        } catch (ArithmeticException e) {
            alab.setText("");
            blab.setText("");
            anslab.setText("");
            ex.setText("B should be != 0");
        }
    }
});
jfram.setVisible(true);
}}

public static void main(String args[]) {
    SwingUtilities.invokeLater(new Runnable() {
        public void run() {
            new SwingDemo();
        }
    });
}
}
```

Date: / /

Output:



Classes Used:

- JFrame: Top-level container for Swing components.
- JLabel: A non-editable text label to display text.
- JTextField: A single-line text field for user input.
- JButton: A clickable button that triggers actions.
- FlowLayout: A layout manager that arranges components in a horizontal flow (like words).
- ActionListener: An interface for handling action events.
- ActionEvent: An event object representing an action.
- SwingUtilities: A utility class for working with Swing components on the Event Dispatching Thread (EDT).

Functions:

- new JFrame(text): Specifies title
- setSize(width, height): Sets size of frame.
- setLayout(new FlowLayout()): Sets layout manager to FlowLayout
- setVisible(true): Makes frame visible
- setDefaultCloseOperation(JFrame.EXIT): Terminates program when closed
- new JLabel(text): Specifies text in label.
- JTextField(size): Creates text field of specified size (columns)
- new JButton(text): Creates button with given text.
- addActionListener(ActionListener l): Attaches an ActionListener to a component to handle action events.
- ~~ActionEvent~~ actionPerformed(ActionEvent evt): Method called when an action event occurs.
- invokeLater(Runnable r): Schedules a runnable task to be executed on EDT

Additional:

- err.setText(): Used to display error message on separate JLabel
- <JLabelObject>.setText(): Used to update labels with input values and calculate result.