EXPERIMENT:3

Ascending Descending order of numbers

Aim:

To design a user interface with Layouts for printing the numbers in ascending order and descending order.

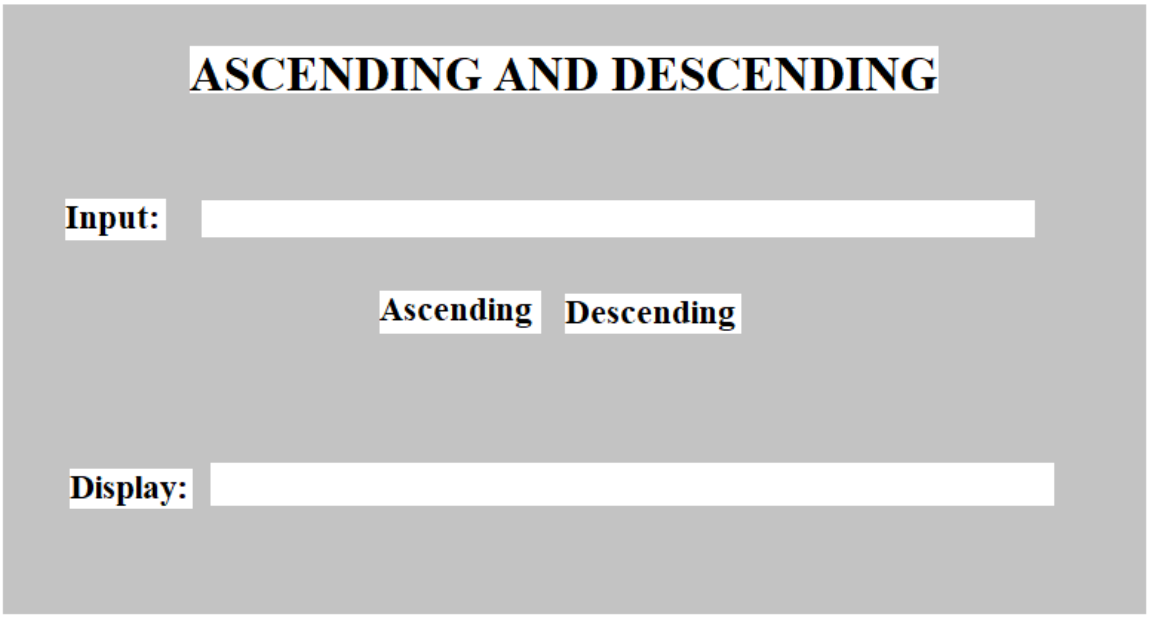
Program:

```
import javax.swing.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.util.Arrays;
import java.util.Collections;

public class SortNumbersFrame extends JFrame {

    private JLabel inputLabel;
    private JTextField inputTextField;
    private JButton sortAscButton;
    private JButton sortDescButton;
    private JTextArea resultTextArea;

    public SortNumbersFrame() {
        // Initialize components
        inputLabel = new JLabel("Enter numbers (comma separated):");
        inputTextField = new JTextField(20);
        sortAscButton = new JButton("Sort Ascending");
        sortDescButton = new JButton("Sort Descending");
        resultTextArea = new JTextArea(10, 30);

        // Set layout and add components
        setLayout(new java.awt.FlowLayout());
        add(inputLabel);
        add(inputTextField);
        add(sortAscButton);
        add(sortDescButton);
        add(new JScrollPane(resultTextArea));

        // Add action listeners
        sortAscButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                sortNumbers(true);
            }
        });
```

```
        sortDescButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                sortNumbers(false);
            }
        });

        // Set JFrame properties
        setTitle("Number Sorter");
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        pack();
        setLocationRelativeTo(null);
    }

    private void sortNumbers(boolean ascending) {
        try {
            // Get input from text field
            String input = inputTextField.getText();
            // Split input into an array of strings
            String[] numberStrings = input.split(",");
            // Convert strings to integers
            Integer[] numbers = new Integer[numberStrings.length];
            for (int i = 0; i < numberStrings.length; i++) {
                numbers[i] = Integer.parseInt(numberStrings[i].trim());
            }

            // Sort the array
            if (ascending) {
                Arrays.sort(numbers);
            } else {
                Arrays.sort(numbers, Collections.reverseOrder());
            }

            // Display sorted numbers in the text area
            resultTextArea.setText(Arrays.toString(numbers));
        } catch (NumberFormatException ex) {
            JOptionPane.showMessageDialog(this, "Please enter valid numbers.", "Error",
JOptionPane.ERROR_MESSAGE);
        }
    }

    public static void main(String[] args) {
        // Create and display the form
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new SortNumbersFrame().setVisible(true);
```

```
        }
    });
  }
}\
```

Output:



Result:

A user interface with Layouts for printing the numbers in ascending order and descending order was competed successfully.