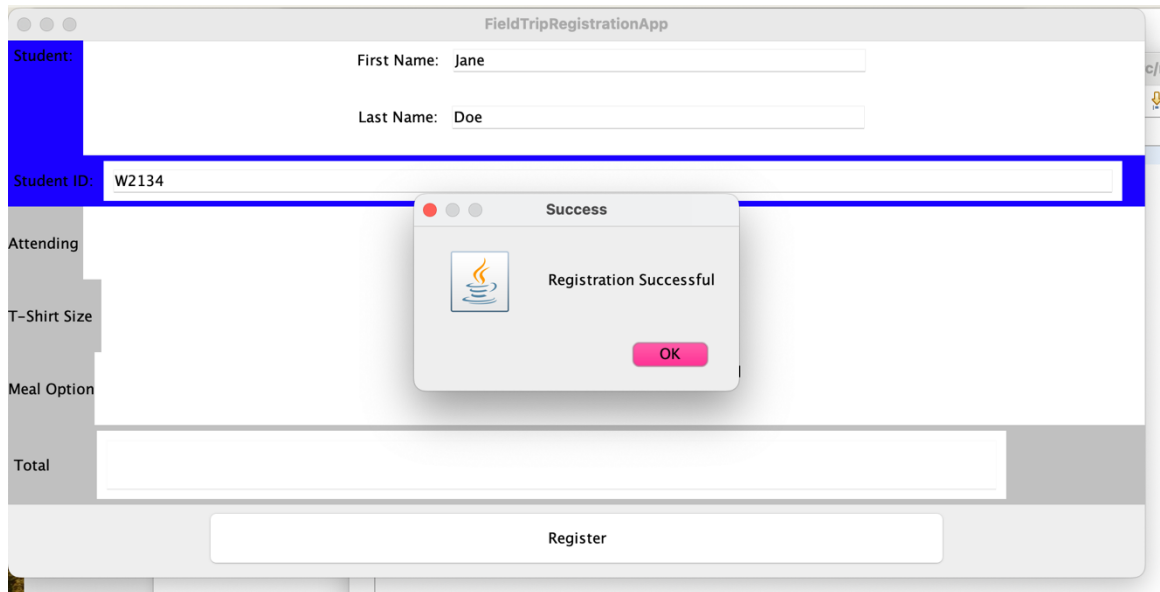




The screenshot shows the same "FieldTripRegistrationApp" window. The "Attending" section now has radio buttons for "Yes" (selected) and "No". The "T-Shirt Size" section has radio buttons for "S", "M" (selected), "L", and "None". The "Meal Option" section has radio buttons for "Pizza", "Hot Dog" (selected), and "Salad". The "Total" field now displays "\$157". The "Register" button remains at the bottom.

Main.java:

```
package main;
import javax.swing.SwingUtilities;
import main.Display;

public class Main {

    public static void main(String[] args) {
        SwingUtilities.invokeLater(() -> {
            Display display = new Display();
```

```
        display.setVisible(true);
    });
}
}
```

Display.java:

```
package main;

import java.awt.BorderLayout;
import java.awt.Color;
import java.awt.Dimension;
import java.awt.FlowLayout;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;

import javax.swing.BoxLayout;
import javax.swing.JButton;
import javax.swing.JCheckBox;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JOptionPane;
import javax.swing.JPanel;
import javax.swing.JTextField;

import businessLogic.FirstNameVerifier;
import businessLogic.LastNameVerifier;
import businessLogic.StudentIDVerifier;

public class Display extends JFrame{

    private JPanel mainPanel;
    private JButton registerButton;
    private JTextField total;
    private JLabel studentLabel;
    private JTextField firstNameField;
    private JTextField lastNameField;
    private JTextField studentIDField;
    private JPanel studentIDPanel;
    private JPanel studentLabelPanel;
    private JCheckBox attendingYesCheckBox;
    private JCheckBox attendingNoCheckBox;
    private JCheckBox tShirtSCheckBox;
    private JCheckBox tShirtMCheckBox;
```

```

private JCheckBox tShirtLCheckBox;
private JCheckBox tShirtNoneCheckBox;
private JCheckBox pizzaCheckBox;
private JCheckBox hotDogCheckBox;
private JCheckBox saladCheckBox;

Display() {
    mainPanel = new JPanel();
    registerButton = new JButton("Register"); //register button
    total = new JTextField(65);
    setUpUI();
    registerButton.addActionListener(new RegisterButtonListener());
}

private void setUpUI() {
    setLayout(new BorderLayout());
    mainPanel.setLayout(new BoxLayout(mainPanel, BoxLayout.Y_AXIS));
    addStudentNamePanel();
    addStudentIDPanel();
    addAttendingPanel();
    addTShirtSizePanel();
    addMealOptionPanel();
    addTotalPanel();
    addRegisterButtonPanel();
    add(mainPanel, BorderLayout.CENTER);
    setResizable(false);
    setTitle("FieldTripRegistrationApp");
    setSize(1000, 500);
    setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
}

private void addStudentNamePanel() { //student name panel
    JPanel studentNamePanel = new JPanel();
    studentNamePanel.setBackground(Color.LIGHT_GRAY);
    studentNamePanel.setLayout(new BorderLayout());

    studentLabelPanel = new JPanel(new FlowLayout(FlowLayout.LEFT));
    studentLabelPanel.setBackground(Color.LIGHT_GRAY);
    studentLabel = new JLabel("Student: ");
    studentLabelPanel.add(studentLabel);

    JPanel lastNamefirstNameFieldsPanel = new JPanel();
    lastNamefirstNameFieldsPanel.setLayout(new
BoxLayout(lastNamefirstNameFieldsPanel, BoxLayout.Y_AXIS));

```

```

        JPanel firstNamePanel = new JPanel(new
FlowLayout(FlowLayout.CENTER)); //First name panel
        firstNamePanel.setBackground(Color.WHITE);
        JLabel firstNameLabel = new JLabel("First Name: ");
        firstNameField = new JTextField(30);
        firstNameField.setPreferredSize(new Dimension(200, 25));
        firstNamePanel.add(firstNameLabel);
        firstNamePanel.add(firstNameField);

        JPanel lastNamePanel = new JPanel(new
FlowLayout(FlowLayout.CENTER)); //Last name panel
        lastNamePanel.setBackground(Color.WHITE);
        JLabel lastNameLabel = new JLabel("Last Name: ");
        lastNameField = new JTextField(30);
        lastNameField.setPreferredSize(new Dimension(200, 25));
        lastNamePanel.add(lastNameLabel);
        lastNamePanel.add(lastNameField);

        lastNamefirstNameFieldsPanel.add(firstNamePanel);
        lastNamefirstNameFieldsPanel.add(lastNamePanel);

        studentNamePanel.add(studentLabelPanel, BorderLayout.WEST);
        studentNamePanel.add(lastNamefirstNameFieldsPanel,
BorderLayout.CENTER);

        mainPanel.add(studentNamePanel);
    }

    private void addStudentIDPanel() { //studentId panel
        studentIDPanel = new JPanel();
        studentIDPanel.setLayout(new FlowLayout(FlowLayout.LEFT));
        studentIDPanel.setBackground(Color.LIGHT_GRAY);

        JLabel studentIDLabel = new JLabel();
        studentIDLabel.setText("Student ID: ");
        studentIDPanel.add(studentIDLabel);

        JPanel studentIDTextField = new JPanel(new
FlowLayout(FlowLayout.CENTER));
        studentIDTextField.setBackground(Color.WHITE);
        studentIDField = new JTextField(73);
        studentIDField.setPreferredSize(new Dimension(200, 25));

```

```

        studentIDField.addActionListener(e -> {
            String studentID = studentIDField.getText();
            if (!(studentID.startsWith("W") && studentID.length() == 5 &&
isInteger(studentID.substring(1)))) {
                studentIDPanel.setBackground(Color.RED);
                JOptionPane.showMessageDialog(this, "Invalid student ID format.
Student ID must start with 'W' and be followed by 4 integers.", "Invalid Input",
JOptionPane.ERROR_MESSAGE);
            } else {
                studentIDPanel.setBackground(Color.BLUE);
            }
        });

        studentIDTextField.add(studentIDField);
        studentIDPanel.add(studentIDTextField);
        mainPanel.add(studentIDPanel);
    }

    private void addAttendingPanel() {
        JPanel attendingPanel = new JPanel(); //attending panel
        attendingPanel.setLayout(new BorderLayout());
        attendingPanel.setBackground(Color.LIGHT_GRAY);

        JLabel attendingStudent = new JLabel(); //attending label
        attendingStudent.setText("Attending ");
        attendingPanel.add(attendingStudent, BorderLayout.WEST);

        JPanel attendingCheckboxPanel = new JPanel(); //attending check boxes
        attendingCheckboxPanel.setBackground(Color.WHITE);
        attendingCheckboxPanel.setLayout(new
FlowLayout(FlowLayout.CENTER));
        attendingYesCheckBox = new JCheckBox("Yes");
        attendingNoCheckBox = new JCheckBox("No");
        attendingCheckboxPanel.add(attendingYesCheckBox); //yes check box
        attendingCheckboxPanel.add(attendingNoCheckBox); // no check box
        attendingPanel.add(attendingCheckboxPanel, BorderLayout.CENTER);
        mainPanel.add(attendingPanel);
    }

    private void addTShirtSizePanel() {
        JPanel tShirtSizePanel = new JPanel(); //t-shirt panel
        tShirtSizePanel.setLayout(new BorderLayout());
        tShirtSizePanel.setBackground(Color.LIGHT_GRAY);

```

```

JLabel tShirtSize = new JLabel();
tShirtSize.setText("T-Shirt Size ");
tShirtSizePanel.add(tShirtSize, BorderLayout.WEST);

JPanel tShirtCheckBoxPanel = new JPanel();
tShirtCheckBoxPanel.setBackground(Color.WHITE);
tShirtCheckBoxPanel.setLayout(new FlowLayout(FlowLayout.CENTER));

tShirtSCheckBox = new JCheckBox("S");
tShirtMCheckBox = new JCheckBox("M");
tShirtLCheckBox = new JCheckBox("L");
tShirtNoneCheckBox = new JCheckBox("None");

tShirtCheckBoxPanel.add(tShirtSCheckBox);
tShirtCheckBoxPanel.add(tShirtMCheckBox);
tShirtCheckBoxPanel.add(tShirtLCheckBox);
tShirtCheckBoxPanel.add(tShirtNoneCheckBox);

tShirtSizePanel.add(tShirtCheckBoxPanel, BorderLayout.CENTER);
mainPanel.add(tShirtSizePanel);
}

private void addMealOptionPanel() {
    JPanel mealOptionPanel = new JPanel(); //meal opt panel
    mealOptionPanel.setLayout(new BorderLayout());
    mealOptionPanel.setBackground(Color.LIGHT_GRAY);

    JLabel mealOption = new JLabel();
    mealOption.setText("Meal Option");
    mealOptionPanel.add(mealOption, BorderLayout.WEST);

    JPanel mealOptionCheckBoxPanel = new JPanel();
    mealOptionCheckBoxPanel.setLayout(new
FlowLayout(FlowLayout.CENTER));
    mealOptionCheckBoxPanel.setBackground(Color.WHITE);

    pizzaCheckBox = new JCheckBox("Pizza"); // the check boxes names
    hotDogCheckBox = new JCheckBox("Hot Dog");
    saladCheckBox = new JCheckBox("Salad");

    mealOptionCheckBoxPanel.add(pizzaCheckBox); //check box
    mealOptionCheckBoxPanel.add(hotDogCheckBox);
    mealOptionCheckBoxPanel.add(saladCheckBox);

```

```

        mealOptionPanel.add(mealOptionCheckBoxPanel,
BorderLayout.CENTER);

        mainPanel.add(mealOptionPanel);
    }

    private void addTotalPanel() {
        JPanel totalLabelPanel = new JPanel(); //total panel
        totalLabelPanel.setLayout(new FlowLayout(FlowLayout.LEFT));
        totalLabelPanel.setBackground(Color.LIGHT_GRAY);

        JLabel totalLabel = new JLabel(); //total label
        totalLabel.setText("Total    ");
        totalLabelPanel.add(totalLabel);

        JPanel totalPanel = new JPanel(new FlowLayout(FlowLayout.CENTER));
//total panel
        totalPanel.setBackground(Color.WHITE);
        total.setPreferredSize(new Dimension(500, 50));
        total.setEditable(false);
        totalPanel.add(total);
        totalLabelPanel.add(totalPanel);

        mainPanel.add(totalLabelPanel);
    }

    private void addRegisterButtonPanel() { //registration panel
        JPanel registerButtonPanel = new JPanel();
        registerButtonPanel.setLayout(new FlowLayout(FlowLayout.CENTER));
        registerButton.setPreferredSize(new Dimension(650, 50));
        registerButtonPanel.add(registerButton);
        mainPanel.add(registerButtonPanel);
    }

    private class RegisterButtonListener implements ActionListener {
        @Override
        public void actionPerformed(ActionEvent e) {
            boolean isFirstNameValid = firstNameField.getText().length() >= 2 &&
firstNameField.getText().length() <= 15;
            boolean isLastNameValid = lastNameField.getText().length() >= 2 &&
lastNameField.getText().length() <= 20;
            boolean isStudentIDValid = studentIDField.getText().startsWith("W")
&& studentIDField.getText().length() == 5 &&
isInteger(studentIDField.getText().substring(1));

```

```

        if (!isFirstNameValid || !isLastNameValid) {
            studentLabelPanel.setBackground(Color.RED); //wrong
        } else {
            studentLabelPanel.setBackground(Color.BLUE); //right
        }

        if (!isStudentIDValid) {
            studentIDPanel.setBackground(Color.RED); //wrong
        } else {
            studentIDPanel.setBackground(Color.BLUE); //right
        }

        if (studentLabelPanel.getBackground().equals(Color.RED) ||
            studentIDPanel.getBackground().equals(Color.RED)) {
            JOptionPane.showMessageDialog(Display.this, "Registration Failed",
            "Failed", JOptionPane.ERROR_MESSAGE); //failed
        } else {
            JOptionPane.showMessageDialog(Display.this, "Registration
            Successful", "Success", JOptionPane.INFORMATION_MESSAGE); //success
        }

        int totalPrice = 0;
        if (attendingYesCheckBox.isSelected()) {
            totalPrice += 130; //value
        }
        if (tShirtSCheckBox.isSelected() || tShirtMCheckBox.isSelected() ||
            tShirtLCheckBox.isSelected()) {
            totalPrice += 25; //value
        }
        if (pizzaCheckBox.isSelected() || hotDogCheckBox.isSelected()) {
            totalPrice += 2; // value
        } else if (saladCheckBox.isSelected()) {
            totalPrice += 1; //value
        }

        total.setText("$" + totalPrice);

        System.out.println("Total: $" + totalPrice);

        if (studentLabelPanel.getBackground().equals(Color.RED) ||
            studentIDPanel.getBackground().equals(Color.RED)) {
            System.out.println("Registration Failed" ); //print in console
        } else {

```



```
        System.out.println("Registration Successful"); //print in console
    }
}

private boolean isInteger(String str) {
    try{
        Integer.parseInt(str);
        return true;
    } catch (NumberFormatException e) {
        return false;
    }
}
}
```