

EXPERIMENT:1

User Interface for Welcome screen

Aim:

To design a user interface for welcome screen

Program:

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

public class LoginFrame extends javax.swing.JFrame {

    private JLabel nameLabel;
    private JLabel passwordLabel;
    private JTextField nameTextField;
    private JPasswordField passwordField;
    private JButton loginButton;

    public LoginFrame() {
        initComponents();
    }

    private void initComponents() {

        nameLabel = new JLabel("Name:");
        passwordLabel = new JLabel("Password:");
        nameTextField = new JTextField();
        passwordField = new JPasswordField();
        loginButton = new JButton("Login");

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        setTitle("Login Screen");

        loginButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent evt) {
                loginButtonActionPerformed(evt);
            }
        });

        GroupLayout layout = new GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(GroupLayout.Alignment.LEADING)
```

```

        .addGroup(layout.createSequentialGroup())
        .addGap(50, 50, 50)
        .addGroup(layout.createParallelGroup(GroupLayout.Alignment.TRAILING)
        .addComponent(loginButton)
        .addGroup(layout.createSequentialGroup()
        .addGroup(layout.createParallelGroup(GroupLayout.Alignment.LEADING)
        .addComponent(nameLabel)
        .addComponent(passwordLabel))
        .addGap(18, 18, 18)
        .addGroup(layout.createParallelGroup(GroupLayout.Alignment.LEADING,
false)
        .addComponent(nameTextField)
        .addComponent(passwordField, GroupLayout.DEFAULT_SIZE, 200,
Short.MAX_VALUE))))
        .addContainerGap(50, Short.MAX_VALUE))
    );
    layout.setVerticalGroup(
        layout.createParallelGroup(GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
        .addGap(30, 30, 30)
        .addGroup(layout.createParallelGroup(GroupLayout.Alignment.BASELINE)
        .addComponent(nameLabel)
        .addComponent(nameTextField, GroupLayout.PREFERRED_SIZE,
GroupLayout.DEFAULT_SIZE, GroupLayout.PREFERRED_SIZE))
        .addGap(18, 18, 18)
        .addGroup(layout.createParallelGroup(GroupLayout.Alignment.BASELINE)
        .addComponent(passwordLabel)
        .addComponent(passwordField, GroupLayout.PREFERRED_SIZE,
GroupLayout.DEFAULT_SIZE, GroupLayout.PREFERRED_SIZE))
        .addGap(18, 18, 18)
        .addComponent(loginButton)
        .addContainerGap(30, Short.MAX_VALUE))
    );

    pack();
    setLocationRelativeTo(null);
}

private void loginButtonActionPerformed(ActionEvent evt) {
    String name = nameTextField.getText();
    char[] password = passwordField.getPassword();

    // Sample credentials for demonstration purposes
    String correctName = "admin";
    String correctPassword = "password";

```

```

        if (name.equals(correctName) && String.valueOf(password).equals(correctPassword)) {
            JOptionPane.showMessageDialog(this, "Welcome " + name + "!", "Login
Successful", JOptionPane.INFORMATION_MESSAGE);
        } else {
            JOptionPane.showMessageDialog(this, "Invalid name or password.", "Login Failed",
JOptionPane.ERROR_MESSAGE);
        }
    }

    public static void main(String[] args) {
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new LoginFrame().setVisible(true);
            }
        });
    }
}

```

Output:



Result:

A user interface for welcome screen was successfully designed and implemented.

EXPERIMENT:2

User Interface for Grade Calculator

Aim:

To design a user interface by applying design rules for assigning a grade to students based on the subject marks.

Program:

```
package com.mycompany.gradecalculator62;

import javax.swing.*;

public class GradeCalculator62Frame extends JFrame {

    private JPanel jPanel1, jPanel2, jPanel3, jPanel4, jPanel5;
    private JLabel jLabel1, jLabel2, jLabel3, jLabel4, jLabel5, jLabel6, jLabel7, jLabel8,
    jLabel9, jLabel10;
    private JTextField engmarks, tamilmarks, mathsmarks, sciencemarks, socialmarks;
    private JTextField enggrade, tamilgrade, mathsgrade, sciencegrade, socialgrade;
    private JTextField totaltf, avgtf;
    private JButton calculatebutton;
    private JSeparator jSeparator1, jSeparator2;

    public GradeCalculator62Frame() {
        initComponents();
    }

    private void initComponents() {

        jPanel1 = new JPanel();
        jPanel2 = new JPanel();
        jLabel1 = new JLabel();
        jPanel3 = new JPanel();
        jLabel2 = new JLabel();
        engmarks = new JTextField();
        tamilmarks = new JTextField();
        mathsmarks = new JTextField();
        sciencemarks = new JTextField();
        socialmarks = new JTextField();
        jLabel3 = new JLabel();
        jLabel4 = new JLabel();
        jLabel5 = new JLabel();
        jLabel6 = new JLabel();
        jLabel7 = new JLabel();
        jSeparator1 = new JSeparator();
        jPanel4 = new JPanel();
```

```

jLabel8 = new JLabel();
enggrade = new JTextField();
tamilgrade = new JTextField();
mathsgrade = new JTextField();
sciencegrade = new JTextField();
socialgrade = new JTextField();
jSeparator2 = new JSeparator();
calculatebutton = new JButton();
jPanel5 = new JPanel();
jLabel9 = new JLabel();
jLabel10 = new JLabel();
totaltf = new JTextField();
avgtf = new JTextField();

setDefaultCloseOperation(WindowConstants.EXIT_ON_CLOSE);

jPanel1.setBackground(new java.awt.Color(133, 144, 246));

jPanel2.setBackground(new java.awt.Color(195, 203, 235));
jLabel1.setFont(new java.awt.Font("Sukhumvit Set", 1, 24));
jLabel1.setText("GRADE CALCULATOR");

GroupLayout jPanel2Layout = new GroupLayout(jPanel2);
jPanel2.setLayout(jPanel2Layout);
jPanel2Layout.setHorizontalGroup(
    jPanel2Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
        .addGroup(GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()
        .addGap(420, Short.MAX_VALUE)
        .addComponent(jLabel1)
        .addGap(438, 438, 438))
    );
jPanel2Layout.setVerticalGroup(
    jPanel2Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
        .addGroup(GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()
        .addGap(18, Short.MAX_VALUE)
        .addComponent(jLabel1)
        .addGap(14, 14, 14))
    );

jPanel3.setBackground(new java.awt.Color(195, 203, 235));
jLabel2.setFont(new java.awt.Font("Sukhumvit Set", 1, 22));
jLabel2.setText("ENTER MARKS");

JTextField[] marksFields = {engmarks, tamilmarks, mathsmarks, sciencemarks,
socialmarks};
String[] labels = {"ENGLISH", "TAMIL", "MATHS", "SCIENCE", "SOCIAL"};
JLabel[] markLabels = {jLabel3, jLabel4, jLabel5, jLabel6, jLabel7};

```

```

        GroupLayout jPanel3Layout = new GroupLayout(jPanel3);
        jPanel3.setLayout(jPanel3Layout);
        GroupLayout.SequentialGroup hGroup =
jPanel3Layout.createSequentialGroup().addGap(88);
        GroupLayout.SequentialGroup vGroup =
jPanel3Layout.createSequentialGroup().addGap(22)

.addComponent(jLabel2).addPreferredGap(LayoutStyle.ComponentPlacement.UNRELATED
)
        .addComponent(jSeparator1, GroupLayout.PREFERRED_SIZE, 10,
GroupLayout.PREFERRED_SIZE).addGap(21)
        .addGroup(jPanel3Layout.createParallelGroup(GroupLayout.Alignment.BASELINE)

.addComponent(jLabel3).addComponent(jLabel4).addComponent(jLabel5).addComponent(j
Label6).addComponent(jLabel7))
        .addGap(18);

        for (int i = 0; i < marksFields.length; i++) {
            marksFields[i].setFont(new java.awt.Font("Sukhumvit Set", 1, 16));
            marksFields[i].setHorizontalAlignment(JTextField.CENTER);
            hGroup.addComponent(marksFields[i], GroupLayout.PREFERRED_SIZE, 75,
GroupLayout.PREFERRED_SIZE).addGap(132);

vGroup.addGroup(jPanel3Layout.createParallelGroup(GroupLayout.Alignment.BASELINE)
        .addComponent(marksFields[i], GroupLayout.PREFERRED_SIZE, 44,
GroupLayout.PREFERRED_SIZE));
        }

jPanel3Layout.setHorizontalGroup(jPanel3Layout.createParallelGroup(GroupLayout.Alignm
ent.LEADING)
        .addGroup(jPanel3Layout.createSequentialGroup()
            .addContainerGap()

.addGroup(jPanel3Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
            .addComponent(jSeparator1)
            .addGroup(jPanel3Layout.createSequentialGroup()

.addGroup(jPanel3Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
                .addComponent(jLabel2)
                .addGroup(jPanel3Layout.createSequentialGroup()
                    .addGap(78, 78, 78)
                    .addComponent(jLabel3)
                    .addGap(131, 131, 131)
                    .addComponent(jLabel4)
                    .addGap(140, 140, 140)
                    .addComponent(jLabel5)
                    .addGap(149, 149, 149)
                    .addComponent(jLabel6)
                    .addGap(131, 131, 131)
                    .addComponent(jLabel7)))
            )
        )
    )

```

```

        .addGap(0, 0, Short.MAX_VALUE))))
    .addGroup(jPanel3Layout.createSequentialGroup()
        .addGap(98, 98, 98)
        .addGroup(hGroup)
        .addContainerGap(GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
    );
jPanel3Layout.setVerticalGroup(vGroup);

jPanel4.setBackground(new java.awt.Color(195, 203, 235));
jLabel8.setFont(new java.awt.Font("Sukhumvit Set", 1, 18));
jLabel8.setText("GRADE");

JTextField[] gradeFields = {enggrade, tamilgrade, mathsgrade, sciencegrade,
socialgrade};

GroupLayout jPanel4Layout = new GroupLayout(jPanel4);
jPanel4.setLayout(jPanel4Layout);
GroupLayout.SequentialGroup hGroupGrades =
jPanel4Layout.createSequentialGroup().addGap(90);
GroupLayout.SequentialGroup vGroupGrades =
jPanel4Layout.createSequentialGroup().addGap(19)

.addComponent(jLabel8).addPreferredGap(LayoutStyle.ComponentPlacement.RELATED)
    .addComponent(jSeparator2, GroupLayout.PREFERRED_SIZE, 10,
GroupLayout.PREFERRED_SIZE).addGap(26);

for (JTextField gradeField : gradeFields) {
    gradeField.setFont(new java.awt.Font("Sukhumvit Set", 1, 16));
    gradeField.setHorizontalAlignment(JTextField.CENTER);
    hGroupGrades.addComponent(gradeField, GroupLayout.PREFERRED_SIZE, 75,
GroupLayout.PREFERRED_SIZE).addGap(132);

vGroupGrades.addGroup(jPanel4Layout.createParallelGroup(GroupLayout.Alignment.BASELINE)
    .addComponent(gradeField, GroupLayout.PREFERRED_SIZE, 45,
GroupLayout.PREFERRED_SIZE));
}

jPanel4Layout.setHorizontalGroup(jPanel4Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
    .addGroup(jPanel4Layout.createSequentialGroup()
        .addGroup(jPanel4Layout.createSequentialGroup()
            .addGap(98, 98, 98)
            .addGroup(hGroupGrades)
            .addContainerGap(GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
        .addGroup(jPanel4Layout.createSequentialGroup()
            .addContainerGap()
            .addGroup(jPanel4Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
                .addComponent(jSeparator2)

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```

        .addGroup(jPanel4Layout.createSequentialGroup()
            .addComponent(jLabel8)
            .addGap(0, 0, Short.MAX_VALUE))))
    );
    jPanel4Layout.setVerticalGroup(vGroupGrades);

    calculatebutton.setFont(new java.awt.Font("Sukhumvit Set", 1, 18));
    calculatebutton.setText("CALCULATE");
    calculatebutton.addActionListener(evt -> calculateGrades());

    jPanel5.setBackground(new java.awt.Color(195, 203, 235));
    jLabel9.setFont(new java.awt.Font("Sukhumvit Set", 1, 18));
    jLabel9.setText("TOTAL:");
    jLabel10.setFont(new java.awt.Font("Sukhumvit Set", 1, 18));
    jLabel10.setText("AVERAGE:");

    GroupLayout jPanel5Layout = new GroupLayout(jPanel5);
    jPanel5.setLayout(jPanel5Layout);
    jPanel5Layout.setHorizontalGroup(
        jPanel5Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
            .addGroup(jPanel5Layout.createSequentialGroup()
                .addGap(96, 96, 96)
                .addComponent(jLabel9)
                .addGap(28, 28, 28)
                .addComponent(totaltf, GroupLayout.PREFERRED_SIZE, 111,
                    GroupLayout.PREFERRED_SIZE)
                .addPreferredGap(LayoutStyle.ComponentPlacement.RELATED)
                .addComponent(jLabel10)
                .addGap(47, 47, 47)
                .addComponent(avgtf, GroupLayout.PREFERRED_SIZE, 111,
                    GroupLayout.PREFERRED_SIZE)
                .addGap(106, 106, 106))
    );
    jPanel5Layout.setVerticalGroup(
        jPanel5Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
            .addGroup(jPanel5Layout.createSequentialGroup()
                .addGap(42, 42, 42)
                .addGroup(jPanel5Layout.createParallelGroup(GroupLayout.Alignment.BASELINE)
                    .addComponent(jLabel9)
                    .addComponent(jLabel10)
                    .addComponent(totaltf, GroupLayout.PREFERRED_SIZE, 37,
                        GroupLayout.PREFERRED_SIZE)
                    .addComponent(avgtf, GroupLayout.PREFERRED_SIZE, 37,
                        GroupLayout.PREFERRED_SIZE))
                .addGap(43, Short.MAX_VALUE))
    );

    GroupLayout jPanel1Layout = new GroupLayout(jPanel1);

```



```

jPanel1.setLayout(jPanel1Layout);
jPanel1Layout.setHorizontalGroup(
    jPanel1Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
        .addComponent(jPanel2, GroupLayout.DEFAULT_SIZE,
GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        .addComponent(jPanel3, GroupLayout.DEFAULT_SIZE,
GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        .addComponent(jPanel4, GroupLayout.DEFAULT_SIZE,
GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        .addComponent(jPanel5, GroupLayout.DEFAULT_SIZE,
GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        .addGroup(GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()
        .addContainerGap(GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        .addComponent(calculatebutton)
        .addGap(485, 485, 485))
);
jPanel1Layout.setVerticalGroup(
    jPanel1Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
        .addGroup(jPanel1Layout.createSequentialGroup()
        .addComponent(jPanel2, GroupLayout.PREFERRED_SIZE,
GroupLayout.DEFAULT_SIZE, GroupLayout.PREFERRED_SIZE)
        .addGap(27, 27, 27)
        .addComponent(jPanel3, GroupLayout.PREFERRED_SIZE,
GroupLayout.DEFAULT_SIZE, GroupLayout.PREFERRED_SIZE)
        .addGap(18, 18, 18)
        .addComponent(calculatebutton)
        .addGap(18, 18, 18)
        .addComponent(jPanel4, GroupLayout.PREFERRED_SIZE,
GroupLayout.DEFAULT_SIZE, GroupLayout.PREFERRED_SIZE)
        .addGap(18, 18, 18)
        .addComponent(jPanel5, GroupLayout.PREFERRED_SIZE,
GroupLayout.DEFAULT_SIZE, GroupLayout.PREFERRED_SIZE)
        .addContainerGap(GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
);

getContentPane().setLayout(new GroupLayout(getContentPane()));
getContentPane().add(jPanel1, GroupLayout.DEFAULT_SIZE,
GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE);

pack();
}

private void calculateGrades() {
    float[] marks = new float[5];
    JTextField[] marksFields = {engmarks, tamilmarks, mathsmarks, sciencemarks,
socialmarks};
    JTextField[] gradeFields = {enggrade, tamilgrade, mathsgrade, sciencegrade,
socialgrade};
    String[] grades = {"A", "B", "C", "D"};

```

```

for (int i = 0; i < marksFields.length; i++) {
    marks[i] = Float.parseFloat(marksFields[i].getText());
    if (marks[i] >= 90) {
        gradeFields[i].setText(grades[0]);
    } else if (marks[i] >= 80) {
        gradeFields[i].setText(grades[1]);
    } else if (marks[i] >= 70) {
        gradeFields[i].setText(grades[2]);
    } else {
        gradeFields[i].setText(grades[3]);
    }
}

float total = 0;
for (float mark : marks) {
    total += mark;
}
float average = total / marks.length;

totaltf.setText(String.valueOf(total));
avgtf.setText(String.valueOf(average));
}

public static void main(String args[]) {
    java.awt.EventQueue.invokeLater(() -> new
GradeCalulator62Frame().setVisible(true));
}
}

```

Output:

GRADE CALCULATOR				
ENTER MARKS				
ENGLISH	TAMIL	MATHS	SCIENCE	SOCIAL
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
CALCULATE				
GRADE				
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
TOTAL: <input type="text"/>		AVERAGE: <input type="text"/>		

Result:

A user interface by applying design rules for assigning a grade to students based on the subject marks was successfully designed and implemented.

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:

ASCENDING AND DESCENDING

Input:

Ascending **Descending**

Display:

Result:

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

EXPERIMENT:4

User Interface for Calculator

Aim:

To design a user interface by using task analysis for calculator.

Program:

```
import javax.swing.*;

public class NewJFram2 extends JFrame {

    private JPanel jPanel1;
    private JTextField txtResult;
    private JButton[] numberButtons;
    private JButton btnClear, btnPlusMinus, btnPlus, btnMinus, btnMultiply, btnDivide,
    btnEquals;

    private static int value1, value2;
    private static String operator;

    public NewJFram2() {
        initComponents();
    }

    private void initComponents() {
        jPanel1 = new JPanel();
        txtResult = new JTextField();
        numberButtons = new JButton[10];
        for (int i = 0; i < 10; i++) {
            numberButtons[i] = new JButton(String.valueOf(i));
            numberButtons[i].addMouseListener(new java.awt.event.MouseAdapter() {
                public void mouseClicked(java.awt.event.MouseEvent evt) {
                    numberButtonMouseClicked(evt);
                }
            });
        }
        btnClear = new JButton("CE");
        btnPlusMinus = new JButton("/+/-");
        btnPlus = new JButton("+");
        btnMinus = new JButton("-");
        btnMultiply = new JButton("*");
        btnDivide = new JButton("/");
        btnEquals = new JButton("=");

        btnClear.addMouseListener(new java.awt.event.MouseAdapter() {
            public void mouseClicked(java.awt.event.MouseEvent evt) {
```

```

        txtResult.setText("");
    }
});

btnPlus.addMouseListener(new java.awt.event.MouseAdapter() {
    public void mouseClicked(java.awt.event.MouseEvent evt) {
        setOperator("plus");
    }
});

btnMinus.addMouseListener(new java.awt.event.MouseAdapter() {
    public void mouseClicked(java.awt.event.MouseEvent evt) {
        setOperator("minus");
    }
});

btnMultiply.addMouseListener(new java.awt.event.MouseAdapter() {
    public void mouseClicked(java.awt.event.MouseEvent evt) {
        setOperator("multiplication");
    }
});

btnDivide.addMouseListener(new java.awt.event.MouseAdapter() {
    public void mouseClicked(java.awt.event.MouseEvent evt) {
        setOperator("division");
    }
});

btnEquals.addMouseListener(new java.awt.event.MouseAdapter() {
    public void mouseClicked(java.awt.event.MouseEvent evt) {
        calculateResult();
    }
});

GroupLayout jPanel1Layout = new GroupLayout(jPanel1);
jPanel1.setLayout(jPanel1Layout);
jPanel1Layout.setHorizontalGroup(
    jPanel1Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
        .addComponent(txtResult)
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addComponent(numberButtons[1])
            .addComponent(numberButtons[4])
            .addComponent(numberButtons[7])
            .addComponent(btnPlusMinus))
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addComponent(numberButtons[2])
            .addComponent(numberButtons[5])
            .addComponent(numberButtons[8])
            .addComponent(btnDivide))
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addComponent(numberButtons[3])
            .addComponent(numberButtons[6])
            .addComponent(numberButtons[9])
            .addComponent(btnMultiply))
        .addComponent(btnEquals));

```



```

        .addComponent(numberButtons[8])
        .addComponent(numberButtons[0]))

    .addGroup(jPanel1Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
        .addComponent(numberButtons[3])
        .addComponent(numberButtons[6])
        .addComponent(numberButtons[9])
        .addComponent(btnClear))

    .addGroup(jPanel1Layout.createParallelGroup(GroupLayout.Alignment.LEADING)
        .addComponent(btnDivide)
        .addComponent(btnMultiply)
        .addComponent(btnMinus)
        .addComponent(btnPlus)))
    .addComponent(btnEquals)
    );

    jPanel1Layout.setVerticalGroup(
        jPanel1Layout.createSequentialGroup()
        .addComponent(txtResult, GroupLayout.PREFERRED_SIZE,
        GroupLayout.DEFAULT_SIZE, GroupLayout.PREFERRED_SIZE)

    .addGroup(jPanel1Layout.createParallelGroup(GroupLayout.Alignment.BASELINE)
        .addComponent(numberButtons[1])
        .addComponent(numberButtons[2])
        .addComponent(numberButtons[3])
        .addComponent(btnDivide))

    .addGroup(jPanel1Layout.createParallelGroup(GroupLayout.Alignment.BASELINE)
        .addComponent(numberButtons[4])
        .addComponent(numberButtons[5])
        .addComponent(numberButtons[6])
        .addComponent(btnMultiply))

    .addGroup(jPanel1Layout.createParallelGroup(GroupLayout.Alignment.BASELINE)
        .addComponent(numberButtons[7])
        .addComponent(numberButtons[8])
        .addComponent(numberButtons[9])
        .addComponent(btnMinus))

    .addGroup(jPanel1Layout.createParallelGroup(GroupLayout.Alignment.BASELINE)
        .addComponent(btnPlusMinus)
        .addComponent(numberButtons[0])
        .addComponent(btnClear)
        .addComponent(btnPlus))
    .addComponent(btnEquals)
    );

    getContentPane().setLayout(new GroupLayout(getContentPane()));
    getContentPane().add(jPanel1, GroupLayout.Alignment.LEADING);

```

```

        pack();
    }

    private void numberButtonMouseClicked(java.awt.event.MouseEvent evt) {
        JButton clickedButton = (JButton) evt.getSource();
        String buttonText = clickedButton.getText();
        if (txtResult.getText().isEmpty()) {
            txtResult.setText(buttonText);
            value1 = Integer.parseInt(buttonText);
        } else {
            txtResult.setText(txtResult.getText() + " " + buttonText);
            value2 = Integer.parseInt(buttonText);
        }
    }

    private void setOperator(String op) {
        if (!txtResult.getText().isEmpty()) {
            operator = op;
            txtResult.setText(txtResult.getText() + " " + getOperatorSymbol(op));
        }
    }

    private String getOperatorSymbol(String op) {
        switch (op) {
            case "plus":
                return "+";
            case "minus":
                return "-";
            case "multiplication":
                return "*";
            case "division":
                return "/";
            default:
                return "";
        }
    }

    private void calculateResult() {
        double result = 0;
        switch (operator) {
            case "plus":
                result = value1 + value2;
                break;
            case "minus":
                result = value1 - value2;
                break;
            case "multiplication":
                result = value1 * value2;
                break;
            case "division":

```

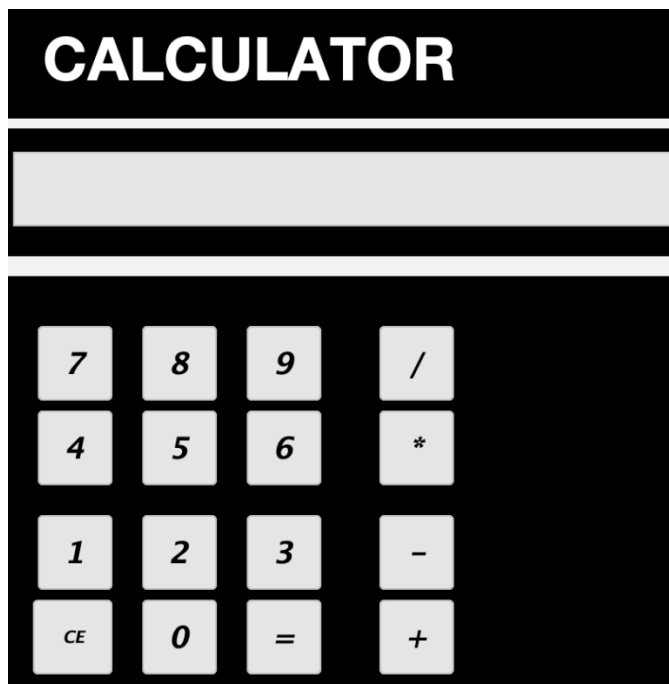
```

        result = value1 / (double) value2;
        break;
    }
    txtResult.setText(Double.toString(result));
}

public static void main(String args[]) {
    java.awt.EventQueue.invokeLater(() -> new NewJFram2().setVisible(true));
}
}

```

Output:



Result:

A user interface by using task analysis for calculator was designed and implemented successfully.

EXPERIMENT:5

User Interface for Student Admission

Aim:

To design a user interface with direct selection for registration of a student for admissions.

Figma File Link:

https://www.figma.com/proto/SNr9UV0j5fY9x9Cw1kWbtA/Npsi_School_Admission_page?node-id=0-1&t=HX7FMlvJEk3dwc0i-1

Screenshots:

The screenshot displays the user interface for the NPS International School Admission Form. At the top, the NPS International School logo is on the left, and a navigation menu with links for Home, About Us, Our Programs, Gallery, and Contact Us is on the right. A prominent red 'Admission' button is also visible in the navigation bar.

The main heading is 'Application Form For Admission'. Below it, a note states: 'Please Fill in the following details accurately to ensure a smooth and efficient registration process. All Fields marked with an asterisk (*) are mandatory. Ensure that the information provided is complete and correct to avoid any delays in processing your application.'

The form is divided into several sections:

- Admission At NPSI School:** This section includes a 'Please Select Branch' dropdown menu (currently showing 'KPHP'), a 'Registration Number*' text field (containing '123456'), and a 'Photo of the Student' section with an 'Upload PDF/Doc' button.
- Student Information:** This section contains fields for 'First Name' (Nagendra), 'Middle Name' (Babu), and 'Last Name' (Yadav). It also includes a 'Gender' dropdown (Male), a 'Date of Birth' field (DD/MM/YYYY), and an 'Admission To Class' dropdown (4th).
- *Parent/Guardian (Father):** This section includes a 'Choose Relation' dropdown (Father), 'Father First Name' (Ashok), 'Father Last Name' (Babu), 'Email Address' (Example@gmail.com), 'Phone Number' (+91 123 456 7890), and 'Education Qualification' (B.Tech). It also features a 'Residential Address of the Parent/Guardian' text area.
- Parent/Guardian (Mother):** This section includes a 'Choose Relation' dropdown (Mother), 'Mother First Name' (Avarthika), 'Mother Last Name' (Aul), 'Email Address' (Example@gmail.com), 'Phone Number' (+91 123 456 7890), and 'Education Qualification' (B.Tech). It also features a 'Residential Address of the Parent/Guardian' text area.

At the bottom of the form, there is a red 'Apply Now' button with a right-pointing arrow. Below the button, a disclaimer states: 'If there are any errors or missing information, you will see validation messages next to the respective fields. Please correct the errors and try submitting the form again.'

Result:

To Design a user interface with direct selection for registration of a student for admissions was competed successfully.

EXPERIMENT:6

User Interface for Photo Colour

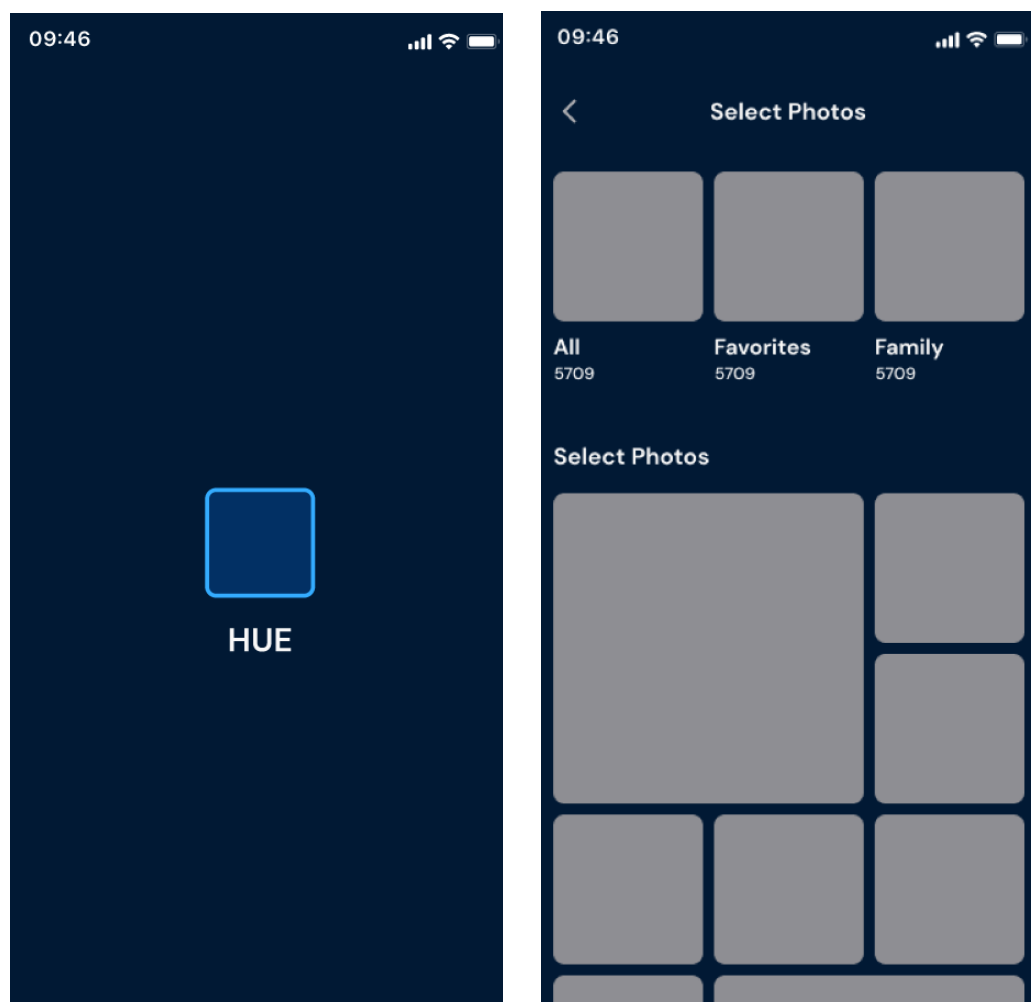
Aim:

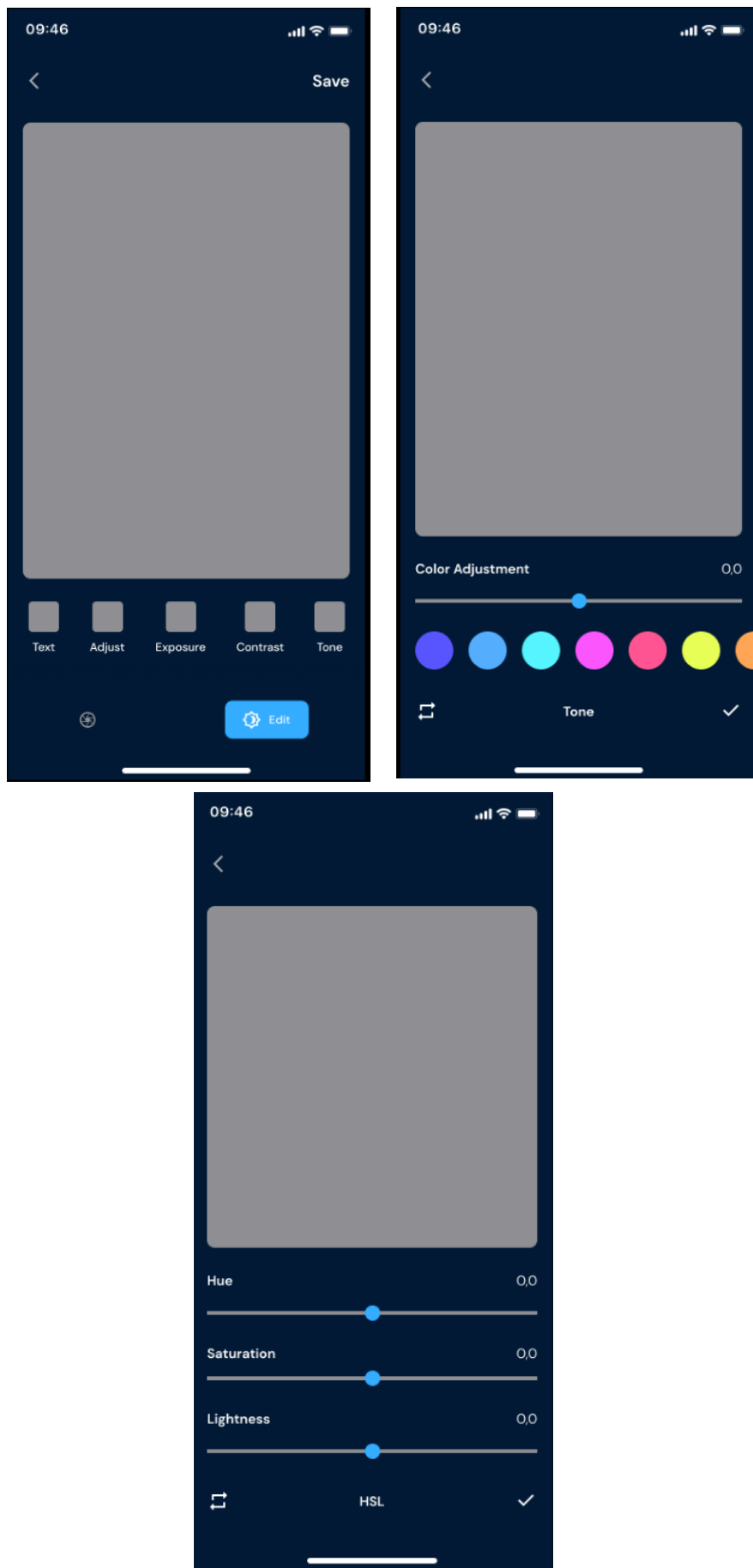
To design a user interface by using colours for displaying and changing of picture on the form.

Figma File Link:

https://www.figma.com/proto/K60gFbtZukbafENfbyEXke/HUE-photo_color?node-id=197-2427&t=f6yWMbXnLXHrJwKE-1

Screenshots:





Result:

To design a user interface with direct selection for registration of a student for admissions was completed successfully.

EXPERIMENT:7

User Interface for Exam Registration

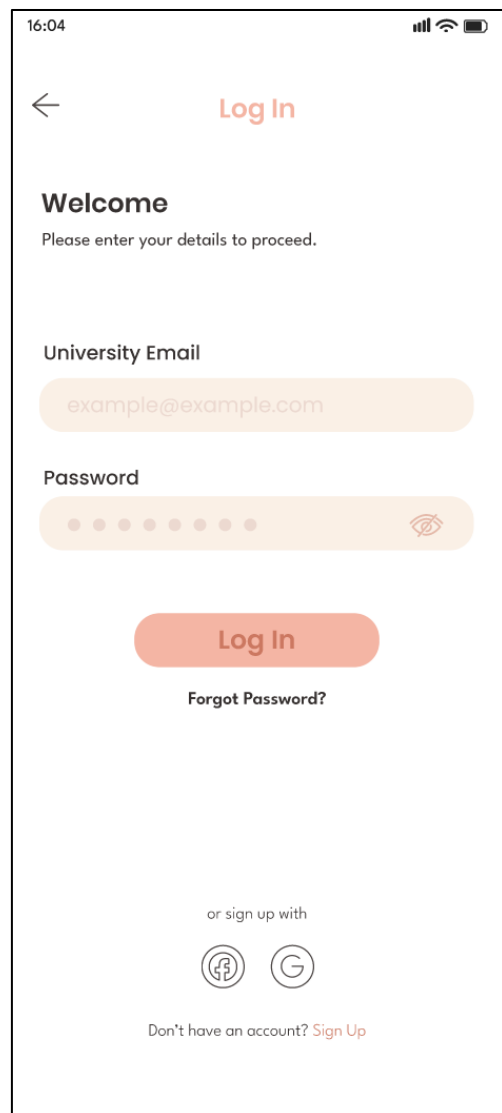
Aim:

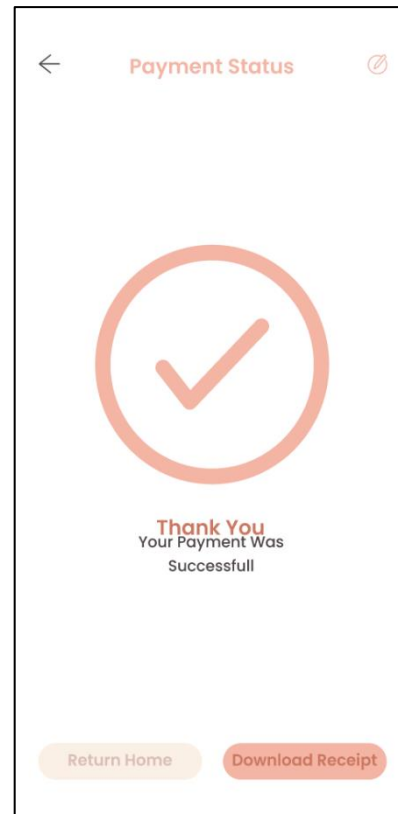
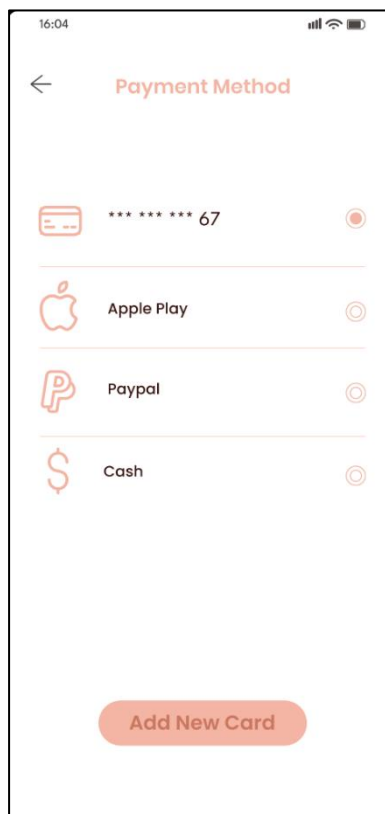
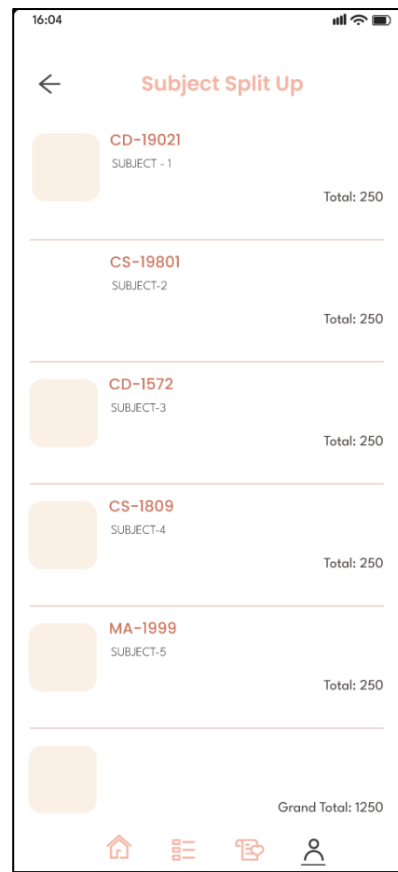
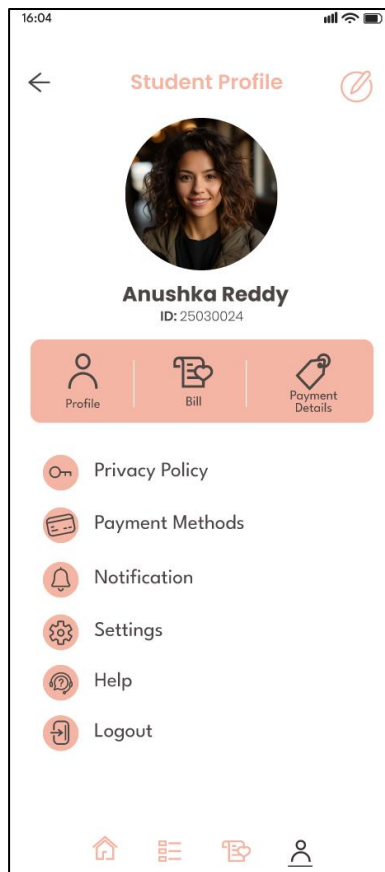
To design a user interface with widgets for end semester exam registrations

Figma File Link:

https://www.figma.com/proto/cjALHsgRdlplBLiBLczzGk/Exam_Registration?node-id=0-1&t=8oLVgUWcgDaqUxsP-1

Screenshots:





Result:

To design a user interface with direct selection for registration of a student for admissions was completed successfully.

EXPERIMENT:8

User Interface for Form

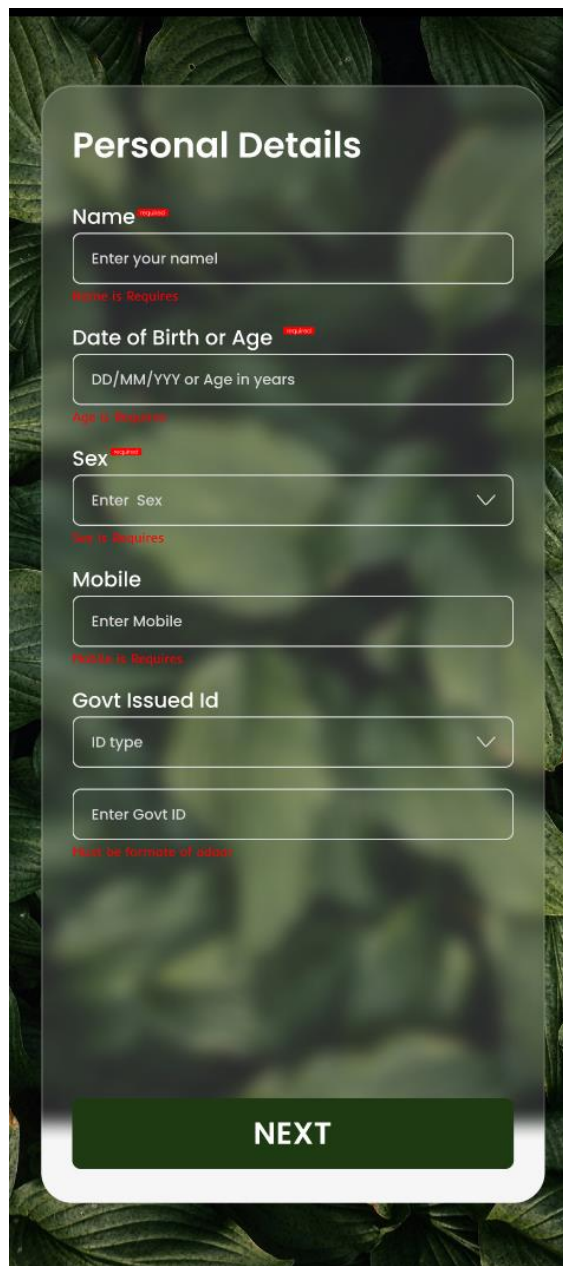
Aim:

To design a user interface by using drag and drop for creating forms

Figma File Link:

https://www.figma.com/proto/YeG0ItcX8QCZw9X2BleRb/Form_UI?node-id=130-105&t=jMLcCrk0OinbYT4m-1&scaling=min-zoom&page-id=112%3A3285

Screenshots:



Personal Details

Name Required

Enter your name

Name is Required

Date of Birth or Age Required

DD/MM/YYYY or Age in years

Age is Required

Sex Required

Enter Sex

Sex is Required

Mobile

Enter Mobile

Mobile is Required

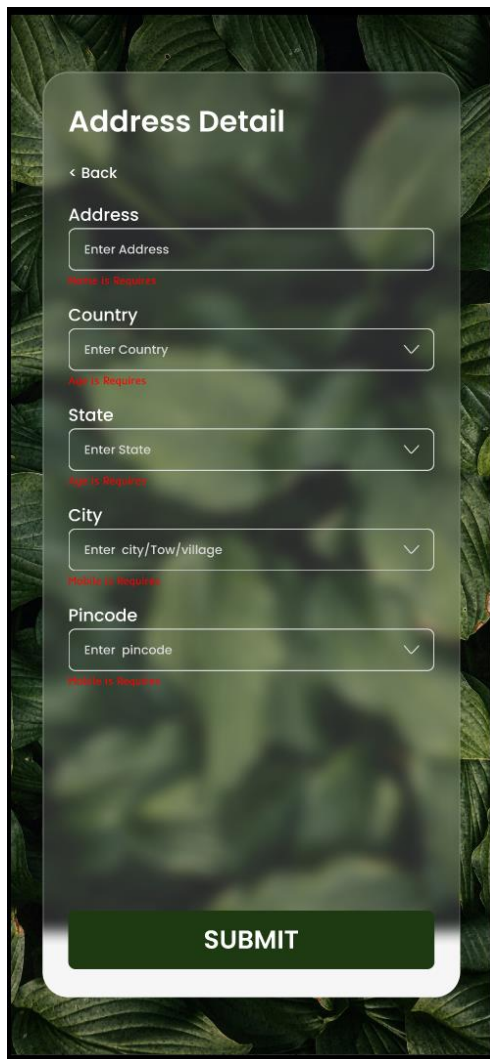
Govt Issued Id

ID type

Enter Govt ID

Must be format of idcard

NEXT



The image shows a mobile application screen with a dark green leaf pattern background. A semi-transparent white card is centered, titled "Address Detail" in bold. Below the title is a "< Back" link. The form contains five input fields, each with a red error message "Please is Required" below it: "Address" (text input), "Country" (dropdown), "State" (dropdown), "City" (dropdown), and "Pincode" (dropdown). A dark green "SUBMIT" button is at the bottom of the card.

Address Detail

< Back

Address

Enter Address

Please is Required

Country

Enter Country

Please is Required

State

Enter State

Please is Required

City

Enter city/Tow/village

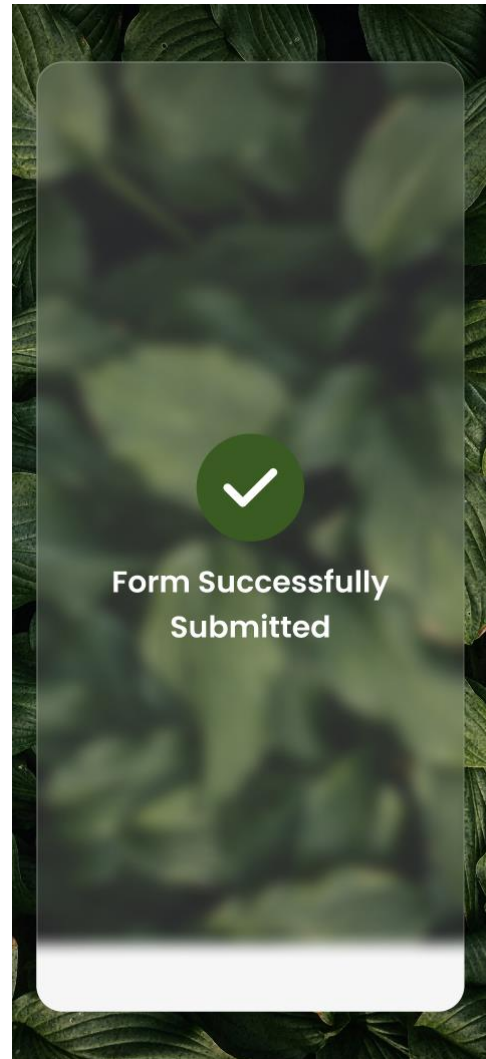
Please is Required

Pincode

Enter pincode

Please is Required

SUBMIT



Result:

To design a user interface by using drag and drop for creating forms was completed successfully.

EXPERIMENT:9

User Interface for Menu-Based Program

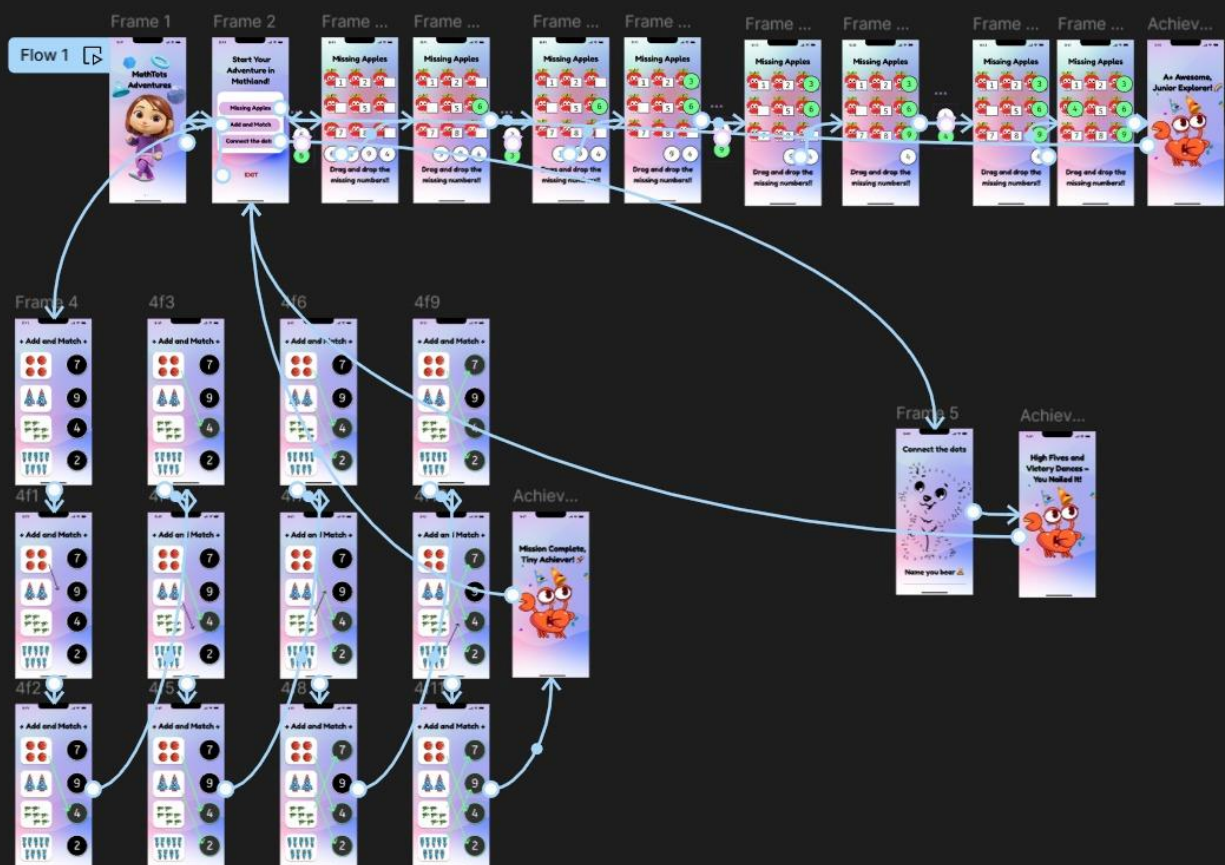
Aim:

To design a user interface with Overlays and Inlays for menu-based program

Figma File Link:

<https://www.figma.com/proto/dwfZSeq9W0SArGxqBpy3QI/Exp1?node-id=0-1&t=i2WYcUBU0WJnJnh6-1>

Screenshots:



Result:

To design a user interface with Overlays and Inlays for menu-based program was completed successfully.