MPL EXPERIMENT 4

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AIM: To create an interactive Form using form widget

Theory:

1.Introduction

Forms are an essential part of any mobile application, allowing users to input and submit data. In Flutter, forms are managed using the Form widget along with form fields like TextFormField, DropdownButtonFormField, Radio, and Checkbox. Forms help in gathering user information, validating inputs, and processing data securely.

Flutter provides a simple yet powerful way to create and manage forms, ensuring a smooth user experience. This project demonstrates the implementation of **Login and Signup Forms** in Flutter, focusing on best practices for UI, validation, and navigation.

Creating an Interactive Form Using Form Widgets in Flutter:

Forms in Flutter are used to collect user input interactively. The Form widget acts as a container that holds multiple input fields and manages validation, submission, and state.

Key Components of a Flutter Form:

1. **Form Widget:**
    - This is the parent container that groups all input fields.
    - It requires a GlobalKey<FormState> to manage validation and submission.
2. **Form Fields:**
    - Flutter provides various widgets to capture user input, such as:
        - **Text Fields:** For text input like names and emails.
        - **Dropdowns:** To allow selection from a predefined list.
        - **Checkboxes & Switches:** For boolean choices (e.g., agree to terms).
        - **Radio Buttons:** To choose one option from multiple choices.
3. **Validation Mechanism:**
    - Each input field can have a validation function to check if the entered data is correct.
    - The form can be validated as a whole before submission.

4. **Managing State:**
    - Flutter allows state management within forms using controllers or stateful widgets.
    - The input values can be dynamically updated based on user actions.
5. **Handling Submission:**
    - A form should include a submit button that validates all fields before proceeding.
    - If validation passes, the data can be processed, stored, or sent to a server.

Steps to Create an Interactive Form:

1. **Define the Form:** Wrap all input fields inside a form container.
2. **Add Input Fields:** Use appropriate widgets for user input, such as text fields, dropdowns, or checkboxes.
3. **Implement Validation:** Ensure fields are correctly filled before submission.
4. **Manage User Input Dynamically:** Capture and store input values for further processing.
5. **Submit the Form:** Trigger validation and process the data when the user submits.

CODE:

SignUp Page:

```
import 'package:flutter/material.dart';

class SignUpPage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      backgroundColor: Colors.blue.shade700,
      body: SafeArea(
        child: Column(
          children: [
            Spacer(),
            Text(
              'Create Account',
              style: TextStyle(fontSize: 26, color: Colors.white, fontWeight:
FontWeight.bold),
            ),
```

```
          Spacer(),
          Container(
            width: double.infinity,
            padding: EdgeInsets.symmetric(horizontal: 20, vertical: 30),
            decoration: BoxDecoration(
              color: Colors.white,
              borderRadius: BorderRadius.only(topLeft: Radius.circular(30),
topRight: Radius.circular(30)),
              boxShadow: [BoxShadow(color: Colors.black12, spreadRadius: 1,
blurRadius: 10)],
            ),
            child: Column(
              mainAxisSize: MainAxisSize.min,
              children: [
                _buildTextField("Full Name", Icons.person),
                SizedBox(height: 10),
                _buildTextField("Age", Icons.calendar_today, isNumber: true),
                SizedBox(height: 10),
                _buildTextField("Email", Icons.email),
                SizedBox(height: 10),
                _buildTextField("Password", Icons.lock, isPassword: true),
                SizedBox(height: 20),
                _buildButton(context, "Sign Up", Colors.blue, Colors.white, () {
                  Navigator.pushReplacementNamed(context, '/home');
                }),
              ],
            ),
          ),
        ],
      ),
    ),
  );
 }

  Widget _buildTextField(String label, IconData icon, {bool isPassword = false,
bool isNumber = false}) {
```

```
    return TextField(
      decoration: InputDecoration(
        labelText: label,
        prefixIcon: Icon(icon, color: Colors.blue),
        border: OutlineInputBorder(borderRadius: BorderRadius.circular(10)),
        filled: true,
        fillColor: Colors.grey.shade100,
      ),
      keyboardType: isNumber ? TextInputType.number : TextInputType.text,
      obscureText: isPassword,
    );
  }

  Widget _buildButton(BuildContext context, String text, Color bgColor, Color
textColor, VoidCallback onPressed) {
    return SizedBox(
      width: double.infinity,
      child: ElevatedButton(
        onPressed: onPressed,
        style: ElevatedButton.styleFrom(
          backgroundColor: bgColor,
          padding: EdgeInsets.symmetric(vertical: 15),
          shape: RoundedRectangleBorder(borderRadius: BorderRadius.circular(10)),
        ),
        child: Text(text, style: TextStyle(fontSize: 18, color: textColor)),
      ),
    );
  }
}
```

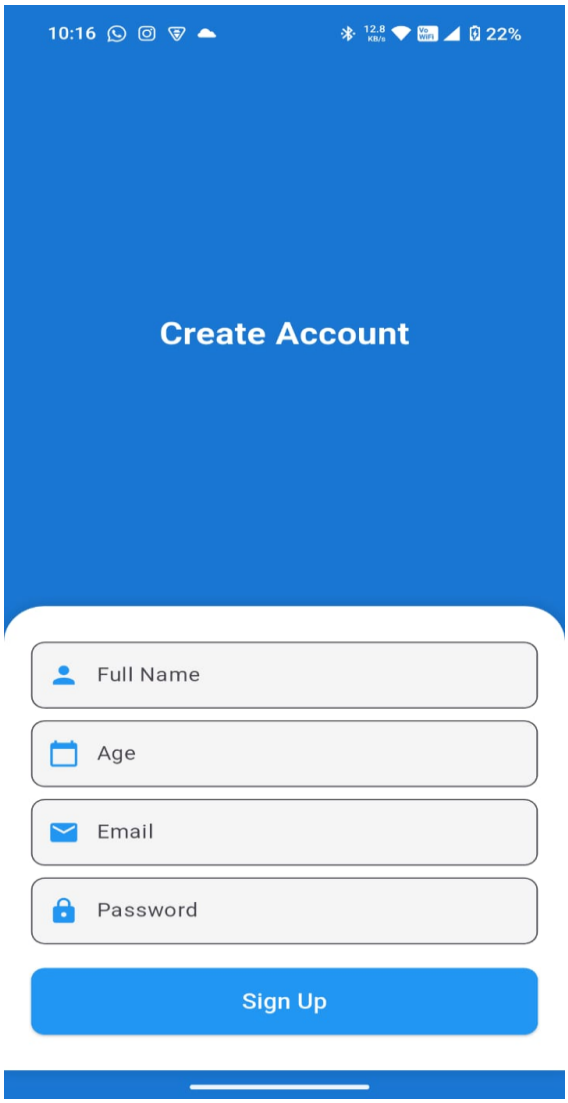
SignIn Page:

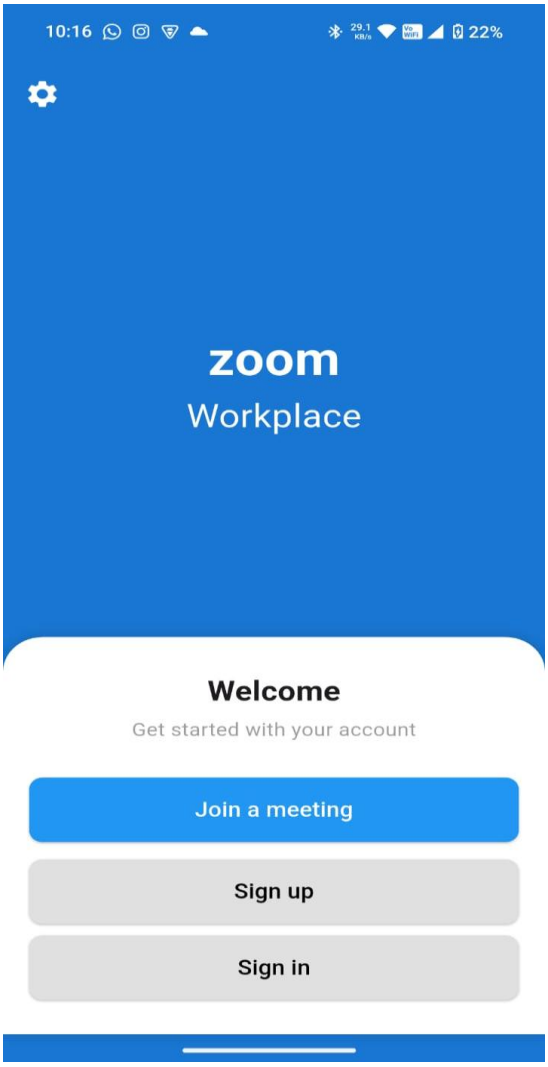
```
import 'package:flutter/material.dart';

class LoginPage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      backgroundColor: Colors.blue.shade700,
      body: SafeArea(
        child: Column(
          children: [
            Spacer(),
            Text(
              'Welcome Back',
              style: TextStyle(fontSize: 26, color: Colors.white, fontWeight:
FontWeight.bold),
            ),
            Spacer(),
            Container(
              width: double.infinity,
              padding: EdgeInsets.symmetric(horizontal: 20, vertical: 30),
              decoration: BoxDecoration(
                color: Colors.white,
                borderRadius: BorderRadius.only(topLeft: Radius.circular(30),
topRight: Radius.circular(30)),
                boxShadow: [BoxShadow(color: Colors.black12, spreadRadius: 1,
blurRadius: 10)],
              ),
              child: Column(
                mainAxisSize: MainAxisSize.min,
                children: [
                  _buildTextField("Email", Icons.email),
                  SizedBox(height: 10),
                  _buildTextField("Password", Icons.lock, isPassword: true),
                  SizedBox(height: 20),
                  _buildButton(context, "Login", Colors.blue, Colors.white, () {
                    Navigator.pushReplacementNamed(context, '/home');
```

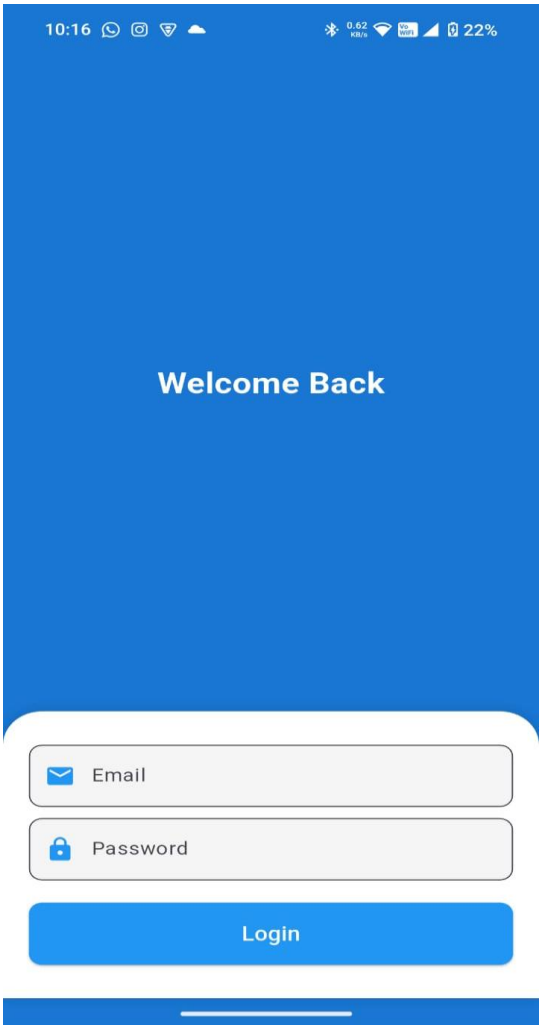
```
              }),
            ],
          ),
        ),
      ],
    ),
  ),
 );
}

 Widget _buildTextField(String label, IconData icon, {bool isPassword = false}) {
  return TextField(
   decoration: InputDecoration(
    labelText: label,
    prefixIcon: Icon(icon, color: Colors.blue),
    border: OutlineInputBorder(borderRadius: BorderRadius.circular(10)),
    filled: true,
    fillColor: Colors.grey.shade100,
   ),
   obscureText: isPassword,
  );
 }
 Widget _buildButton(BuildContext context, String text, Color bgColor, Color
textColor, VoidCallback onPressed) {
  return SizedBox(
   width: double.infinity,
   child: ElevatedButton(
    onPressed: onPressed,
    style: ElevatedButton.styleFrom(
     backgroundColor: bgColor,
     padding: EdgeInsets.symmetric(vertical: 15),
     shape: RoundedRectangleBorder(borderRadius: BorderRadius.circular(10)),
    ),
    child: Text(text, style: TextStyle(fontSize: 18, color: textColor)),
   ),
  );
```

```
    }
}
```

OUTPUT:


10:16
22%
Create Account
Full Name
Age
Email
Password
Sign Up


10:16
22%
zoom
Workplace
Welcome
Get started with your account
Join a meeting
Sign up
Sign in


10:16
22%
Welcome Back
Email
Password
Login