MPL Experiment 02

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AIM:

To design a Flutter UI by incorporating common widgets used in mobile application development.

Introduction:

Flutter provides a rich set of widgets to create flexible and visually appealing UIs. In this experiment, we design the user interface of our application using various Flutter widgets, ensuring a smooth user experience.

Common Widgets Used:

Below are the key widgets implemented in the app, along with the pages where they have been used:

1. Scaffold

- **Pages:** Landing Page, Login Page, Signup Page, Home Page, Profile Page
- **Usage:** Provides the basic structure, including an app bar and body layout.

2. Container

- **Pages:** Landing Page, Home Page, Profile Page
- **Usage:** Used for layout customization, including backgrounds and padding.

3. Column & Row

- **Pages:** Landing Page, Login Page, Signup Page, Profile Page
- **Usage:** Aligns widgets vertically (Column) and horizontally (Row) for structured UI design.

4. Text

- **Pages:** Landing Page, Login Page, Signup Page, Home Page, Profile Page
- **Usage:** Displays static and dynamic text content.

5. TextField

- **Pages:** Login Page, Signup Page, Profile Page
- **Usage:** Captures user input for authentication and profile details.

6. ElevatedButton

- **Pages:** Landing Page, Login Page, Signup Page, Profile Page
- **Usage:** Implements user actions like login, signup, and logout.

7. ListView

- **Pages:** Home Page, Discover Page
- **Usage:** Shows a list of live streams, reels, or other content.

CODE:

// landing_page.dart, LoginPage(), SignupPage.dart()

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

import 'package:shared_preferences/shared_preferences.dart';

import 'package:twitch_mpl_lab/pages/home_page.dart';

import 'package:firebase_auth/firebase_auth.dart';



class LandingPage extends StatelessWidget {

  final VoidCallback onLoginSuccess;

  LandingPage({required this.onLoginSuccess});


  Future<void> _setLoginStatus(BuildContext context) async {

    SharedPreferences prefs = await SharedPreferences.getInstance();

    await prefs.setBool('isLoggedIn', true);

    onLoginSuccess();
```

```dart
    Navigator.pushReplacement(

      context,

      MaterialPageRoute(builder: (context) => HomePage()),

    );

  }


  @override

  Widget build(BuildContext context) {

    return Scaffold(

      body: Stack(

        children: [

          // Background Image

          Positioned.fill(

            child: Image.asset(

              'assets/images/landingbg.png', // Make sure this image is
placed in assets folder

              fit: BoxFit.cover,

            ),

          ),

          // Gradient Overlay for better readability

          Positioned.fill(

            child: Container(

              decoration: BoxDecoration(

                gradient: LinearGradient(
```

```dart
            colors: [Colors.black.withOpacity(0.5),
Colors.black.withOpacity(0.7)],

            begin: Alignment.topCenter,

            end: Alignment.bottomCenter,

          ),

        ),

      ),

      // Content

      Center(

        child: Padding(

          padding: EdgeInsets.symmetric(horizontal: 20),

          child: Column(

            mainAxisSize: MainAxisSize.min,

            children: [

              Text(

                "There's something for you on Twitch",

                style: TextStyle(

                  fontSize: 24,

                  fontWeight: FontWeight.bold,

                  color: Colors.white,

                ),

                textAlign: TextAlign.center,

              ),
```

```dart
                SizedBox(height: 40),

                // Buttons Row

                Row(

                  mainAxisAlignment: MainAxisAlignment.center,

                  children: [

                    // Log In Button (White with Opacity)

                    ElevatedButton(

                      onPressed: () {

                        Navigator.push(

                          context,

                          MaterialPageRoute(

                            builder: (context) =>
LoginPage(onLoginSuccess: () => _setLoginStatus(context)),

                          ),

                        );

                      },

                      style: ElevatedButton.styleFrom(

                        backgroundColor: Colors.white.withOpacity(0.7),

                        foregroundColor: Colors.black,

                        padding: EdgeInsets.symmetric(horizontal: 40,
vertical: 15),

                      ),

                      child: Text("Log In"),

                    ),
```

```
                    SizedBox(width: 20), // Spacing between buttons

                    // Sign Up Button (Solid White)

                    ElevatedButton(

                      onPressed: () {

                        Navigator.push(

                          context,

                          MaterialPageRoute(

                            builder: (context) =>
SignupPage(onSignupSuccess: () => _setLoginStatus(context)),

                          ),

                        );

                      },

                      style: ElevatedButton.styleFrom(

                        backgroundColor: Colors.white,

                        foregroundColor: Colors.black,

                        padding: EdgeInsets.symmetric(horizontal: 40,
vertical: 15),

                      ),

                      child: Text("Sign Up"),

                    ),

                  ],

                ),

              ],

            ),
```

```dart
            ),

          ),

        ],

      ),

    );

  }

}


class LoginPage extends StatefulWidget {

  final VoidCallback onLoginSuccess;


  LoginPage({required this.onLoginSuccess});


  @override

  _LoginPageState createState() => _LoginPageState();

}


class _LoginPageState extends State<LoginPage> {

  final TextEditingController _emailController = TextEditingController();

  final TextEditingController _passwordController =
TextEditingController();

  final FirebaseAuth _auth = FirebaseAuth.instance;


  Future<void> _login() async {
```

```dart
    try {

      await _auth.signInWithEmailAndPassword(

        email: _emailController.text.trim(),

        password: _passwordController.text.trim(),

      );

      widget.onLoginSuccess();

    } catch (e) {

      print("Login failed: $e");

      ScaffoldMessenger.of(context).showSnackBar(

        SnackBar(content: Text("Login failed: ${e.toString()}")),

      );

    }

  }


  @override

  Widget build(BuildContext context) {

    return Scaffold(

      appBar: AppBar(title: Text("Log In")),

      body: Padding(

        padding: EdgeInsets.all(20),

        child: Column(

          mainAxisAlignment: MainAxisAlignment.center,

          children: [
```

```
          TextField(

            controller: _emailController,

            decoration: InputDecoration(labelText: "Email"),

          ),

          TextField(

            controller: _passwordController,

            decoration: InputDecoration(labelText: "Password"),

            obscureText: true,

          ),

          SizedBox(height: 20),

          ElevatedButton(

            onPressed: _login,

            child: Text("Log In"),

          ),

        ],

      ),

    );

  }

}


class SignupPage extends StatefulWidget {

  final VoidCallback onSignupSuccess;
```

```dart
  SignupPage({required this.onSignupSuccess});


  @override

  _SignupPageState createState() => _SignupPageState();

}



class _SignupPageState extends State<SignupPage> {

  final TextEditingController _emailController = TextEditingController();

  final TextEditingController _passwordController =
TextEditingController();

  final FirebaseAuth _auth = FirebaseAuth.instance;


  Future<void> _signup() async {

    try {

      await _auth.createUserWithEmailAndPassword(

        email: _emailController.text.trim(),

        password: _passwordController.text.trim(),

      );

      widget.onSignupSuccess();

    } catch (e) {

      print("Signup failed: $e");

      ScaffoldMessenger.of(context).showSnackBar(

        SnackBar(content: Text("Signup failed: ${e.toString()}")),
```

```dart
    );

  }

}


@override

Widget build(BuildContext context) {

  return Scaffold(

    appBar: AppBar(title: Text("Sign Up")),

    body: Padding(

      padding: EdgeInsets.all(20),

      child: Column(

        mainAxisAlignment: MainAxisAlignment.center,

        children: [

          TextField(

            controller: _emailController,

            decoration: InputDecoration(labelText: "Email"),

          ),

          TextField(

            controller: _passwordController,

            decoration: InputDecoration(labelText: "Password"),

            obscureText: true,

          ),

          SizedBox(height: 20),
```

```dart
            ElevatedButton(

              onPressed: _signup,

              child: Text("Sign Up"),

            ),

          ],

        ),

      ),

    );

  }

}
```

// discover_page.dart

```dart
@override

  Widget build(BuildContext context) {

    return Scaffold(

      backgroundColor: Colors.black,

      body: SafeArea(

        child: Column(

          children: [

            // Search bar

            Padding(

              padding: const EdgeInsets.all(16.0),

              child: Container(
```

```dart
          height: 48,

          decoration: BoxDecoration(

            color: const Color(0xFF303030),

            borderRadius: BorderRadius.circular(8),

          ),

          child: Row(

            children: [

              const SizedBox(width: 12),

              Icon(Icons.search, color: Colors.grey[400], size: 24),

              const SizedBox(width: 12),

            ],

          ),

        ),

      ),


      // Tab navigation

      Padding(

        padding: const EdgeInsets.symmetric(horizontal: 16.0),

        child: Row(

          children: [

            Column(

              crossAxisAlignment: CrossAxisAlignment.start,

              children: [
```

```dart
        const Text(
          'Categories',
          style: TextStyle(
            color: Color(0xFFB19DD0), // Light purple
            fontSize: 18,
            fontWeight: FontWeight.bold,
          ),
        ),
        const SizedBox(height: 4),
        Container(
          width: 124,
          height: 3,
          color: const Color(0xFF9147FF), // Twitch purple
        ),
      ],
    ),
    const SizedBox(width: 24),
    const Text(
      'Live Channels',
      style: TextStyle(
        color: Colors.white,
        fontSize: 18,
        fontWeight: FontWeight.bold,
```

```dart
              ),
            ),

            const Spacer(),

            Icon(Icons.tune, color: Colors.grey[400]),
          ],
        ),
      ),


      const SizedBox(height: 16),


      // Game categories grid
      Expanded(
        child: isLoading
            ? const Center(
                child: CircularProgressIndicator(
                  color: Color(0xFF9147FF), // Twitch purple
                ),
              )
            : GridView.builder(
                padding: const EdgeInsets.symmetric(horizontal: 16),
                itemCount: categories.length,
                gridDelegate: const
SliverGridDelegateWithFixedCrossAxisCount(
                  crossAxisCount: 3,
```

```dart
                    mainAxisSpacing: 16,

                    crossAxisSpacing: 16,

                    childAspectRatio: 0.7,

                  ),

                  itemBuilder: (context, index) {

                    final category = categories[index];

                    return _buildCategoryCard(

                      category['title']!,

                      category['image']!,

                      category['viewers']!,

                      category['categoryTag']!,

                    );

                  },

                ),

              ),

          ],

        ),

      ),

    );

}
```
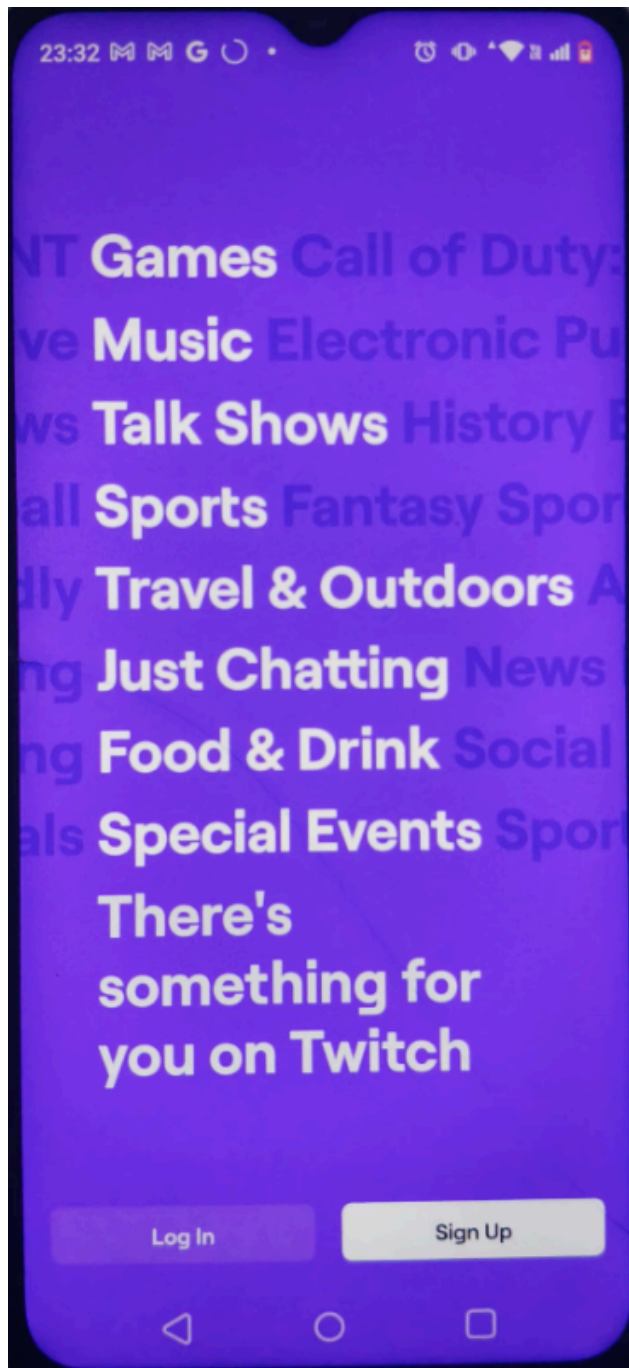
OUTPUT:

21:47

← **Log In**

Username

Password

Trouble logging in?

Log In

Join Twitch today

Username

Password

👁

Date of birth

| Month ⇕ | Day ⇕ | Year ⇕ |

Phone number

| India +91 ⇕ | |

Use email instead

Twitch may use your phone number to call or send text messages with information regarding your account.

By tapping Sign Up, you are agreeing to Twitch's Terms of Service and are acknowledging our Privacy Notice applies.

Sign up

23:48

🔍

Categories   **Live Channels**   ⇄

Just Chatting
🔴 102.6K Viewe...
IRL

Counter-Strike
🔴 36.1K Viewers
FPS

League of Le...
🔴 28.2K Viewers
MOBA

Monster Hun...
🔴 13.5K Viewers
Gaming

Grand Theft ...
🔴 4.8K Viewers
Gaming

World of War...
🔴 24.6K Viewers
Gaming

VALORANT
🔴 14.8K Viewers
FPS

Fortnite
🔴 10.6K Viewers
Shooter

Destiny 2
🔴 65.1K Viewers
Gaming

🏠 Home   🔍 Browse   ➕ Add   🔔 Activity   👤 Profile

Conclusion:

By using these common widgets, we were able to create an interactive and visually appealing UI in Flutter. These widgets allow for flexible customization and efficient UI design for mobile applications.