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Subject : MPL Exp 02

Aim : To design Flutter UI by including common widgets.

Theory : Widgets are the building blocks of a Flutter application. In Flutter, everything is a widget, from simple elements like text and images to complex structures like entire layouts and navigations. Flutter provides a rich set of predefined widgets to create various UI components, which can be combined to build a complex UI.

Common Flutter Widgets:

1. Text Widget:

- Used to display text on the screen. You can customize its style, size, color, and alignment.

2. Container Widget:
    - A box that can contain other widgets. It is used for styling, adding padding, margin, alignment, and background color to widgets.
3. Row and Column Widgets:
    - Row: Arranges widgets horizontally.
    - Column: Arranges widgets vertically.
    - These widgets are fundamental for creating flexible layouts and positioning UI elements.
4. Image Widget:
    - Used to display images in the app, either from assets, network, or file system.
5. Button Widgets:
    - Flutter offers several button widgets like RaisedButton, FlatButton, ElevatedButton, and IconButton that are used for interaction. These buttons are essential for handling user input and triggering actions.
6. TextField Widget:
    - Used for user input. It provides an editable field where the user can type text.
7. Scaffold Widget:
    - This is a top-level container that holds the structure of the UI. It includes the app bar, body, drawer, and bottom navigation bar. It provides a standard layout for the app.
8. ListView Widget:
    - A scrolling widget that allows the display of a long list of items. It is used for displaying dynamic content efficiently.

Layouts in Flutter:

- Padding: Adds space around a widget.
- Align: Aligns a widget within its parent.

- Expanded: Makes a widget expand to fill available space in a Row, Column, or Flex.
- Stack: Used for placing widgets on top of one another.

Code File : main.dart

```
import 'package:flutter/material.dart';
import 'package:flutter/services.dart';
import 'welcome_screen.dart';
void main() {
  SystemChrome.setSystemUIOverlayStyle(const SystemUiOverlayStyle(
    statusBarColor: Colors.transparent,
  ));
  runApp(const MyApp());
}

class MyApp extends StatelessWidget {
  const MyApp({super.key});

  // This widget is the root of your application.
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      theme: ThemeData(
        fontFamily: ('inter'),
        useMaterial3: true,
      ),
      home:const WelcomeScreen(),
    );
  }
}
```

File : welcome_screen.dart

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

class WelcomeScreen extends StatelessWidget {
  const WelcomeScreen({Key? key}) : super(key: key);
```

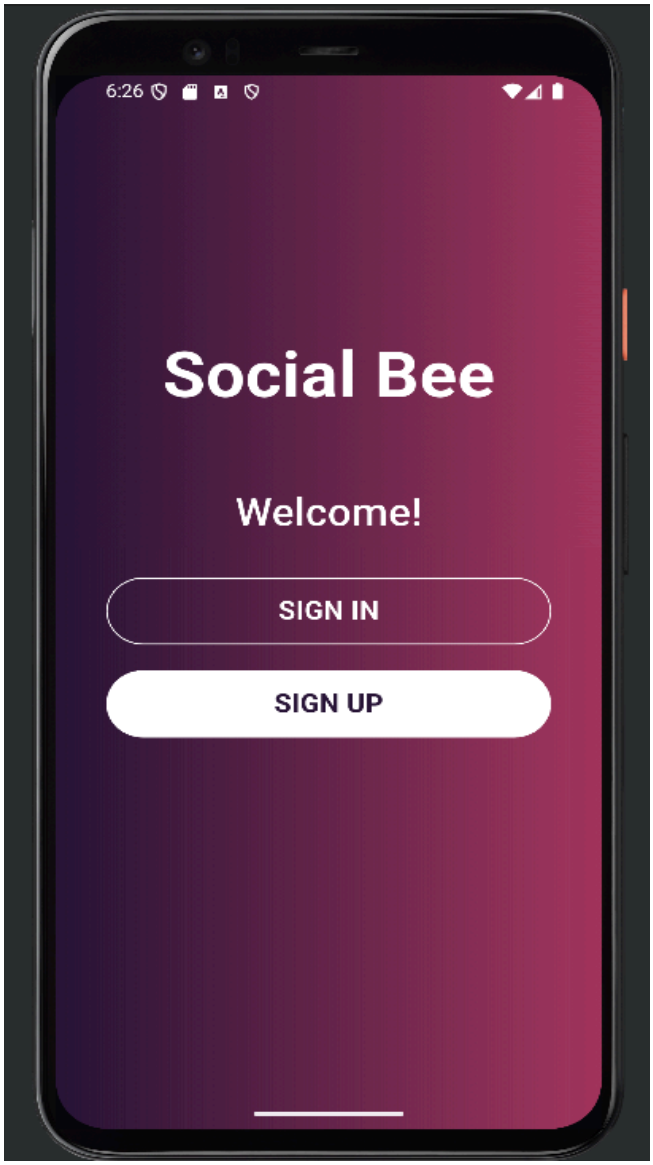
```
@override
Widget build(BuildContext context) {
  return Scaffold(
    body: Container(
      height: double.infinity,
      width: double.infinity,
      decoration: const BoxDecoration(
          gradient: LinearGradient(
              colors: [
                Color(0xffB81736),
                Color(0xff281537),
              ]
          )
      ),
      child: Column(
          children: [
            const Padding(
              padding: EdgeInsets.only(top: 200.0),
              child: Text('SocialBee',style: TextStyle(
                fontSize: 45,
                color: Colors.white
              ),),
            ),
            const SizedBox(
              height: 100,
            ),
            const Text('Welcome',style: TextStyle(
                fontSize: 30,
                color: Colors.white
            ),),
            const SizedBox(height: 30,),
            GestureDetector(
              onTap: (){
                Navigator.push(context,
                    MaterialPageRoute(builder: (context) => const loginScreen()));
              },
              child: Container(
                height: 53,
                width: 320,
                decoration: BoxDecoration(
```

```
          borderRadius: BorderRadius.circular(30),
          border: Border.all(color: Colors.white),
        ),
        child: const Center(child: Text('SIGN IN',style: TextStyle(
            fontSize: 20,
            fontWeight: FontWeight.bold,
            color: Colors.white
        ),),),
      ),
    ),
    const SizedBox(height: 30,),
    GestureDetector(
      onTap: (){
        Navigator.push(context,
            MaterialPageRoute(builder: (context) => const RegScreen()));
      },
      child: Container(
        height: 53,
        width: 320,
        decoration: BoxDecoration(
          color: Colors.white,
          borderRadius: BorderRadius.circular(30),
          border: Border.all(color: Colors.white),
        ),
        child: const Center(child: Text('SIGN UP',style: TextStyle(
            fontSize: 20,
            fontWeight: FontWeight.bold,
            color: Colors.black
        ),),),
      ),
    ),
    const Spacer(),
    const Text('Login with Social Media',style: TextStyle(
        fontSize: 17,
        color: Colors.white
    ),),//
    const SizedBox(height: 12,),
    const Image(image: AssetImage('assets/social.png'))
  ]
),
```

```
      ),

    );
  }
}
```

Output :



Conclusion :

Flutter allows developers to create interactive UIs using Stateless and Stateful widgets. Stateless widgets are for static content, while Stateful widgets handle dynamic changes. Widgets like MaterialApp, Scaffold, and Text help build responsive and appealing interfaces.