## Experiment No :- 2

**AIM:- To design Flutter UI by including common widgets.**

**THEORY :-**
Designing Flutter UI involves utilizing a variety of widgets provided by the Flutter framework to create visually interactive user interfaces.

What are Widgets?
Widgets are the basic building blocks used to construct user interfaces (UI) in Flutter applications. They represent various visual elements, layout components, and structural elements that compose the UI of the application.

Widgets in Flutter can be categorized into two main types:

1. **Stateless Widgets:**
   - Stateless widgets are immutable, meaning their properties cannot change once they are initialized.
   - They are used to represent UI elements whose content or appearance doesn't change over time.
   - Examples include Text, Icon, Container, etc.

2. **Stateful Widgets:**
   - Stateful widgets are mutable and maintain state that might change during the lifetime of the widget.
   - They are used for UI elements that need to update their content or appearance in response to user interactions or changes in application state.
   - Examples include buttons, forms, lists, etc.

Examples of common widgets used in Flutter UI design:

**a. Container:**
- Purpose: The Container widget is a versatile layout widget that can contain other widgets and define properties like padding, margin, and decoration.

**b. Text:**
- Purpose: The Text widget is used to display text with customizable styles such as font size, color, alignment, etc.

**c. Row and Column:**
- Purpose: Row and Column widgets are used to arrange child widgets horizontally and vertically, respectively.

**d. Button:**
- Purpose: Flutter provides various button widgets such as ElevatedButton, TextButton, and OutlinedButton for user interaction.

**e. Image:**
- Purpose: The Image widget is used to display images from various sources like assets, network URLs, etc.

**f. ListView:**
- Purpose: ListView is used to display a scrollable list of widgets.

**CODE & OUTPUT :-**

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

void main() {
 runApp(MyApp());
}

class MyApp extends StatelessWidget {
 @override
 Widget build(BuildContext context) {
   return MaterialApp(
     home: Scaffold(
       appBar: AppBar(
         title: const Text('Experiment No 02'),
         backgroundColor: Colors.deepPurple, // Changed app bar color
       ),
       body: Center(
         child: Column(
           mainAxisAlignment: MainAxisAlignment.center,
           children: <Widget>[
             const Text(
```

```
              'Welcome, Friend!',
              style: TextStyle(fontSize: 28, fontWeight: FontWeight.bold,
color: Colors.deepPurple), // Changed text style and color
            ),
            Container(
              margin: const EdgeInsets.symmetric(vertical: 20, horizontal:
40), // Adjusted container margins
              padding: const EdgeInsets.all(20), // Increased padding
              decoration: BoxDecoration(
                color: Colors.amberAccent, // Changed container color
                borderRadius: BorderRadius.circular(15), // Added border
radius
              ),
              child: const Text('Please type your message here', style:
TextStyle(fontSize: 18),), // Adjusted container text
            ),
            const Padding(
              padding: EdgeInsets.all(8.0),
              child: TextField(
                decoration: InputDecoration(
                  border: OutlineInputBorder(),
                  labelText: 'Your Message', // Changed label text
                  labelStyle: TextStyle(fontSize: 16, color:
Colors.deepPurpleAccent), // Adjusted label style
                ),
              ),
            ),
            const SizedBox(height: 20), // Adjusted SizedBox height
            ElevatedButton(
              onPressed: () {},
              style: ButtonStyle(
                backgroundColor:
MaterialStateProperty.all<Color>(Colors.deepPurple), // Changed button color
              ),
              child: const Text('Send', style: TextStyle(fontSize: 18),), //
Adjusted button text
            ),
          ],
        ),
      ),
    ),
  );
 }
}
```
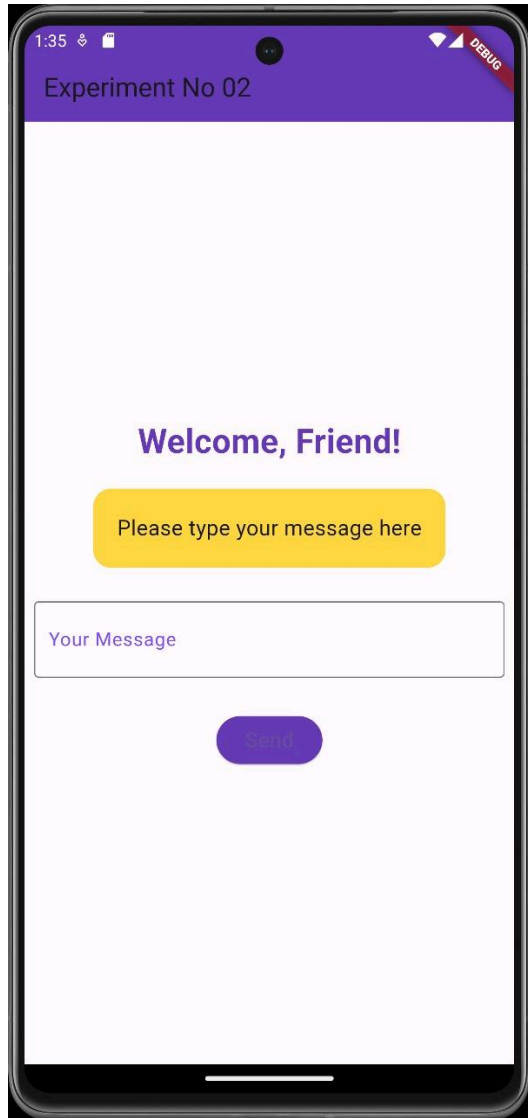
 Conclusion: In this experiment, we learned how to create a basic Flutter application with a structured UI layout using various Flutter widgets.