Name: Himanshu Menghani EXPT:02 Roll No.37

EXPERIMENT 2

Aim : To design Flutter UI by including common widgets.
To include icons, images, fonts in Flutter app

Theory:

- Flutter is Google's UI toolkit for crafting beautiful, natively compiled iOS and Android apps from a single code base. To build any application we start with widgets – The building block of flutter applications.
- Widgets describe what their view should look like given their current configuration and state. It includes a text widget, row widget, column widget, container widget, and many more.
- Widgets: Each element on a screen of the Flutter app is a widget. The view of the screen completely depends upon the choice and sequence of the widgets used to build the apps. And the structure of the code of an app is a tree of widgets.

Types of Widgets:

1. **StatelessWidget:**
- Represents widgets that are immutable and don't change over time.
- They don't store or manage any mutable state.

2. **StatefulWidget:**
- Represents widgets that can change dynamically during the lifetime of the application.
- They have mutable state, and changes in state trigger a rebuild of the widget tree.

3. **Container:**
- A box model that can contain other widgets and provides features like padding, margin, and
decoration.
- Often used to group and style other widgets.

4. **Row and Column:**
- Used to arrange child widgets horizontally (Row) or vertically (Column).
- Flexibility in distributing space among child widgets.

5. **Stack:**
- Allows widgets to be overlaid on top of each other.
- Widgets are positioned relative to the edges or the center of the stack.

6. **ListView:**
- A scrollable list of widgets.
- Can display a large number of children, either in a vertical or horizontal direction.

7. **Text:**
- Displays a styled text string.
- Supports rich formatting and styling options.

8. **Image:**
- Displays images from various sources, such as assets, the network, or memory.
- Supports caching and different fit options.

9. **AppBar:**
- A material design app bar that typically contains the app's title and various actions.
- Positioned at the top of the screen.

10. **Scaffold:**
- Represents the basic material design visual structure of a Flutter app.
- Provides a framework for implementing the basic layout structure.

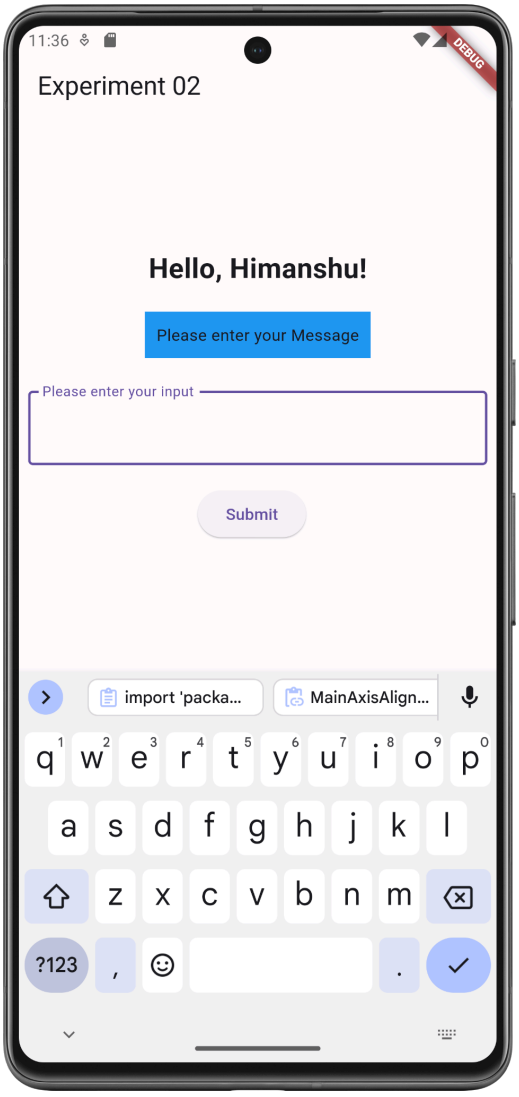
Code:

```
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 02'),
        ),
        body: Center(
          child: Column(
            mainAxisAlignment: MainAxisAlignment.center,
            children: <Widget>[
              const Text(
                'Hello, Himanshu!',
                style: TextStyle(fontSize: 24, fontWeight: FontWeight.bold),
              ),
              Container(
                margin: const EdgeInsets.all(20),
                padding: const EdgeInsets.all(10),
                color: Colors.blue, // Changed color to blue
                child: const Text('Please enter your Message'),
              ),
              const Padding(
                padding: EdgeInsets.all(8.0),
                child: TextField(
                  decoration: InputDecoration(
                    border: OutlineInputBorder(),
                    labelText: 'Please enter your input', // Changed label text
                    labelStyle: TextStyle(fontSize: 16), // Increased font size
                  ),
                ),
              ),
              const SizedBox(height: 10), // Added SizedBox
              Row(
                mainAxisAlignment: MainAxisAlignment.center,
```

```
            children: <Widget>[
              ElevatedButton(
                onPressed: () {},
                child: const Text('Submit'),
              ),
              const SizedBox(width: 10),
            ],
          ),
        ],
      ),
    ),
  ),
 );
 }
}
```



Name: Himanshu Menghani EXPT:02 Roll No.37

Conclusion : Hence we have understood and studied about the basic widgets in flutter and made use of image, icons and fonts in flutter. With the help of this we have designed a simple login page.