

MPL Experiment - 3

* Aim: To explore and implement different Flutter widgets, including Text, Button, and Image widgets, to understand their properties and behaviours in a Flutter application.

* Theory: Flutter widgets are the fundamental building blocks of the UI. They are categorized into:

1. Visible Widgets: Displays text with customizable properties like ~~alignme~~ alignment, font style, and color.

- Text widget: Displays text with customizable properties like alignment, font style, and color.

- Button widget: Performs an action when clicked. Common types include FlatButton, ElevatedButton, and TextButton.

- Image widget: Displays images from assets, ~~an~~ network, memory, or files.

These widgets provide user interface elements such as text, buttons, and images that are visible.

2. Invisible widgets: These include layout and control widgets like Container, Column, and Row, which structure the UI but are not directly visible.

* Conclusion: In this experiment, we successfully explored and implemented key Flutter widgets.

Text, Button, and Image. We understood how to customize the Text widget using alignment and style properties. We implemented different types of buttons to handle user ~~interacti~~ interactions. Additionally, we displayed an image from the assets folder using the Image.asset widget.

We also created a custom-styled button using a Container with specific padding, border styles, and background color. This demonstrated how invisible widgets can be used to control layout and styling.

Through this experiment, we gained practical experience in designing UI elements in Flutter, laying a strong foundation for building interactive applications.

1. Text Widget Example

Code:

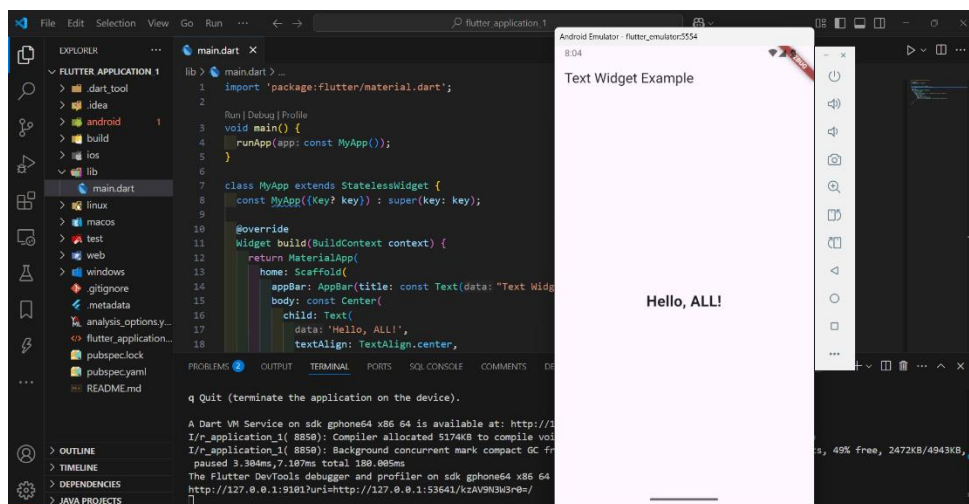
```
import 'package:flutter/material.dart';

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

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

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: Scaffold(
        appBar: AppBar(title: const Text("Text Widget Example")),
        body: const Center(
          child: Text(
            'Hello, ALL!',
            textAlign: TextAlign.center,
            style: TextStyle(fontWeight: FontWeight.bold, fontSize: 24),
          ),
        ),
      ),
    );
  }
}
```

Output:



2. Button Widgets Example

Code:

```

import 'package:flutter/material.dart';

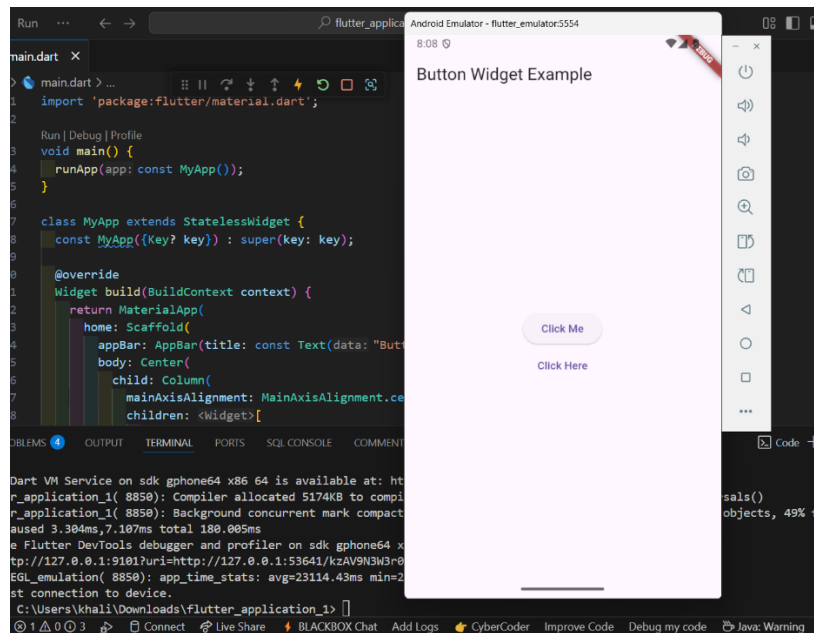
void main() {
  runApp(const MyApp());
}

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

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: Scaffold(
        appBar: AppBar(title: const Text("Button Widget Example")),
        body: Center(
          child: Column(
            mainAxisAlignment: MainAxisAlignment.center,
            children: [
              ElevatedButton(
                onPressed: () {
                  print("Raised Button Clicked");
                },
                child: const Text("Click Me"),
              ),
              TextButton(
                onPressed: () {
                  print("Flat Button Clicked");
                },
                child: const Text("Click Here"),
              ),
            ],
          ),
        ),
      );
  }
}

```

Output:



3. Image Widget Example

Code:

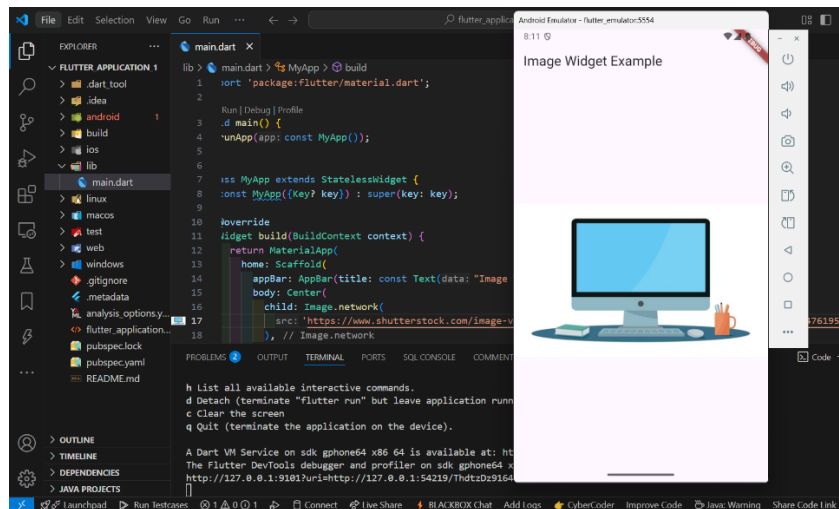
```
import 'package:flutter/material.dart';
```

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

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

```
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: Scaffold(
        appBar: AppBar(title: const Text("Image Widget Example")),
        body: Center(
          child: Image.network(
            'https://via.placeholder.com/150', // Replace with any image URL
          ),
        ),
      ),
    );
  }
}
```

Output:



4. Single Child Widget Example

Code:

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

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

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

```
  @override
```

```
  Widget build(BuildContext context) {
    return MaterialApp(
      home: Scaffold(
        appBar: AppBar(title: const Text("Single Child Widget Example")),
        body: Center(child: MyButton()),
      ),
    );
  }
}
```

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

```
  @override
```

```
  Widget build(BuildContext context) {
    return Container(
      decoration: const BoxDecoration(
        border: Border(
          top: BorderSide(width: 1.0, color: Color(0xFFFFFFFF)),
```

```

left: BorderSide(width: 1.0, color: Color(0xFFFFFFFF)),
right: BorderSide(width: 1.0, color: Color(0xFFFF000000)),
bottom: BorderSide(width: 1.0, color: Color(0xFFFF000000)),
),
),
child: Container(
padding: const EdgeInsets.symmetric(horizontal: 20.0, vertical: 2.0),
decoration: const BoxDecoration(
border: Border(
top: BorderSide(width: 1.0, color: Color(0xFFFFDFDFDF)),
left: BorderSide(width: 1.0, color: Color(0xFFFFDFDFDF)),
right: BorderSide(width: 1.0, color: Color(0xFFFF7F7F7F)),
bottom: BorderSide(width: 1.0, color: Color(0xFFFF7F7F7F)),
),
color: Colors.grey,
),
child: const Text(
'OK',
textAlign: TextAlign.center,
style: TextStyle(color: Colors.black),
),
),
),
);
}
}

```

Output:

