Practical No-1

Aim-Display “Hello World”

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

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

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

  @override
  Widget build(BuildContext context) {
    return const MaterialApp(
      home: Center(child: Text('Hello World')),
    );
  }
}
```

OutPut-

PRACTICAL NO-2

AIM:TO MAKE A CALCULATOR.

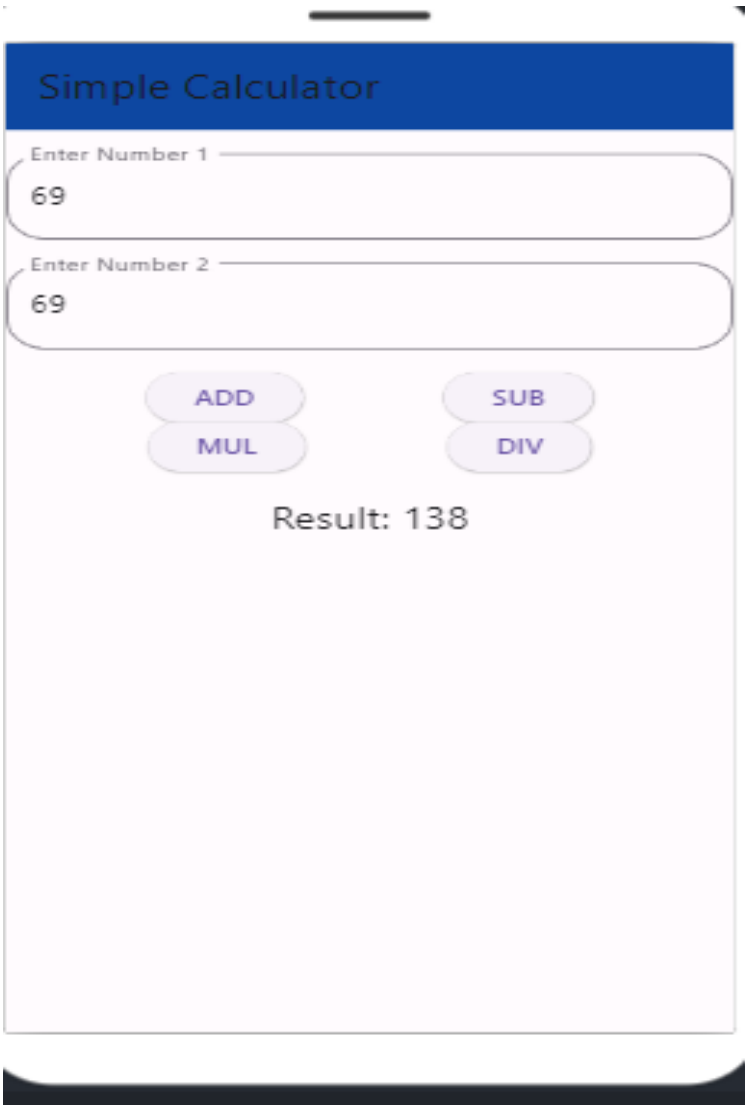
```dart
import 'package:flutter/material.dart';

void main() {
  runApp(MaterialApp(
    debugShowCheckedModeBanner: false,
    home: MyApp(),
  ));
}

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

  @override
  State<MyApp> createState() => _MyAppState();
}

class _MyAppState extends State<MyApp> {
  TextEditingController controller1 = TextEditingController();
  TextEditingController controller2 = TextEditingController();
  int num1 = 0;
  int num2 = 0;
  int result = 0;

  void add() {
    setState(() {
      num1 = int.parse(controller1.text);
      num2 = int.parse(controller2.text);
      result = num1 + num2;
    });
  }

  void sub() {
    setState(() {
      num1 = int.parse(controller1.text);
      num2 = int.parse(controller2.text);
```

```
    result = num1 - num2;
  });
}

void mul() {
  setState(() {
    num1 = int.parse(controller1.text);
    num2 = int.parse(controller2.text);
    result = num1 * num2;
  });
}

void div() {
  setState(() {
    num1 = int.parse(controller1.text);
    num2 = int.parse(controller2.text);
    if (num2 != 0) {
      result = num1 ~/ num2;
    } else {
      result = 0; // or handle division by zero differently
    }
  });
}

@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      title: const Text('Simple Calculator'),
      backgroundColor: Colors.blue.shade900,
    ),
    body: Column(
      children: [
        SizedBox(height: 15),
        TextField(
          controller: controller1,
          keyboardType: TextInputType.number,
          decoration: InputDecoration(
            labelText: "Enter Number 1",
```

```
            border: OutlineInputBorder(
              borderRadius: BorderRadius.circular(20),
            ),
          ),
        ),
        SizedBox(height: 15),
        TextField(
          controller: controller2,
          keyboardType: TextInputType.number,
          decoration: InputDecoration(
            labelText: "Enter Number 2",
            border: OutlineInputBorder(
              borderRadius: BorderRadius.circular(20),
            ),
          ),
        ),
        SizedBox(height: 15),
        Row(
          mainAxisAlignment: MainAxisAlignment.spaceEvenly,
          children: [
            ElevatedButton(onPressed: add, child: const Text('ADD')),
            ElevatedButton(onPressed: sub, child: const Text('SUB')),
          ],
        ),
        Row(
          mainAxisAlignment: MainAxisAlignment.spaceEvenly,
          children: [
            ElevatedButton(onPressed: mul, child: const Text('MUL')),
            ElevatedButton(onPressed: div, child: const Text('DIV')),
          ],
        ),
        SizedBox(height: 15),
        Text(
          'Result: $result',
          style: TextStyle(fontSize: 20),
        ),
      ],
    ),
  );
```

```
  }
}
```

OUTPUT:


Simple Calculator
Enter Number 1
69
Enter Number 2
69
ADD
SUB
MUL
DIV
Result: 138

Explanation:

1 The first line imports the necessary flutter library.

2. Main Function: The main function is a entering point of the application, it run (MaterialApp) Widget which is the top level widget for a MaterialApp.

3.MyApp: Widget: MyApp is a stateful widget that contain the calculator UI and Logic.

4. TextEditingController: To TextEditingController object is created to handle user input in the text field.

5. Variable: Three Integers are declared to store the number and result : num1 & num2 for the input number result for the calculator result.

6.Function: 4 functions Perform Arithmetic Operation: Add-adds num1&num2 , Sub-subtract num1&num , Mul-Multiply num1&num2 , div-divide num1&num2.

Each Function update the result variable and call setstate to rebuild the widget tree

7.Build function: The Build Method return the widget tree :

1st Scaffold – Provide a basic material design layout

8.AppBar: AppBar display the title “Simple Calculator”

9.Body: Column-arrange vertical, Text Display the result, Text field –Input Field for Number

Rows-Arrange Horizontally, Elevated Button- Perform Arithmetic Operation

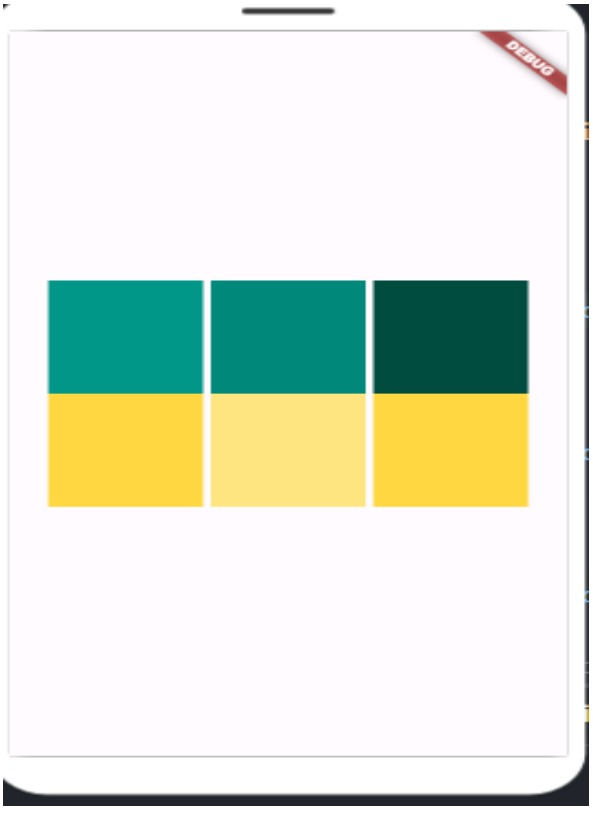
Practical:3

Aim- Designing the Mobile App to implement different Layouts.

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

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

class Demoapp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
        title: 'My Application',
        debugShowCheckedModeBanner: true,
        home: Scaffold(
            body: Padding(
                padding: const EdgeInsets.all(20.0),
                child: Column(
                    mainAxisAlignment: MainAxisAlignment.center,
                    children: [
                      Row(
                        mainAxisAlignment:
MainAxisAlignment.spaceEvenly,
                        children: [
                          Container(
                            height: 100,
                            width: 100,
                            color: Colors.teal,
                          ),
                          Container(
                              height: 100, width: 100, color:
Colors.teal[600]),
                          Container(
                              height: 100, width: 100, color:
Colors.teal[900]),
                        ],
```

```
                    ),
                    Row(
                        mainAxisAlignment:
MainAxisAlignment.spaceEvenly,
                        children: [
                          Container(
                              height: 100,
                              width: 100,
                              color: Colors.amberAccent),
                          Container(
                              height: 100,
                              width: 100,
                              color: Colors.amberAccent[100]),
                          Container(
                              height: 100,
                              width: 100,
                              color: Colors.amberAccent[200]),
                        ])
                ])));
  }
}
```

OUTPUT:

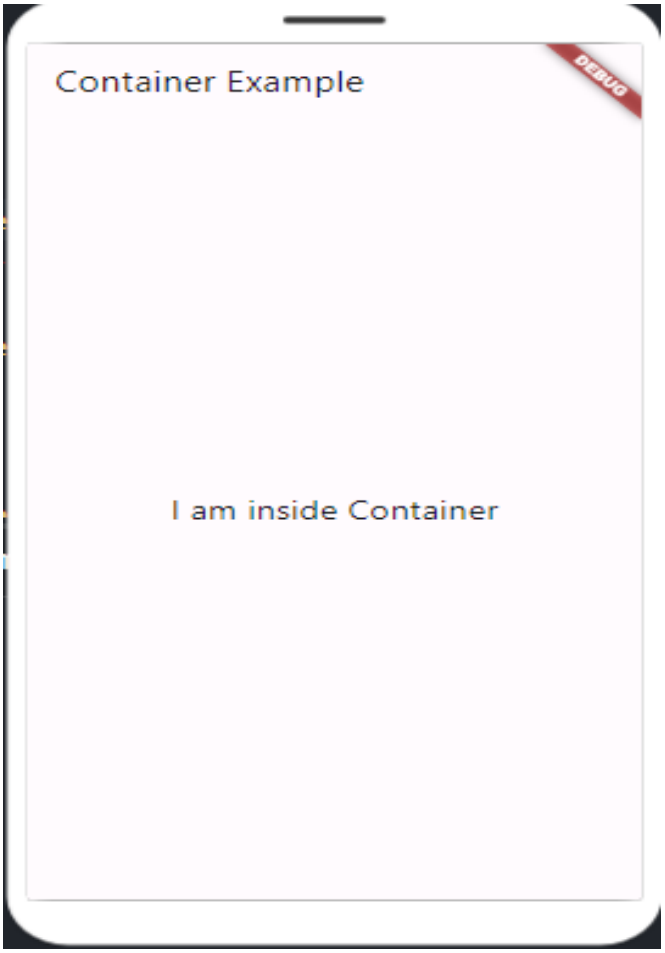


PRACTICAL-3.2

AIM:

```dart
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("Container Example"),
        ),
        body: Container(
          child: const Center(
            child: Text(
              "I am inside Container",
              style: TextStyle(fontSize: 20),
            ),
          ),
        ),
      ),
    );
  }
}
```

OUTPUT-



PRACTICAL:4

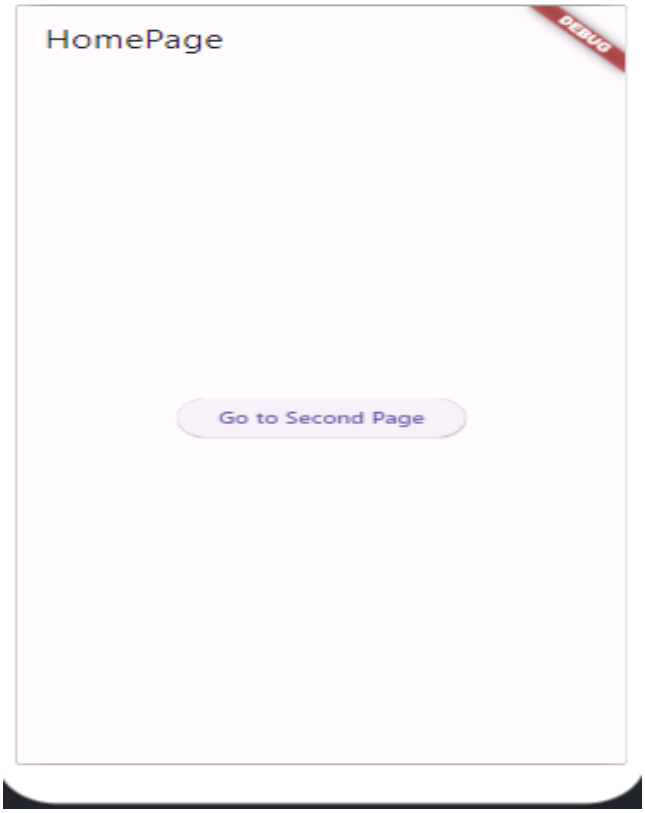
AIM: Designing the mobile app to implement the routing

CODE:

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

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

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Routing Demo',
      initialRoute: '/',
      routes: {
        '/': (context) => HomePage(),
        '/second': (context) => SecondPage(),
      },
    );
  }
}

class HomePage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('HomePage'),
      ),
      body: Center(
          child: ElevatedButton(
        child: Text('Go to Second Page'),
        onPressed: () {
          Navigator.pushNamed(context, '/second');
        },
      )),
    );
  }
```

```
}

class SecondPage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Second Page'),
      ),
      body: Center(
          child: ElevatedButton(
        child: Text('Go to Home Page'),
        onPressed: () {
          Navigator.pop(context);
        },
      )),
    );
  }
}
```

OUTPUT:


HomePage
DEBUG
Go to Second Page


Second Page
DEBUG
Go to Home Page

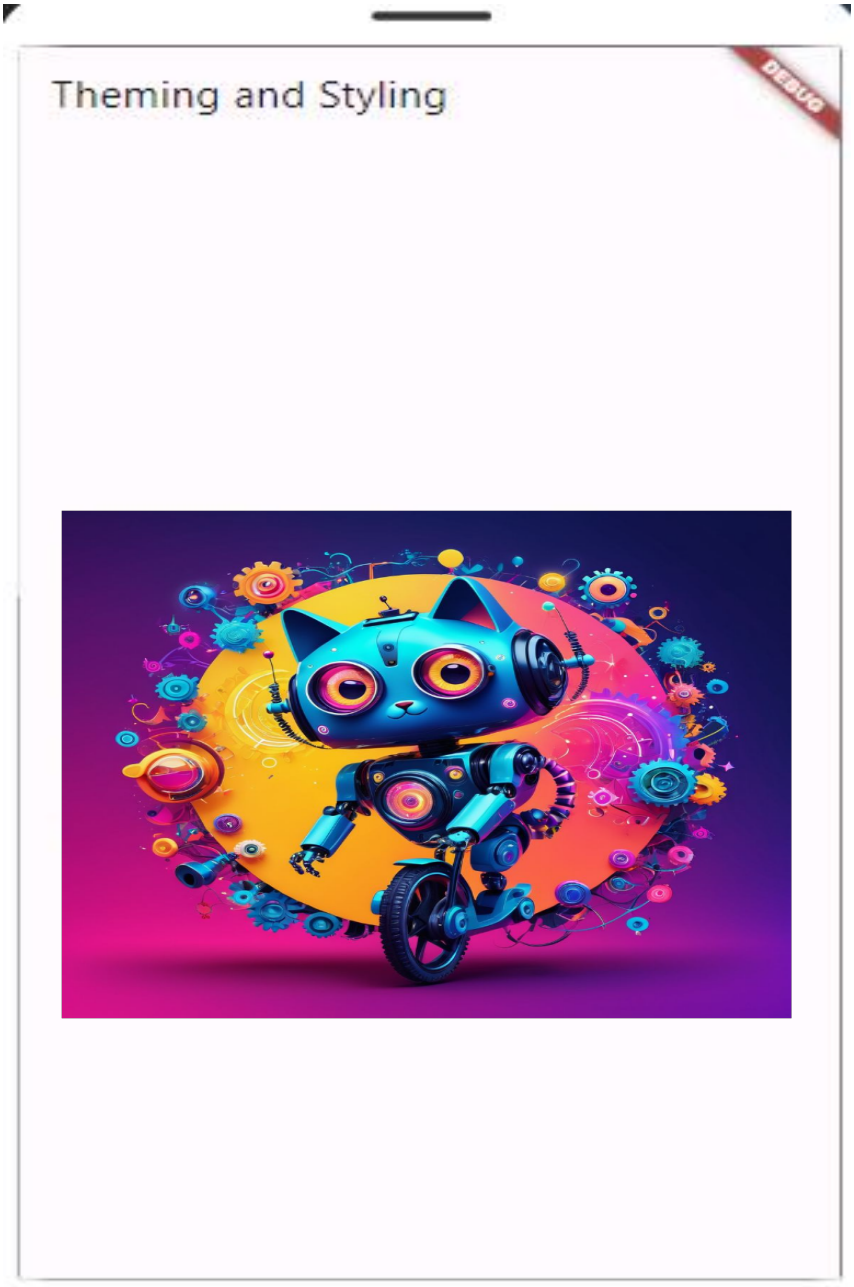
Practical No-5

Aim- Designing the Mobile App to Implement the Theming and Styling

Code-

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

void main() {
  runApp(MaterialApp(
    home: MyApp(),
  ));
}

class MyApp extends StatelessWidget {
  const MyApp({Key? key}) : super(key: key);
  @override
  Widget build(BuildContext context) {
    return Scaffold(
        appBar: AppBar(
          title: Text('Theming and Styling'),
        ),
        body: Center(
          child: Column(
            mainAxisAlignment: MainAxisAlignment.spaceEvenly,
            children: [
              Image.network(
                'https://i.imgflip.com/613g3h.jpg',
                height: 400,
                width: 350,
              )
            ],
          ),
        ));
  }
}
```

OUTPUT-



CODE-

```
import 'package:flutter/material.dart';
void main() {
  runApp(MaterialApp(home: MyApp()));
}
class MyApp extends StatefulWidget {
  const MyApp({Key? key}) : super(key: key);
  @override
  State<MyApp> createState() => _MyAppState();
}
class _MyAppState extends State<MyApp> {
  int numberOfTimesTapped = 0;
  @override
 Widget build(BuildContext context) {
    return Scaffold(
      body: Center(
        child: Column(
          mainAxisAlignment: MainAxisAlignment.spaceEvenly,
          children: [
            Text(
              'Tapped ' + numberOfTimesTapped.toString() + ' times',
              style: TextStyle(fontSize: 30),
            ),
            GestureDetector(
              onTap: () {
                setState(() {
                  numberOfTimesTapped++;
                });
              },
              child: Container(
```

```
            padding: EdgeInsets.all(20),
            color: Colors.green[200],
            child: Text(
              'TAP HERE',
              style: TextStyle(fontSize: 30),
            ),
          ),
        ),
      ],
    ),
  ),
 );
 }
}
```

OUTPUT: