

```

void main()
{
    print("Hello Dart");

    int num1 =5;
    int num2 = 4;
    int sum = num1 + num2;
    print("The sum of $num1 and $num2 is $sum");

    String str1 = "Hello, ";
    String str2 = "World!";
    String result = str1+str2;
    print(result);

    String str='Coding is';
    String Str1 = 'Fun';
    bool val = (str==Str1);
    print(val);

    List<int>numbers = [1,2,3,4,5];
    print("Numbers:$numbers");
    print("First element: ${numbers[0]}");
    print("Second element: ${numbers[1]}");
    numbers.add(6);
    numbers.remove(3);
    print("After removing 3: $numbers");
    int length = numbers.length;
    print("Length of the list: $length");
}

```

```

void main()
{
    Map<String, String> capitals = {
        'USA': 'Washington, D.C.',
        'France':'Paris',
        'Japan':'Tokyo',
    };
    print("Country-Capital Map: $capitals");
    print("Capital of USA: ${capitals['USA']}");
    capitals['Germany']='Berlin';
    print("After adding Germany: $capitals");
    print("Country-Capital Paris:");
    for (var country in capitals.keys){
        var capital =capitals[country];
        print("The capital of $country is $capital");
    }
}

```

```
capitals.remove('France');  
print("After removing France: $capitals");
```

```
bool hasJapan = capitals.containsKey('Japan');  
print("Does the map have Japan as a key? $hasJapan");  
}
```

```
void main()  
{  
  int num1 = 4;  
  int num2 = 5;  
  String op = '+';  
  if (op == '+');  
    int sum = num1+num2;  
    print("$num1 + $num2 = $sum");  
  
}
```

```
void main()  
{  
  int i;  
  print("Rollno.s");  
  for(i=1;i<111;i++)  
  {  
    if(i%2==0)  
      continue;  
    print("$i");  
  }  
}
```

```
void main()  
{  
  int i;  
  print("Rollno.s");  
  for(i=1;i<111;i++)  
  {  
    if(i==50)  
      break;  
    print("$i");  
  }  
}
```

```

void main()
{

for(int i=1;i<=5;i++)
{
    if(i==3){
        continue;
    }
    print("Iteration $i");
}
}

```

```

void calculateInterest(double principal,double rate,double time){
double interest = principal *rate*time/100;
print("Simple Interest is $interest");
}

```

```

void main(){
double principal = 5000;
double time=3;
double rate=3;
calculateInterest(principal,rate,time);
}

```

```

class Rectangle{
double? length;
double? breadth;

double area(){
return length! * breadth!;
}
}

```

```

void main(){
Rectangle rectangle = Rectangle();
rectangle.length = 10;
rectangle.breadth = 5;
print("The area of the rectangle is ${rectangle}")
}

```

Assignment:

```
import 'dart:math';
```

```
String generateRandomPassword({int length = 12}) {  
  const String characters =  
'abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789!@#$%^&  
*()_-=+<>?';  
  Random random = Random();  
  
  String password = "";  
  for (int i = 0; i < length; i++) {  
    int index = random.nextInt(characters.length);  
    password += characters[index];  
  }  
  
  return password;  
}  
  
void main() {  
  String randomPassword = generateRandomPassword(length: 16);  
  print("Generated Password: $randomPassword");  
}
```

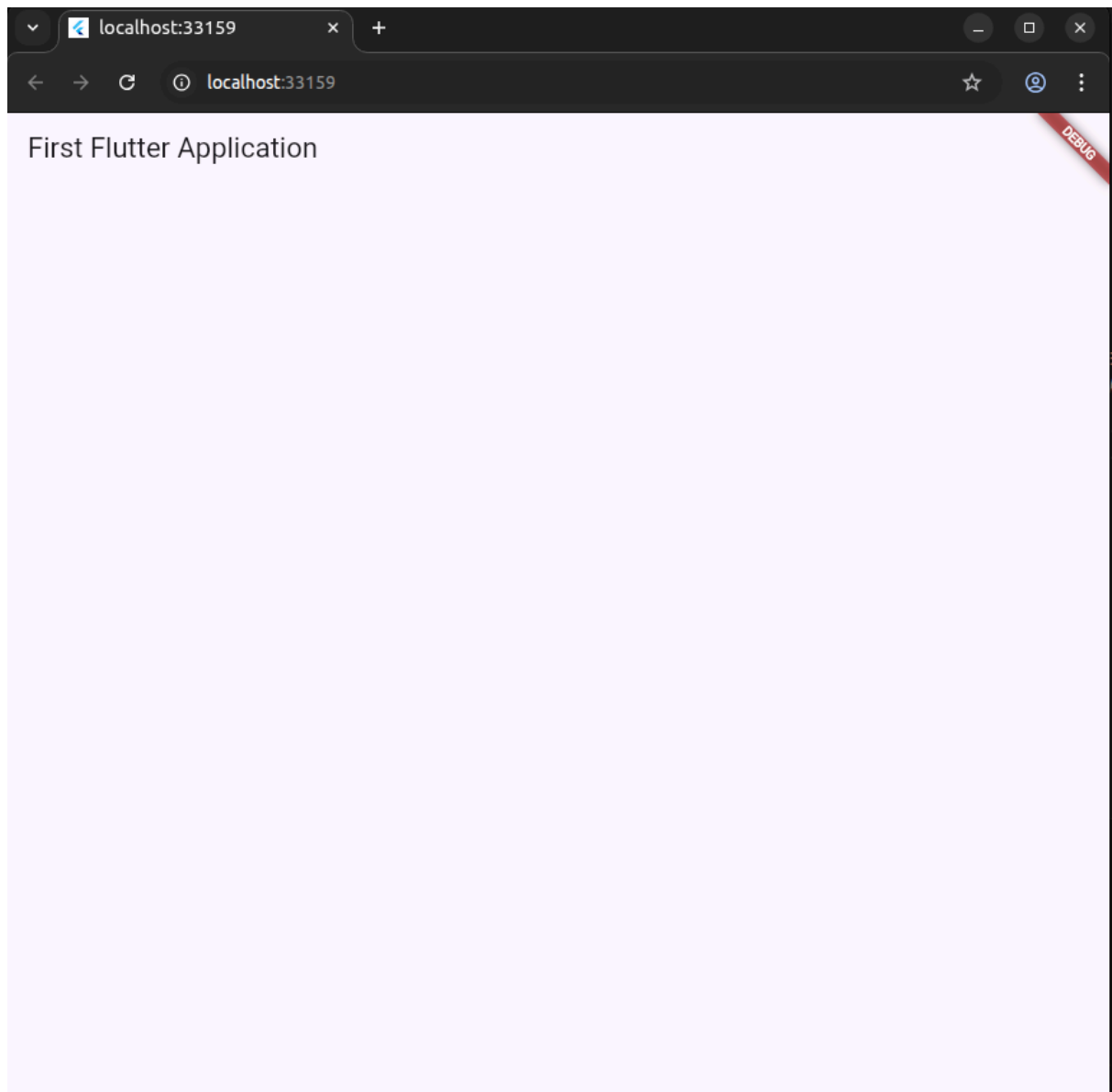
```
int sumEvenNumbers(List<int> numbers) {  
  return numbers.where((num) => num.isEven).reduce((a, b) => a + b);  
}  
  
void main() {  
  List<int> numbers = [1, 2, 3, 4, 5, 6, 7, 8];  
  print("Sum of even numbers: ${sumEvenNumbers(numbers)}");  
}
```

```
class Book {  
  String name;  
  String author;  
  double price;  
  
  // Constructor  
  Book(this.name, this.author, this.price);  
  
  // Method to display the book details  
  void display() {
```

```
    print('Book Name: $name');
    print('Author: $author');
    print('Price: \${price.toStringAsFixed(2)}');
  }
}

void main() {
  Book myBook = Book('The Dart Programming Language', 'John Doe', 29.99);
  myBook.display();
}
```

```
import 'package:flutter/material.dart';
void main()
{
  runApp(Myapplication());
}
class Myapplication extends StatelessWidget{
  @override
Widget build(BuildContext context)
{
  return MaterialApp(
    home: Scaffold(
      appBar: AppBar(
        title: const Text('First Flutter Application'),
      ), )) ;
}
}
```



```
import 'package:flutter/material.dart';
void main()
{
  runApp(Myapplication());
}
class Myapplication extends StatelessWidget{
  @override
  Widget build(BuildContext context)
  {
    return MaterialApp(
      home: Scaffold(
        appBar: AppBar(
          title: const Text('First Flutter Application'),
        ), ));
  }
}
```

```

},
body: Center{
child: Text{"This is the first app I have been building!!!"}
    style: TextStyle( color: Colors.black,fontSize:30.0,,),,,),,,);
}
}

```

[correct it]

```

import 'package:flutter/material.dart';

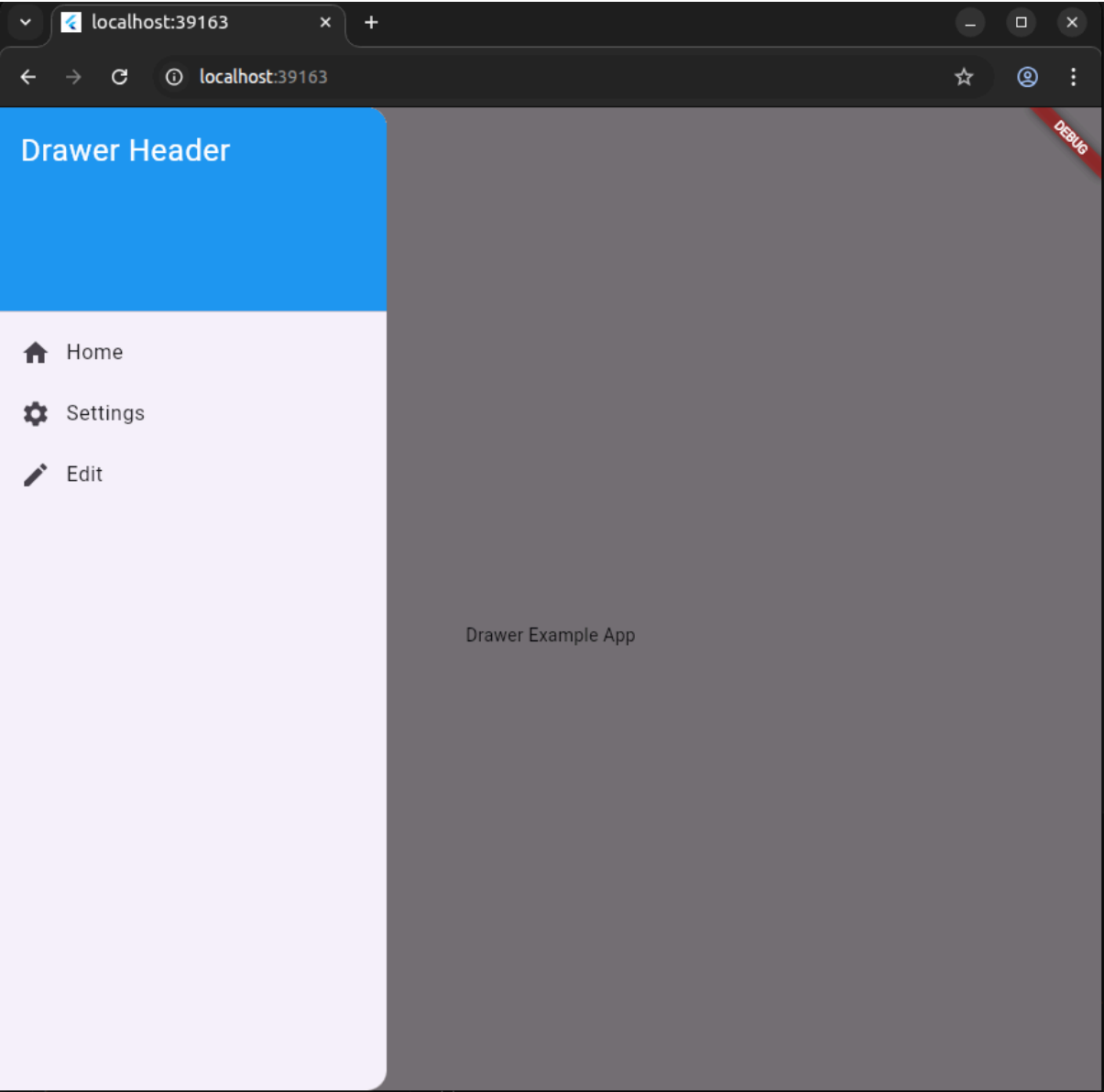
void main() => runApp(MyApp());

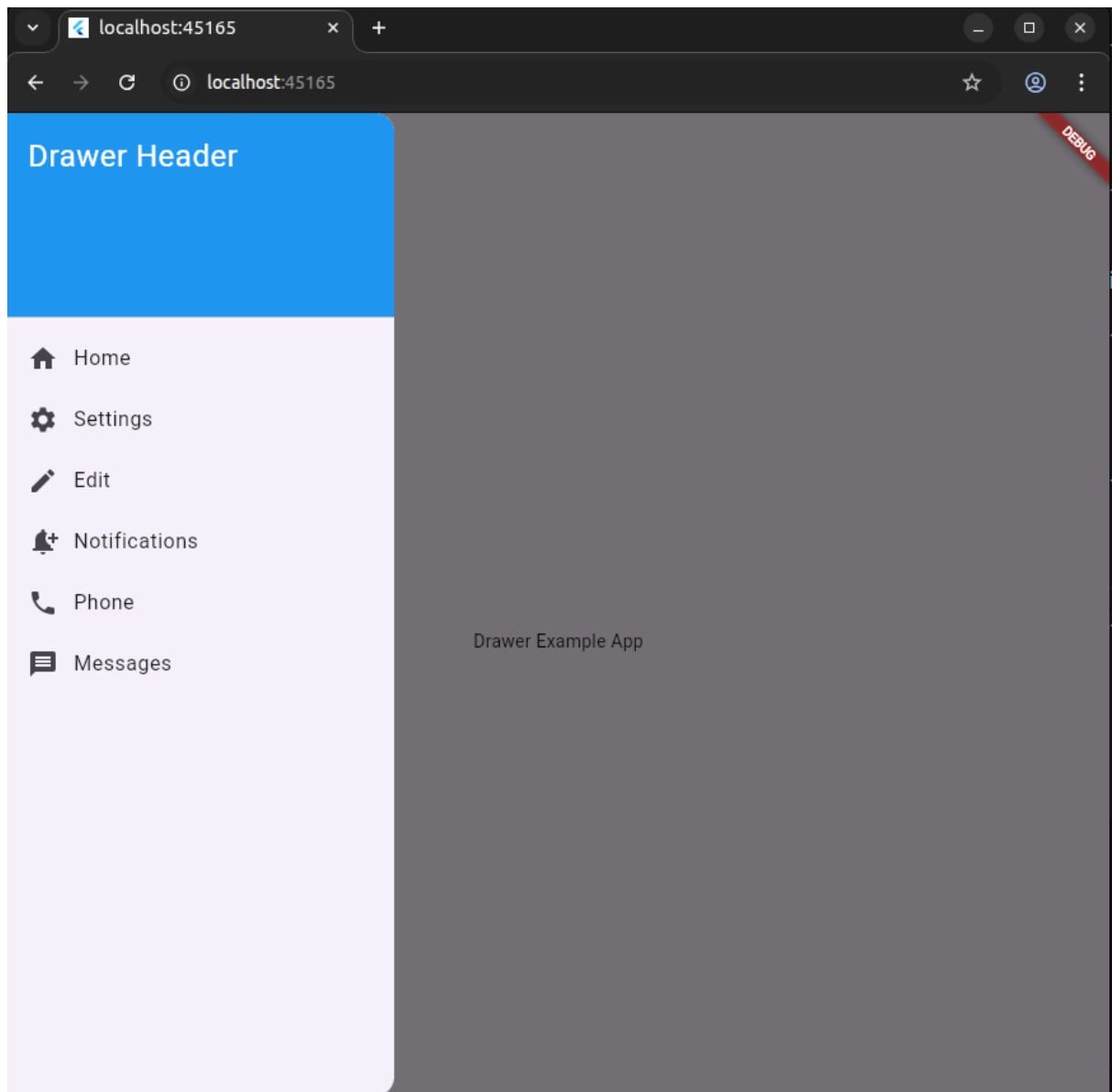
class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: Scaffold(
        appBar: AppBar(
          title: Text('Drawer Example'),
        ),
        drawer: Drawer(
          child: ListView(
            padding: EdgeInsets.zero,
            children: <Widget>[
              DrawerHeader(
                decoration: BoxDecoration(
                  color: Colors.blue,
                ),
                child: Text(
                  'Drawer Header',
                  style: TextStyle(
                    color: Colors.white,
                    fontSize: 24,
                  ),
                ),
              ),
              ListTile(
                leading: Icon(Icons.home),
                title: Text('Home'),
                onTap: () => Navigator.pop(context),

```

```
    ),  
    ListTile(  
      leading: Icon(Icons.settings),  
      title: Text('Settings'),  
      onTap: () => Navigator.pop(context),  
    ),  
    ListTile(  
      leading: Icon(Icons.edit),  
      title: Text('Edit'),  
      onTap: () => Navigator.pop(context),  
    ),  
  ],  
),  
,  
body: Center(  
  child: Text('Drawer Example App'),  
),  
),  
);  
}  
}
```







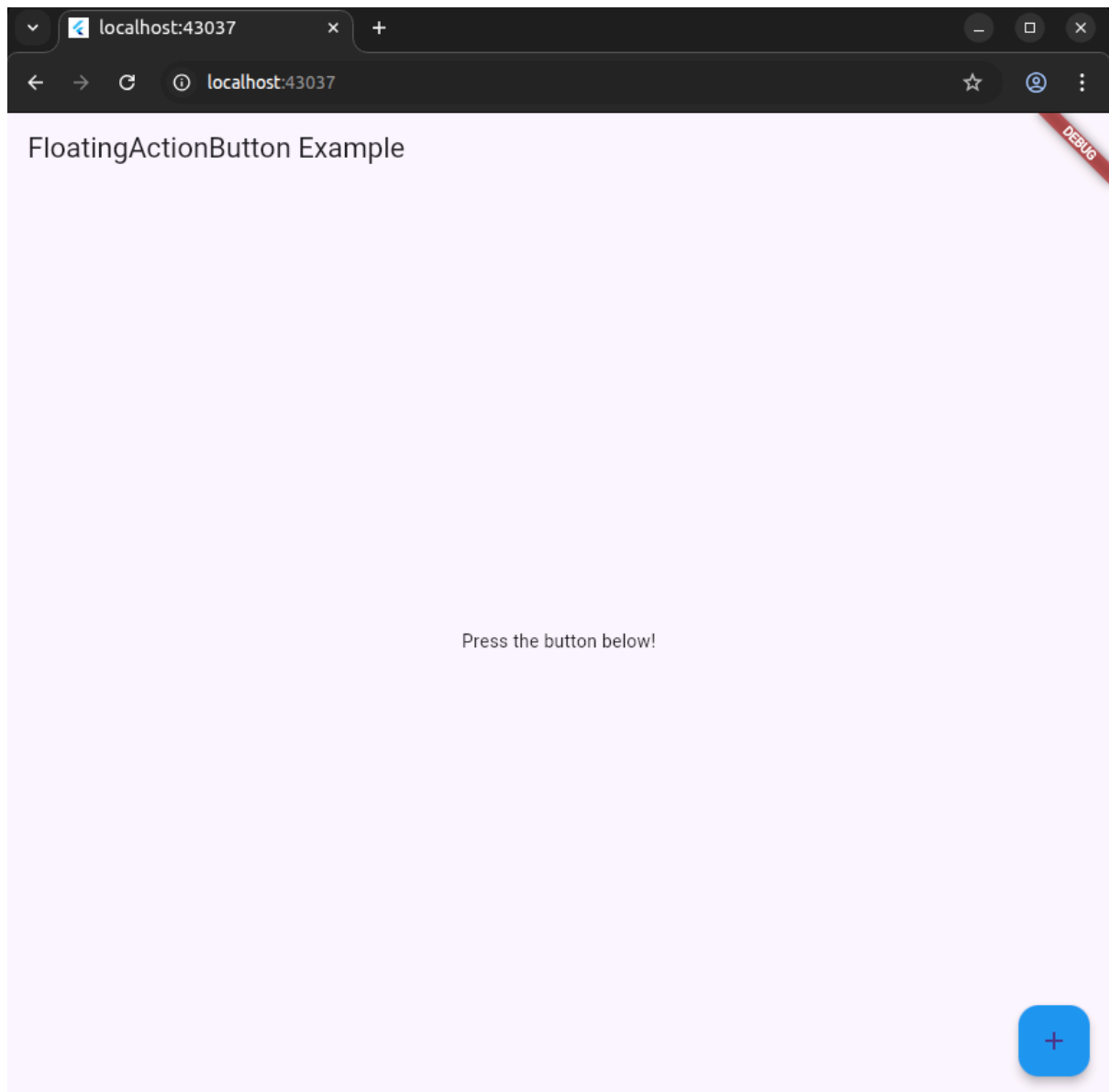
```
//floating action button

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: Text('FloatingActionButton Example'),  
) ,  
body: Center(  
  child: Text('Press the button below!'),  
) ,  
floatingActionButton: FloatingActionButton(  
  onPressed: () {  
    // Action to perform when the button is pressed  
    print('Button Pressed!');  
  },  
  child: Icon(Icons.add),  
  backgroundColor: Colors.blue,  
) ,  
) ,  
) ;  
}  
}
```



Terminal displays “Button Pressed” message

```
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: Text('Container Example'),
      ),
      body: Center(
        child: Container(
          padding: EdgeInsets.all(35),
margin: EdgeInsets.all(20),
alignment: Alignment.bottomRight,
transform: Matrix4.rotationZ(0.1),
          child: Text(
            "Hello! I am in the container widget",
            style: TextStyle(fontSize: 25),
          ),
        ),
      ),
    ),
  );
}
```

## Container Example

DEBUG

Hello! I am in the  
container widget

```
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: Text('Constraints Example'),
    ),
    body: Center(
      child: Container(
        constraints: BoxConstraints(
          minWidth: 100,
          maxWidth: 200,
          minHeight: 100,
          maxHeight: 200,
        ),
        color: Colors.blue,
        child: Center(
          child: Text(
            'Constrained Container',
            style: TextStyle(
              color: Colors.white,
              fontSize: 18,
            ),
          ),
        ),
      ),
    ),
  ),
);
}
}

```

## Constraints Example

DEBUG

Constrained Container

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

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

class MyApp extends StatelessWidget {
```



```

@override
Widget build(BuildContext context) {
  return MaterialApp(
    home: RowWidgetExample(),
  );
}

class RowWidgetExample extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Row Widget Example'),
      ),
      body: Center(
        child: Row(
          mainAxisAlignment: MainAxisAlignment.spaceEvenly,
          children: <Widget>[
            Container(
              width: 50,
              height: 50,
              color: Colors.red,
            ),
            Container(
              width: 50,
              height: 50,
              color: Colors.green,
            ),
            Container(
              width: 50,
              height: 50,
              color: Colors.blue,
            ),
          ],
        ),
      ),
    );
  }
}

```

## Row Widget Example

DEBUG



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

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

class MyApp extends StatelessWidget {
```

```

@override
Widget build(BuildContext context) {
  return MaterialApp(
    home: ChairmanProfile(),
    debugShowCheckedModeBanner: false,
  );
}

class ChairmanProfile extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Ramaiah Chairman Profile'),
      ),
      body: Padding(
        padding: const EdgeInsets.all(16.0),
        child: Column(
          mainAxisAlignment: MainAxisAlignment.center,
          children: [
            // Profile Image
            CircleAvatar(
              radius: 50,
              backgroundImage: AssetImage('assets/ms_ramaiah.jpg'), //
<-- Add image in assets
            ),
            SizedBox(height: 20),

            // Name
            Text(
              'Dr. M.S. Ramaiah',
              style: TextStyle(
                fontWeight: FontWeight.bold,
                fontSize: 20,
              ),
            ),

            // Subtitle
            Text(
              'Founder Chairman',
              style: TextStyle(
                fontSize: 16,

```

```
        color: Colors.grey[600],
      ),
    ),

    SizedBox(height: 20),

    // Description
    Text(
      'Mathikere Sampangi Ramaiah was born on 20 April 1922, in
Madhugiri to Sampangappa and Narasamma.',
      style: TextStyle(fontSize: 14),
      textAlign: TextAlign.center,
    ),
  ],
),
),
);
}
```

## Ramaiah Chairman Profile



**Dr. M.S. Ramaiah**

Founder Chairman

Mathikere Sampangi Ramaiah was born on 20 April 1922, in Madhugiri to Sampangappa and Narasamma.

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

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

```
class MyApp extends StatelessWidget {  
  @override
```

```
Widget build(BuildContext context) {  
  return MaterialApp(  
    home: TextButtonExample(),  
    debugShowCheckedModeBanner: false,  
  );  
}  
}  
  
class TextButtonExample extends StatelessWidget {  
  @override  
  Widget build(BuildContext context) {  
    return Scaffold(  
      appBar: AppBar(  
        title: Text('TextButton Example'),  
      ),  
      body: Center(  
        child: TextButton(  
          onPressed: () {  
            // Action when button is pressed (you can modify this to  
perform an action)  
            print("Button Clicked!");  
          },  
          child: Text('Click Me'),  
        ),  
      ),  
    );  
  }  
}
```

## TextButton Example

Click Me

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

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

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
```

```

    title: 'ElevatedButton Example',
    home: Scaffold(
      appBar: AppBar(
        title: Text('ElevatedButton Example'),
        foregroundColor: Colors.white,
        backgroundColor: const Color.fromARGB(255, 19, 82, 178), //
Dark Blue AppBar
      ),
      body: Center(
        child: ElevatedButton(
          onPressed: () {
            print("Button Clicked!");
          },
          style: ElevatedButton.styleFrom(
            backgroundColor: const Color.fromARGB(255, 23, 84, 175),
// Dark Blue Button
            foregroundColor: Colors.white, // White text
            padding: EdgeInsets.symmetric(horizontal: 24, vertical:
12),
          ),
          child: Text('Click Me'),
        ),
      ),
    );
}
}

```



## ElevatedButton Example

DEBUG

Click Me

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

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
```

```

        home: MyHomePage(),
    );
}

class MyHomePage extends StatelessWidget {
  void _showAlertDialog(BuildContext context) {
    showDialog(
      context: context,
      builder: (BuildContext context) {
        return AlertDialog(
          title: Text("Alert Dialog"),
          content: Text("This is a basic alert dialog."),
          actions: <Widget>[
            TextButton(
              child: Text("Close"),
              onPressed: () {
                Navigator.of(context).pop();
              },
            ),
          ],
        );
      },
    );
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text("Flutter Alert Dialog Example"),
      ),
      body: Center(
        child: ElevatedButton(
          onPressed: () {
            _showAlertDialog(context);
          },
          child: Text("Show Alert Dialog"),
        ),
      ),
    );
  }
}

```

## Flutter Alert Dialog Example

DEBUG

Show Alert Dialog

## Flutter Alert Dialog Example

DEBUG

### Alert Dialog

This is a basic alert dialog.

Close

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

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: MyHomePage(),
    );
  }
}

class MyHomePage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text("Flutter Icons Example"),
      ),
      body: Center(
        child: Column(
          mainAxisAlignment: MainAxisAlignment.center,
          children: <Widget>[
            Icon(
              Icons.star,
              size: 100.0,
              color: Colors.yellow,
            ),
            Text("Star Icon", style: TextStyle(fontSize: 20.0)),
            SizedBox(height: 20.0),
            Icon(
              Icons.favorite,
              size: 100.0,
              color: Colors.red,
            ),
            Text("Favorite Icon", style: TextStyle(fontSize: 20.0)),
            SizedBox(height: 20.0),
            Icon(
              Icons.local_florist,
              size: 100.0,
              color: Colors.green,
            ),
          ],
        ),
      ),
    );
  }
}
```

```
        Text("Florist Icon", style: TextStyle(fontSize: 20.0)),
      ],
    ),
  ),
);
}
```

## Flutter Icons Example

DEBUG



Star Icon



Favorite Icon



Florist Icon

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

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: MyHomePage(),
    );
  }
}

class MyHomePage extends StatelessWidget {
  final List<String> items = [
    'Item 1',
    'Item 2',
    'Item 3',
    'Item 4',
    'Item 5',
  ];

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text("Flutter List Example"),
      ),
      body: ListView.builder(
        itemCount: items.length,
        itemBuilder: (BuildContext context, int index) {
          return ListTile(
            title: Text(items[index]),
          );
        },
      ),
    );
  }
}
```

## Flutter List Example

DEBUG

Item 1

Item 2

Item 3

Item 4

Item 5

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

```
void main() {
```



```
runApp(MyApp());
}

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: MyHomePage(),
    );
  }
}

class MyHomePage extends StatelessWidget {
  void showToast(BuildContext context) {
    ScaffoldMessenger.of(context).showSnackBar(
      SnackBar(
        content: Text('Hello, Flutter Toast!'),
        duration: Duration(seconds: 2),
      ),
    );
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Flutter Toast Example'),
      ),
      body: Center(
        child: ElevatedButton(
          onPressed: () => showToast(context),
          child: Text('Show Toast'),
        ),
      ),
    );
  }
}
```

## Flutter Toast Example

DEBUG

Show Toast

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

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

```
class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      theme: ThemeData(
        scaffoldBackgroundColor: Colors.black, // Set background color
to black
        primaryColor: Colors.yellow, // Set text color to yellow
      ),
      home: MyHomePage(),
    );
  }
}

class MyHomePage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Flutter Theme Example'),
      ),
      body: Center(
        child: Text(
          'Welcome to Flutter Themes',
          style: TextStyle(
            fontSize: 24,
            color: Colors.yellow, // Set text color explicitly
          ),
        ),
      ),
    );
  }
}
```

**Welcome to Flutter Themes**

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

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

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: MyHomePage(),
    );
  }
}

class MyHomePage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Flutter Pie Chart Demo'),
      ),
      body: Center(
        child: PieChart(
          PieChartData(
            sections: [
              PieChartSectionData(
                color: Colors.blue,
                value: 30,
                title: 'Category A',
              ),
              PieChartSectionData(
                color: Colors.green,
                value: 40,
                title: 'Category B',
              ),
              PieChartSectionData(
                color: Colors.orange,
                value: 20,
                title: 'Category C',
              ),
              PieChartSectionData(
```

```
        color: Colors.red,  
        value: 10,  
        title: 'Category D',  
      ),  
    ],  
  ),  
),  
),  
),  
);  
}  
}
```

Flutter Pie Chart Demo

DEBUG

