

Faculty of Technology and Engineering

Chandubhai S. Patel Institute of Technology

Department of Computer Science & Engineering

Date: / /

Laboratory Manual Performa

Academic Year	:	2024-25	Semester	:	5 TH
Course code	:	CSE309	Course name	:	Mobile Application and Development

Practical - 3

Create a Mini Calculator App using 2 Text field and +-*/ button. On the button click event display the answer on next screen.

Introduction of relevant concepts used:

- **StatefulWidget:** A type of widget in Flutter that maintains mutable state, allowing the UI to rebuild when the state changes, which is essential for interactive applications like a calculator.
- **Navigator:** A widget that manages a stack of routes (screens) in a Flutter app, enabling navigation between different screens and passing data (like results) between them.

main.dart

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

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

```
class MyApp extends StatelessWidget {  
  @override  
  Widget build(BuildContext context) {  
    return MaterialApp(  
      title: 'Mini Calculator',  
      theme: ThemeData(  
        primarySwatch: Colors.blue,  
      ),  
      home: CalculatorScreen(),  
    );  
  }  
}
```

Calculator_screen.dart

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

```

class CalculatorScreen extends StatefulWidget {
  @override
  _CalculatorScreenState createState() => _CalculatorScreenState();
}

class _CalculatorScreenState extends State<CalculatorScreen> {
  final TextEditingController num1Controller = TextEditingController();
  final TextEditingController num2Controller = TextEditingController();

  void _calculate(String operator) {
    final num1 = double.tryParse(num1Controller.text);
    final num2 = double.tryParse(num2Controller.text);

    if (num1 == null || num2 == null) {
      _showErrorDialog("Please enter valid numbers");
      return;
    }

    double result;
    switch (operator) {
      case '+':
        result = num1 + num2;
        break;
      case '-':
        result = num1 - num2;
        break;
      case '*':
        result = num1 * num2;
        break;
      case '/':
        if (num2 == 0) {
          _showErrorDialog("Cannot divide by zero");
          return;
        }
        result = num1 / num2;
        break;
      default:
        result = 0;
    }

    Navigator.push(
      context,
      MaterialPageRoute(
        builder: (context) => ResultScreen(result: result),
      ),
    );
  }

  void _showErrorDialog(String message) {
    showDialog(
      context: context,
      builder: (context) => AlertDialog(

```

```

title: Text('Error'),
content: Text(message),
actions: [
  TextButton(
    onPressed: () {
      Navigator.of(context).pop();
    },
    child: Text('OK'),
  ),
],
),
);
}

```

```

@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      title: Text('Mini Calculator'),
    ),
    body: Padding(
      padding: const EdgeInsets.all(16.0),
      child: Column(
        children: [
          TextField(
            controller: num1Controller,
            keyboardType: TextInputType.number,
            decoration: InputDecoration(
              labelText: 'Enter first number',
            ),
          ),
          TextField(
            controller: num2Controller,
            keyboardType: TextInputType.number,
            decoration: InputDecoration(
              labelText: 'Enter second number',
            ),
          ),
          SizedBox(height: 20),
          Row(
            mainAxisAlignment: MainAxisAlignment.spaceEvenly,
            children: [
              ElevatedButton(
                onPressed: () => _calculate('+'),
                child: Text('+'),
              ),
              ElevatedButton(
                onPressed: () => _calculate('-'),
                child: Text('-'),
              ),
              ElevatedButton(
                onPressed: () => _calculate('*'),
                child: Text('*'),
              ),
            ],
          ),
        ],
      ),
    ),
  );
}

```

```

    ),
    ElevatedButton(
      onPressed: () => _calculate('/'),
      child: Text('/'),
    ),
  ],
),
],
),
);
}
}

```

Result_screen.dart

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

```
class ResultScreen extends StatelessWidget {
  final double result;
```

```
  ResultScreen({required this.result});
```

```
  @override
```

```
  Widget build(BuildContext context) {
```

```
    return Scaffold(
```

```
      appBar: AppBar(
```

```
        title: Text('Result'),
```

```
      ),
```

```
      body: Center(
```

```
        child: Text(
```

```
          'Result: $result',
```

```
          style: TextStyle(fontSize: 24),
```

```
        ),
```

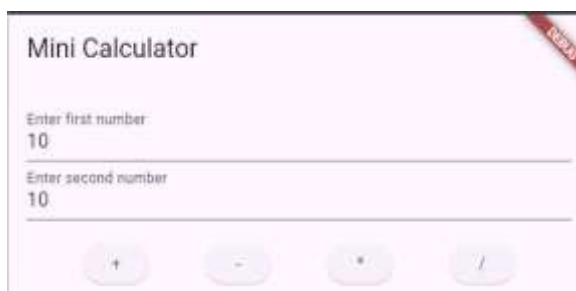
```
      ),
```

```
    );
```

```
  }
```

```
}
```

Output (Screenshot)



Result: 20

Result: 100

Result: 0

Result: 1