Faculty of Technology and Engineering
Chandubhai S. Patel Institute of Technology
Department of Computer Science & Engineering

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Laboratory Manual Performa

Academic Year	:	2024-25	Semester	:	5TH
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:

Code (Screenshot)

Main.dart

```dart
lib > main.dart > ...
1   import 'package:flutter/material.dart';
2   import 'result_screen.dart';
3
    Run | Debug | Profile
4   void main() {
5     runApp(const MyApp());
6   }
7
8   class MyApp extends StatelessWidget {
9     const MyApp({Key? key}) : super(key: key);
10
11    @override
12    Widget build(BuildContext context) {
13      return MaterialApp(
14        title: 'Mini Calculator',
15        theme: ThemeData(
16          primarySwatch: Colors.blue,
17        ), // ThemeData
18        home: const CalculatorScreen(),
19      ); // MaterialApp
20    }
21  }
22
23  class CalculatorScreen extends StatefulWidget {
24    const CalculatorScreen({Key? key}) : super(key: key);
25
26    @override
27    _CalculatorScreenState createState() => _CalculatorScreenState();
28  }
29
```

```dart
30  class _CalculatorScreenState extends State<CalculatorScreen> {
31    final _num1Controller = TextEditingController();
32    final _num2Controller = TextEditingController();
33
34    void _navigateToResult(BuildContext context, double result) {
35      Navigator.push(
36        context,
37        MaterialPageRoute(
38          builder: (context) => ResultScreen(result: result),
39        ), // MaterialPageRoute
40      );
41    }
42
43    void _performOperation(String operation) {
44      final num1 = double.tryParse(_num1Controller.text);
45      final num2 = double.tryParse(_num2Controller.text);
46
47      if (num1 == null || num2 == null) {
48        _showErrorDialog("Invalid input");
49        return;
50      }
51
52      double result;
53      switch (operation) {
54        case '+':
55          result = num1 + num2;
56          break;
57        case '-':
58          result = num1 - num2;
59          break;
60        case '*':
61          result = num1 * num2;
62          break;
63        case '/':
64          if (num2 == 0) {
65            _showErrorDialog("Cannot divide by zero");
66            return;
67          }
68          result = num1 / num2;
69          break;
70        default:
71          return;
72      }
73      _navigateToResult(context, result);
74    }
```

```dart
30  class _CalculatorScreenState extends State<CalculatorScreen> {
75
76    void _showErrorDialog(String message) {
77      showDialog(
78        context: context,
79        builder: (context) => AlertDialog(
80          title: const Text("Error"),
81          content: Text(message),
82          actions: [
83            TextButton(
84              onPressed: () {
85                Navigator.pop(context);
86              },
87              child: const Text("OK"),
88            ), // TextButton
89          ],
90        ), // AlertDialog
91      );
92    }
93
94    @override
95    Widget build(BuildContext context) {
96      return Scaffold(
97        appBar: AppBar(title: const Text('Mini Calculator')),
98        body: Padding(
99          padding: const EdgeInsets.all(16.0),
100         child: Column(
101           children: [
102             TextField(
103               controller: _num1Controller,
104               decoration: const InputDecoration(labelText: 'Enter first number'),
105               keyboardType: TextInputType.number,
106             ), // TextField
```

```
107              TextField(
108                controller: _num2Controller,
109                decoration: const InputDecoration(labelText: 'Enter second number'),
110                keyboardType: TextInputType.number,
111              ), // TextField
112              const SizedBox(height: 20),
113              Row(
114                mainAxisAlignment: MainAxisAlignment.spaceAround,
115                children: [
116                  ElevatedButton(
117                    onPressed: () => _performOperation('+'),
118                    child: const Text('+'),
119                  ), // ElevatedButton
120                  ElevatedButton(
121                    onPressed: () => _performOperation('-'),
122                    child: const Text('-'),
123                  ), // ElevatedButton
124                  ElevatedButton(
125                    onPressed: () => _performOperation('*'),
126                    child: const Text('*'),
127                  ), // ElevatedButton
128                  ElevatedButton(
129                    onPressed: () => _performOperation('/'),
130                    child: const Text('/'),
131                  ), // ElevatedButton
132                ],
133              ), // Row
134            ],
135          ), // Column
136        ), // Padding
137      ); // Scaffold
138    }
139  }
140
```

Result_screen.dart

```
main.dart          result_screen.dart ×

lib > result_screen.dart > ...
  1  import 'package:flutter/material.dart';
  2
  3  class ResultScreen extends StatelessWidget {
  4    final double result;
  5
  6    const ResultScreen({Key? key, required this.result}) : super(key: key);
  7
  8    @override
  9    Widget build(BuildContext context) {
 10      return Scaffold(
 11        appBar: AppBar(
 12          title: const Text("Result"),
 13        ), // AppBar
 14        body: Center(
 15          child: Text(
 16            'Result: $result',
 17            style: const TextStyle(fontSize: 24),
 18          ), // Text
 19        ), // Center
 20      ); // Scaffold
 21    }
 22  }
 23
```

Output (Screenshot)
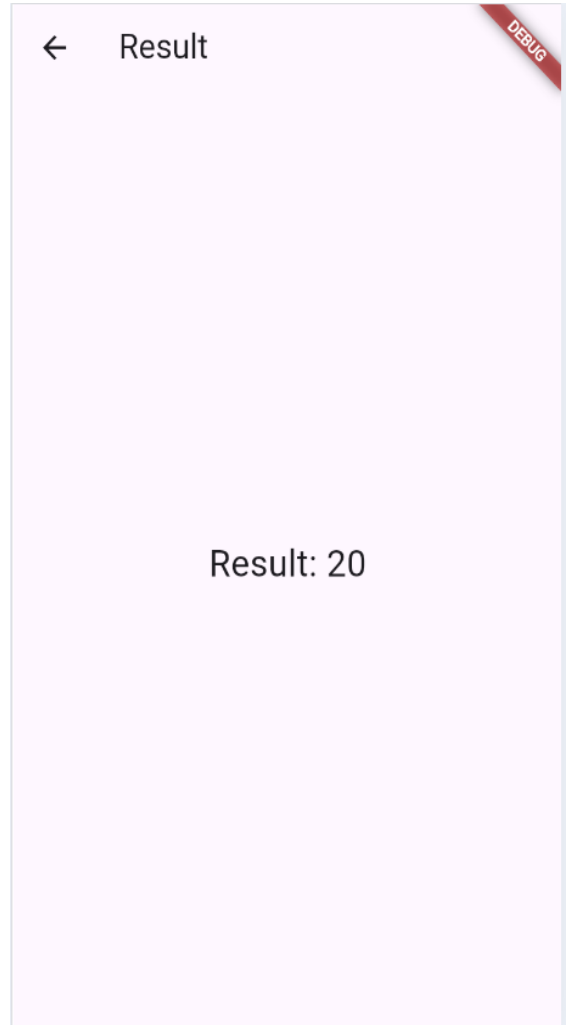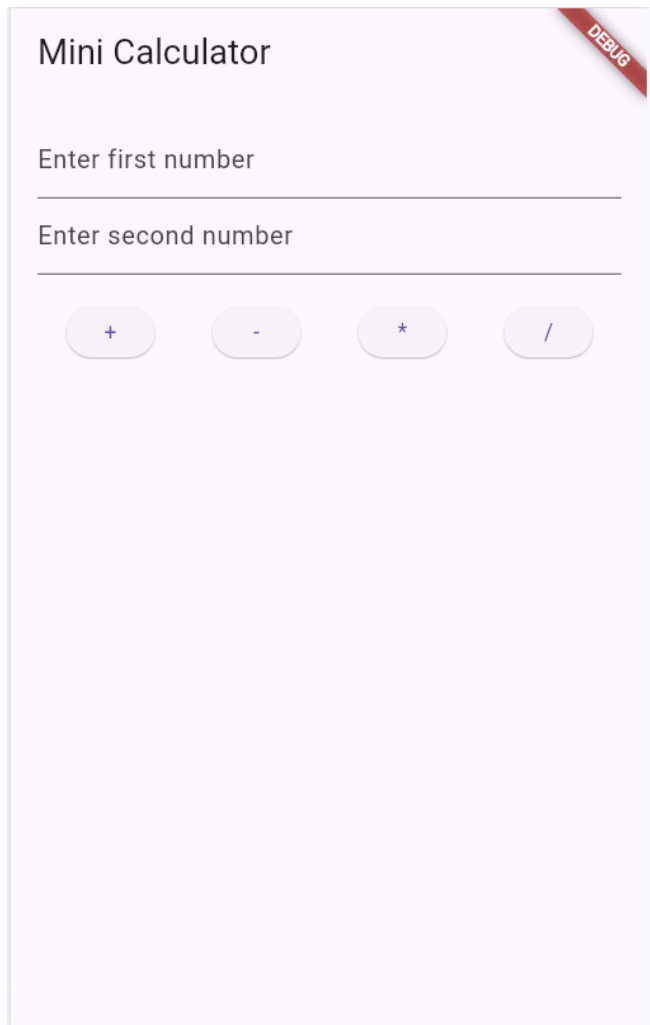
Grade/Marks   **Sign of Lab Teacher with Date**
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