CSM3114 Lab 4

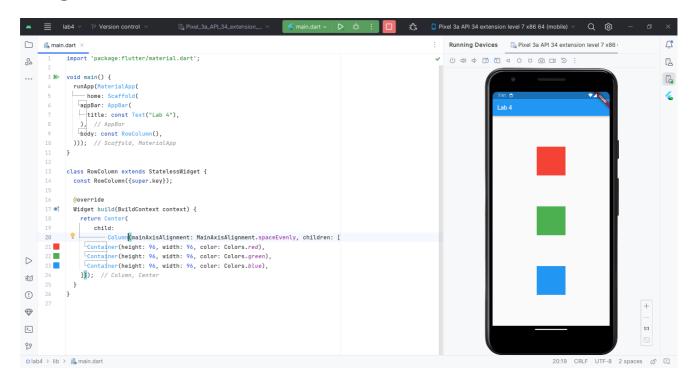
Gary Lim S62079

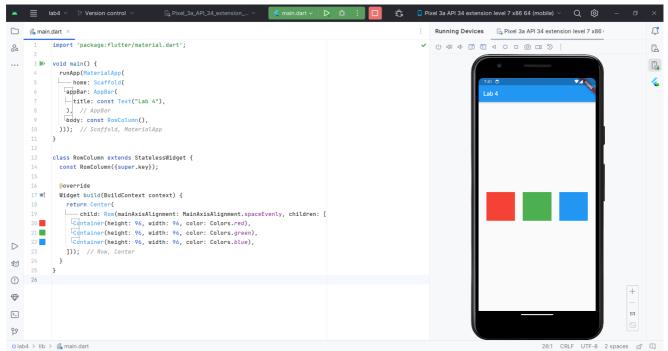
1 Basic concept on the common Flutter widgets used to develop mobile application

1.1 Widget Alignment

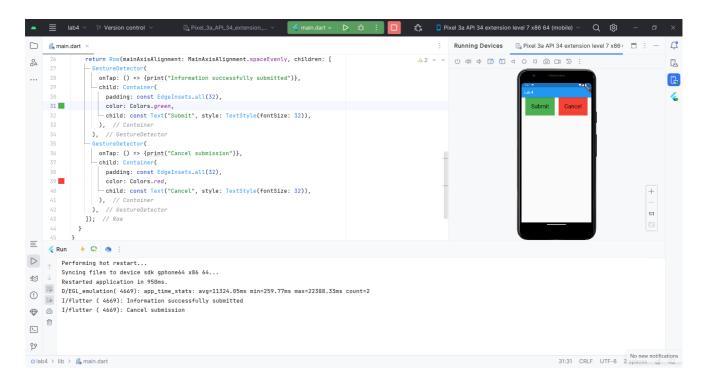
1.2 Define the space evenly the Container widget inside the screen

1.3 Use the Center widget to center the position of Column widgets



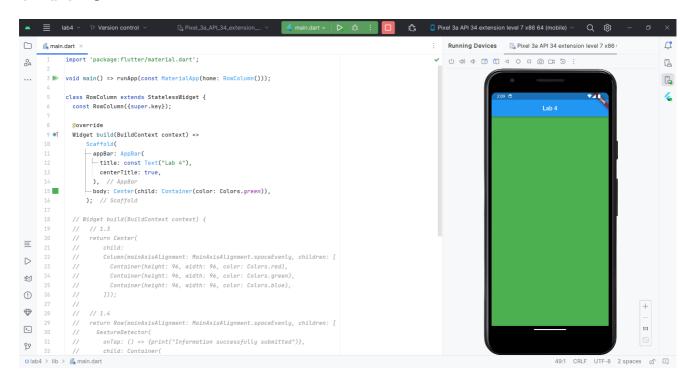


1.4 Exercise



2 Using the Arrow Notation (⇒(); Function)

2.1 Single expression in function by using the arrow notation (⇒();) syntax



2.2 Exercise

```
Running Devices 🕞 Pixel 3a API 34 extension level 7 x86 ! 🗂 : —
main.dart ×
             import 'package:flutter/material.dart';
                                                                                                                                     04
                                                                                                                                                                                                        3 ▶ void main() => runApp(const MaterialApp(home: RowColumn()));
                                                                                                                                                                                                        G
             class RowColumn extends StatelessWidget {
               const RowColumn({super.key});
               Widget build(BuildContext context) => Scaffold(
                     - appBar: AppBar(

— title: const Text("Lab 4"),
                       centerTitle: true,
                      ), // AppBar
                      body: Center(
                     - child: Container(
      16
                        color: Colors.green,
                       child: const ElevatedButton(
                       onPressed: null,
child: Text("My Text"),
                         onPressed: null,
                     ), // ElevatedButton
)), // Container, Center
\equiv
                    ); // Scaffold
\triangleright
             // Widget build(BuildContext context) {
€
                 // 1.3
return Center(
(!)
                      child:
\bigoplus
                       Column(mainAxisAlignment: MainAxisAlignment.spaceEvenly, children: [
                        Container(height: 96, width: 96, color: Colors.red),
Container(height: 96, width: 96, color: Colors.green),
>_
                         Container(height: 96, width: 96, color: Colors.blue),
થ
                                                                                                                                                                      55:1 CRLF UTF-8 2 spaces 🖆 🗓
```

Wait, I forgot onClick

```
Q ®
                                                                                                                            5
main.dart >
            import 'package:flutter/material.dart';
04
                                                                                                                            3 ▶ void main() => runApp(const MaterialApp(home: RowColumn()));
                                                                                                                                                                                           G
            var text = "My Text";
            class RowColumn extends StatelessWidget {
              const RowColumn({super.key});
      11 👏
              Widget build(BuildContext context) => Scaffold(
                   — appBar: AppBar(

— title: const Text("Lab 4"),
                      centerTitle: true,
                    ). // AppBar
                     body: Center(
                    - child: Container(
      18
                      color: Colors.green,
                      child: ElevatedButton(
                      onPressed: () => {text = "Mobile Framework"},
child: Text(text),
\equiv
                  ), // ElevatedButton
)), // Container, Center
); // Scaffold
\triangleright
∌
(!)
            // Widget build(BuildContext context) {
\bigoplus
                     child:
>_
                     Column(mainAxisAlignment: MainAxisAlignment.spaceEvenly, children: [
                      Container(height: 96, width: 96, color: Colors.red),
Container(height: 96, width: 96, color: Colors.green)
જ
□ lab4 > lib > 👢 main.dart
```

cool.

3 Implementing A StatefulWidget

3.1 Changing the background color for widget

```
🚜 main.dart 🗵
                                                                                                                             Running Devices Pixel 3a API 34 extension level 7 x86
                                                                                                                                                                                              Û
04
                                                                                                                                                                                              GestureDetector(
                                                                                                                                                                                             onTap: () => {print("Cancel submission")},
                          child: Container
                           padding: const EdgeInsets.all(32),
                            color: Colors.red,
child: const Text("Cancel", style: TextStyle(fontSize: 32)),
              class RowColumn extends StatefulWidget {
      60
                const RowColumn({super.key});
                State<StatefulWidget> createState() => _RowColumn();
      66
              class _RowColumn extends State<RowColumn> {
\triangleright
      68
€
(!)
      70 of
                Widget build(BuildContext context) {
body: GestureDetector(
>_
                                                                                                                                                                                       1:1
                         — child: Container(color: blue ? Colors.blue : Colors.red))); // GestureDetector, Scaffold
လှ
                                                                                                                                                             77:1 CRLF UTF-8 2 spaces 🗗 🗓
□ lab4 > lib > 👗 main.dar
```

3.2 Implement Stateful Widget using Button widget

```
Running Devices Pixel 3a API 34 extension level 7 x86
     🚜 main.dart >
                           onTap: () => setState(() => blue = !blue).
04
                                                                                                                                                                                            child: Container(color: blue ? Colors.blue : Colors.red)));
                                                                                                                                                                                            var count = 0;
              Widget build(BuildContext context) {
                return Scaffold(
                --- body: Center(
                    child:
                            Column(mainAxisAlignment: MainAxisAlignment.center, children: [
                 onPressed: () => setState(() => print(++count)), // add()
                 child: const Text("Click Me!")), // TextButton
Text("You clicked me $count times!")
                                                                                                                                                                                      1:1
                ]))); // Column, Center, Scaffold
\triangleright
     D/EGL_emulation( 4167): app_time_stats: avg=32.80ms min=2.95ms max=531.54ms count=29
₩
         D/EGL emulation( 4167): app time stats: avg=25.92ms min=3.38ms max=415.40ms count=23
(!)
    I/flutter ( 4167): 6
D/EGL_emulation( 4167): app_time_stats: avg=13.23ms min=3.12ms max=186.56ms count=32
         D/EGL_emulation( 4167): app_time_stats: avg=15.63ms min=3.09ms max=245.95ms count=29
>_
         D/EGL_emulation( 4167): app_time_stats: avg=72.08ms min=2.90ms max=1475.58ms count=22
99
□ lab4 > lib > 🐇 main.dart
```

3.3 Applying StatefulWidget for Updating the State of Scaffold bottomSheet property via TextField widget

```
Q 🕸
Ô
             const Lab4Task3Part3({super.key});
                                                                                                        04
                                                                                                                                                              18 of Widget build(BuildContext context) {
              return const MaterialApp(home: Lab4());
            const Lab4({super.key});
     19 of State<StatefulWidget> createState() => _Lab4();
          class _Lab4 extends State<Lab4> {
             String input = "";
     26
27 •†
            Widget build(BuildContext context) {
\triangleright
                                                                                                                             r t v u i o p
              appBar: AppBar(title: const Text("Lab 4")),
₩
                                                                                                                                g h j k
                    child: TextField(
(!)
                                                                                                                                    b n m ເ€
                  onChanged: (value) => setState(() => input = value))), // TextField, Center
-bottomSheet: Container(
\bigoplus
                  alignment: Alignment.center,
>_
                  height: 64,

child: Text("Output: $input"),
થ
                  )); // Container, Scaffold
```

3.4 Exercise - Applying StatefulWidget

