

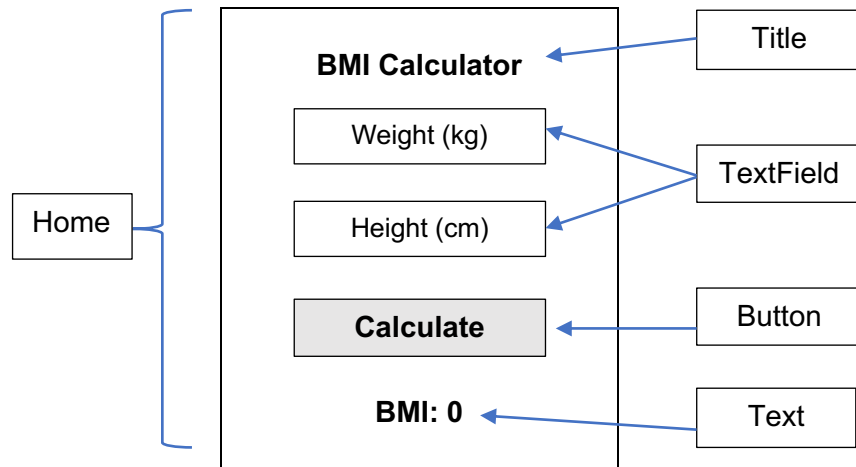
## Developing Flutter

### Key Points

### Notes

#### 1. Developing BMI Calculator

a. Our BMI Calculator consists the following widgets:



b. We break the widgets into several groups:

Widget	Description
Home	MaterialApp UI or CupertinoApp UI layout as stateless widget.
Title	AppBar property and align to center, which is part of layout.
TextField	Place in a container for each text field (Weight & Height). Each text field is a sub widget in a container. Part of Stateful widget.
Button	Place in a container as a sub widget. Part of stateful widget.
Text	Place in a container as sub widget and part of stateful widget.

### Summary

## Developing Flutter

Key Points	Notes						
	<div>2. Creating Flutter Project</div> <div>a. Based on your preference, you can choose to create a new Flutter project using Flutter CLI or Android Studio.</div> <div><table><tr><th>Flutter CLI</th></tr><tr><td><pre>&gt; flutter create bmi &gt; cd bmi &gt; flutter run</pre><p>* Make sure simulator (iOS) or emulator(Android) is running before execute flutter run command.</p></td></tr><tr><th>Android Studio</th></tr><tr><td><pre>1. Open Android Studio 2. Select New Flutter Project 3. Select Flutter Application 4. Type bmi in the Project Name 5. Set default to Package Name (com.example.bmi) 6. Click Finish</pre><p>* Make sure your Android Studio is up-to-date by clicking 'Check for updates'.</p></td></tr></table></div> <div>3. Import Necessary Libraries</div> <div>a. We are using Material Design layout/UI and dart mathematical libraries.</div> <div><table><tr><th>Dart Libraries</th></tr><tr><td><pre>import 'package:flutter/material.dart'; import 'dart:math';</pre></td></tr></table></div>	Flutter CLI	<pre>&gt; flutter create bmi &gt; cd bmi &gt; flutter run</pre> <p>* Make sure simulator (iOS) or emulator(Android) is running before execute flutter run command.</p>	Android Studio	<pre>1. Open Android Studio 2. Select New Flutter Project 3. Select Flutter Application 4. Type bmi in the Project Name 5. Set default to Package Name (com.example.bmi) 6. Click Finish</pre> <p>* Make sure your Android Studio is up-to-date by clicking 'Check for updates'.</p>	Dart Libraries	<pre>import 'package:flutter/material.dart'; import 'dart:math';</pre>
Flutter CLI							
<pre>&gt; flutter create bmi &gt; cd bmi &gt; flutter run</pre> <p>* Make sure simulator (iOS) or emulator(Android) is running before execute flutter run command.</p>							
Android Studio							
<pre>1. Open Android Studio 2. Select New Flutter Project 3. Select Flutter Application 4. Type bmi in the Project Name 5. Set default to Package Name (com.example.bmi) 6. Click Finish</pre> <p>* Make sure your Android Studio is up-to-date by clicking 'Check for updates'.</p>							
Dart Libraries							
<pre>import 'package:flutter/material.dart'; import 'dart:math';</pre>							

### Summary

## Developing Flutter

Key Points	Notes
	<p><b>4. Define Application Entry Point</b></p> <p>a. Application execution method or function.</p> <div><b>Flutter Main Method/Function</b></div> <pre>void main() =&gt; runApp(MyApp());</pre> <p><b>5. Define Material Layout/UI as Stateless Widget</b></p> <p>a. Setting the basic layout of appbar for Material Design.</p> <div><b>Flutter Material AppBar</b></div> <pre>class MyApp extends StatelessWidget {   @override   Widget build(BuildContext context) {     return MaterialApp(       title: 'BMI Calculator',       theme: ThemeData(         primarySwatch: Colors.deepPurple,       ),       home: MyHomePage(title: 'BMI Calculator'),     );   } }</pre>
Summary	

Key Points	Notes
	<p><b>6. Define Stateful Widget for BMI Calculator</b></p> <p>a. Define stateful widget to be used for textfields, button, text and user defined functions and properties (local variables).</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;"><b>BMI Stateful Widget</b></p> <pre> class MyHomePage extends StatefulWidget {   MyHomePage({Key key, this.title}) : super(key: key);   final String title;    @override   _MyHomePageState createState() =&gt; _MyHomePageState(); }  class _MyHomePageState extends State&lt;MyHomePage&gt; {   ... }</pre> </div>
	Summary

## Developing Flutter

Key Points	Notes
	<p><b>7. Compose Material Widgets</b></p> <p>a. Insert textFields, button and text in the body. Then, build or display the widgets on screen.</p> <div data-bbox="684 394 1430 862"><p style="text-align: center;"><b>Compose Widgets</b></p><pre>@override Widget build(BuildContext context) {   return Scaffold(     appBar: AppBar(       title: new Center(         child: new Text(widget.title, textAlign: TextAlign.center)),     ),     body: Center(       ...     )   ) }</pre></div> <p><b>8. Define functions and properties for stateful widgets</b></p> <p>a. You can define your own functions or methods to be used in the stateful widgets. The same goes with properties to be used within the defined functions or methods.</p> <p>b. The defined properties or local variables are:</p> <ol style="list-style-type: none"><li><code>_weight</code> – store weight inserted from textField.</li><li><code>_height</code> – store height inserted from textField.</li><li><code>_bmi</code> – store the result of BMI calculation.</li></ol> <p>c. The created functions or methods are:</p> <ol style="list-style-type: none"><li><code>_setWeight()</code> – setState the weight current value.</li><li><code>_setHeight()</code> – setState the height current value.</li><li><code>_calculateBMI()</code> – setState result of BMI calculation.</li><li><code>_showDialog()</code> – Alert Dialog to display BMI status.</li></ol> <p><b>9. Full Code reference</b></p> <p>a. You can refer to my <a href="#">BMI github</a> for the source code. You can clone the git and run on your machine.</p>
	<p style="text-align: center;">Summary</p>