

## **Tyler Plihcik CS499 HW2**

**Sources used: LinkedIn Learning Video**

Flutter: Part 4 - Building Apps with State

### **CS 499-007: Advanced Mobile Application Development Spring 2020 x**

#### **Homework-02 Due Friday February 14 30 Points Total**

- 1) This is an individual assignment. It is okay to exchange ideas with other people or review external material on the assignment topics but the work you submit should be your work.
- 2) Include a header in your assignment sheet including your name, the section number, and the homework number.
- 3) Cite any external sources you use to help you with your assignment.
- 4) Submit your assignment on the assignment page on BBLearn. Submissions via email will not be accepted.

#### ***Android Application Requirements:***

Implement a Flutter mobile application modeled based on the *Dice App (Dicee Project)* application implemented in the *Flutter: Part4* LinkedIn training. Requirements for the application are listed below:

1. The application will have a single screen displaying five die images.
2. Use *Scaffold* widget for the basic material design structure of your application screen display.
3. Include an *AppBar* widget for the screen display and set its title to a name representative of the applications purpose/operations.
4. The application at the start shows five dice with the dice images the side one of the dice.

5. Clicking on any die image will roll all five dice.
6. After dice roll the applications screen displays the five dice after rolling.
7. Use unique choice of Material colors for the *Scaffold* and *AppBar* widgets *background* colors. You can select colors from collection of Material colors available [here](#).
8. Use a custom *app icon* for your application for the iOS and Android phone homepage.
9. Be creative and aim for an elegant and visually appealing screen display.

### **Implementation:**

1. Implement your application using Android Studio, Flutter platform and Dart programming language.

1

2. Start your Flutter application using the starting project provided for the *Dicee Project* in *Flutter: Part 4* LinkedIn training. Use the Git Hub link provided in this training to clone the project from the Git Hub. This project includes the necessary image files and the required project configuration.

3. Eliminate code redundancy using a modular design. Create functional abstractions for creation of dice and updating the state of the 5 dice after dice Roll.

**Testing:** Use *Nexus 6* virtual device with API level 28 to run your application. ***Deliverables:***

- 1) Complete Android project files in a zip folder. Name your folder using the naming convention like: *lastname\_firstname\_CS499\_hw2\_Dice.zip*.
- 2) Include snapshots of the following artifacts as displayed in the Android Studio. Paste the snapshots in a copy of this document.

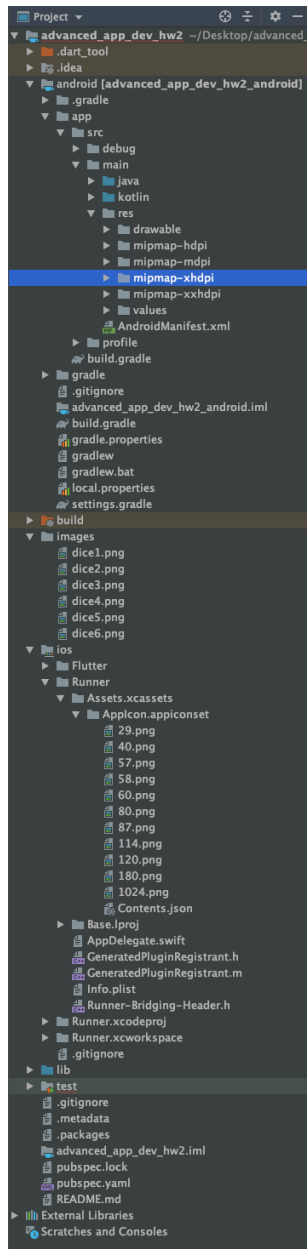
- The Dart file under the *lib* directory. Expand all the code to show the complete Dart code including the *import* instructions.

```

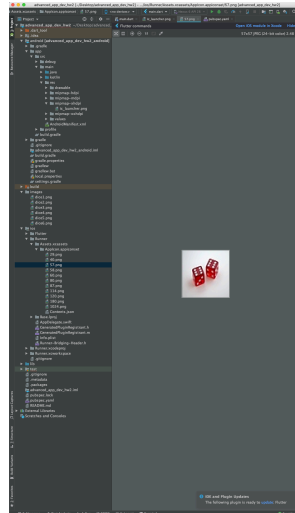
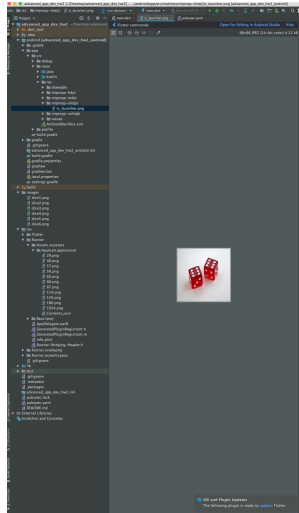
1  import 'package:flutter/material.dart';
2
3  import 'dart:math';
4
5  void main() {
6    return runApp(
7      MaterialApp(
8        home: Scaffold(
9          backgroundColor: Colors.blue,
10         appBar: AppBar(
11           title: Text('Dice'),
12           backgroundColor: Colors.orange,
13         ), // AppBar
14         body: DicePage(),
15       ), // Scaffold
16     ), // MaterialApp
17   );
18 }
19
20 class DicePage extends StatefulWidget {
21   @override
22   _DicePageState createState() => _DicePageState();
23 }
24
25 class _DicePageState extends State<DicePage> {
26
27   int oneDiceNumber = 1;
28   int twoDiceNumber = 2;
29   int threeDiceNumber = 3;
30   int fourDiceNumber = 4;
31   int fiveDiceNumber = 5;
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36
37   void changeDiceFace() {
38     {
39       setState(() {
40         oneDiceNumber = Random().nextInt(6) + 1;
41         twoDiceNumber = Random().nextInt(6) + 1;
42         threeDiceNumber = Random().nextInt(6) + 1;
43         fourDiceNumber = Random().nextInt(6) + 1;
44         fiveDiceNumber = Random().nextInt(6) + 1;
45       });
46     }
47   }
48 }
49
50 @override
51 Widget build(BuildContext context) {
52
53   return Center(
54     child: Row(
55       children: <Widget>[
56         Expanded(
57           child: FlatButton(
58             onPressed: () {
59               changeDiceFace();
60             },
61             child: Image.asset('images/dice$oneDiceNumber.png'),
62           ), // FlatButton
63         ), // Expanded
64         Expanded(
65           child: FlatButton(
66             onPressed: () {
67               changeDiceFace();
68             },
69             child: Image.asset('images/dice$twoDiceNumber.png'),
70           ), // FlatButton
71         ), // Expanded
72         Expanded(
73           child: FlatButton(
74             onPressed: () {
75               changeDiceFace();
76             },
77             child: Image.asset('images/dice$threeDiceNumber.png'),
78           ), // FlatButton
79         ), // Expanded
80         Expanded(
81           child: FlatButton(
82             onPressed: () {
83               changeDiceFace();
84             },
85             child: Image.asset('images/dice$fourDiceNumber.png'),
86           ), // FlatButton
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88         Expanded(
89           child: FlatButton(
90             onPressed: () {
91               changeDiceFace();
92             },
93             child: Image.asset('images/dice$fiveDiceNumber.png'),
94           ), // FlatButton
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96       ], // <Widget>[]
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```

- The Android Studio Project Pane showing any directories and components that you have added/changed for your application. Expand android, images, ios and lib directories to show all application components.



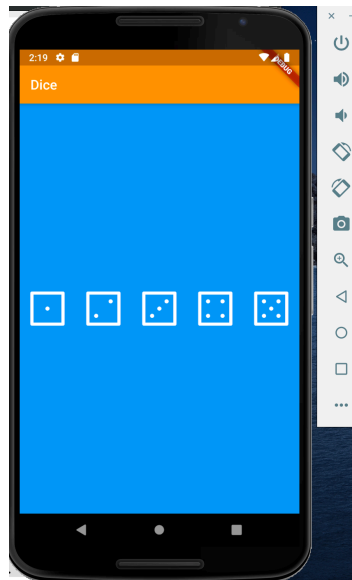
- Show at least one android *mipmap* image and one iOS *icon-App* image displayed in the Android Studio Editor pane.



- The *pubspec.yaml* file after removing all comments.

```
Flutter commands Packages get Packages upgrade Flutter upgrade Flutter doct
1  name: dice
2  description: A new Flutter application.
3
4  version: 1.0.0+1
5
6  environment:
7    sdk: ">=2.1.0 <3.0.0"
8
9  dependencies:
10   flutter:
11     sdk: flutter
12
13   cupertino_icons: ^0.1.2
14
15  dev_dependencies:
16   flutter_test:
17     sdk: flutter
18
19  flutter:
20
21   uses-material-design: true
22
23  assets:
24   - images/
25
```

- 
- 3) View of your application when it is run on the *Nexus 6* virtual device.



- 4) View of Android Nexus 6 home page including display of your *app icon*.

