

Lebanese American University

CSC498 – Mobile Development

Spring 2022-2023

Test 1 – Monday 13-03-2023 @ 10:00 → 10:50

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Section: 12

80
Too

40 + 30 = 40

Question I (50 points)

- 1- You are building a mobile app that needs to work seamlessly on both iOS and Android devices. What do you recommend to use for development and why?

I would recommend using a cross-platform solution such as Flutter that would provide a seamless experience on both iOS & Android with reusable codebase.

10

- 2- You are building a mobile app that needs to interact with complex, data-heavy APIs. Which framework, Ionic or Flutter, would offer the best tools and libraries for handling these data interactions?

Flutter has several plugins & libraries to interact with APIs.

It also performs better than Ionic and a Flutter solution would be better.

10

- 3- Your mobile app will primarily be used for e-commerce transactions, with a focus on fast, reliable payments and a smooth checkout experience. Which framework, Ionic or Flutter, would offer the best performance and security features for this use case?

Since the experience has to be smooth, Flutter would offer a better user experience than Ionic. Many plugins + libraries in Flutter can help in providing payment gateways and the graphical appeal of Flutter along with its smooth user experience makes it better.

X

- 4- Your team needs to build a mobile app that has complex animations and transitions, such as page transitions, scrolling, and animated icons. Would you recommend using Ionic or Flutter for this use case, and why?

Web based solutions such as Ionic cannot provide CPU intensive animations, but Flutter can. Flutter would be better in this scenario.

Y

- 5- Your mobile app needs to be highly performant and optimized for low-end devices, as it will be used primarily in developing countries with slower network connections and older hardware. Which framework, Ionic or Flutter, would be a better choice for this use case, and why?

Since the hardware is old, Ionic would be better, as it runs.

Since the internet is slow, Flutter would be better. Ionic requires constant internet connection which could be troublesome. In addition, since Flutter builds natively, it will work much better on the hardware.

Y

Question II (40 points)

1- Identify the error if any, in the following Flutter code:

→ ~~missing imports: import 'package:flutter/material.dart';~~

```
class MyHomePage extends StatefulWidget {
    MyHomePage({Key? key, required this.title}) : super(key: key);

    final String title;

    @override
    _MyHomePageState createState() => _MyHomePageState();
}

class _MyHomePageState extends State<MyHomePage> {
    int _counter = 0;

    void _incrementCounter() {
        setState(() {
            _counter++;
        });
    }

    @override
    Widget build(BuildContext context) {
        return Scaffold(
            appBar: AppBar(
                title: Text(widget.title),
            ),
            body: Center(
                child: Column(
                    mainAxisAlignment: MainAxisAlignment.center,
                    children: <Widget>[
                        Text(
                            'You have pushed the button this many times:',
                        ),
                        Text(
                            '$_counter',
                            style: Theme.of(context).textTheme.headline4,
                        ),
                        RaisedButton(
                            child: Text('Increment Counter'),
                            onPressed: _incrementCounter,
                        ),
                    ],
                ),
            );
    }
}
```

No errors found in this code

2- Complete the following Ionic code to display a button that navigates to a new page:

```
<ion-content>
  <ion-button (click)="goToPage()">Go to Page</ion-button>
</ion-content>
```

```
goToPage() {
  this.router.navigate(['new-page']);
```

0



3- Identify the error if any, in the following Flutter code:

```
class MyHomePage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('My App'),
      ),
      body: Center(
        child: Text('Welcome to my app'),
      ),
    );
}
```

10

No errors found in this code

4- Complete the following Flutter code to display a button that increments a counter when clicked:

```
class MyHomePage extends StatefulWidget {  
    @override  
    _MyHomePageState createState() => _MyHomePageState();  
}  
  
class _MyHomePageState extends State<MyHomePage> {  
    int _counter = 0;  
  
    void _incrementCounter() {  
        ...  
    }  
}
```

```
import 'package:flutter/material.dart';  
class MyHomePage extends StatefulWidget {  
    @override  
    _MyHomePageState createState() => _MyHomePageState();  
}  
class _MyHomePageState extends State<MyHomePage> {  
    int _counter = 0;  
    void _incrementCounter() {  
        setState(() {  
            _counter++;  
        });  
    }  
}  
// More code on next page  
=>
```

Question III (10 points)

What is this course about? What do you prefer to use in your mobile application development projects? what is your project for this course? explain the above briefly.

This course discusses mobile development and the various tools, technologies and frameworks used in mobile development. My project will be a pet supply store and it will be built using React Native.

@override

Widget build(BuildContext context) {

return scaffold (

appBar: AppBar (

title: Text ('Click The Button'),

),

body: Center (

child: Column (

mainAxisSize: MainAxisSize .center,

children: <Widget> [

Text ('You have pushed the button \$ - count
time'),

Text (style: TextStyle (fontSize: 25),

),

},

),

floatingActionButton: FloatingActionButton (

onPressed: - incrementCounter,

toolTip: 'Increment',

child: Icon (Icons.add),

),

);