

CS4131

Mobile Application Development



Name: _____ () Date: _____

PROJECT PART 2, 3 (Development & Showcase)

70 Marks (30% + 5%)

Date issued: **T1W7 (Week of 14th Feb)**

Date Due: **T2W3 10th Apr 2022, 2100hrs**

ACADEMIC INTEGRITY

ALL codes will be thoroughly checked and compared for any plagiarism. Any act of dishonesty will render zero mark for originator group and the “copy-cat” group. You should do the assignment on your own (i.e. the assignment must be your original work). Have pride in your own work. You will feel good if it is your own work

LATE WORK

10% of total assignment marks will be deducted per week you are late.

Should you need extension due to valid reasons, please alert and negotiate with teacher early (Extension request the day before deadline or on the due date itself will NOT be accepted). Please plan your time wisely.

INSTRUCTIONS

- You are required to submit:
 - ZIP file containing entire project folder
 - Working APK file needs to be generated and submitted as well
 - Name your Android Studio Project: **ProjectP2_<Your name>.zip**
 - Softcopy PDF report. Requirements of the PDF report to be submitted is further elaborated upon in the task requirements.
 - Name your PDF report: **ProjectP2Report_<Your name>.pdf**
- Students who fail to adhere to submission requirements will have their PA marks deducted accordingly.
- Marks will be deducted for poor functionality and coding style. Things to look out for includes:
 - Meaningful comments and proper indentation of code
 - Modularity of program codes and proper organization of resources
 - Use of UI components make sense and events are handled smoothly with minimal bugs
- Marks will be deducted for poor UI creation. Things to look out for includes:
 - Good contrast between background and text
 - UI components neither cluttered nor buggy
 - Text easily readable, of good size and legible
 - Use of UI components make sense and is meaningful

Any app which cannot be compiled and run will be given an immediate 0.

Background:

Now that you have completed the initial planning phase for the **front-end** of your app, you will now have to work on the **back-end development** of your app, and this is essentially the entire role of a **full-stack developer**, who builds both the front-end and back-end of the software (and consequently gets paid a lot for it in the working world).

Note that even though you may have submitted Part 1, **it is meant to be a working document while you work on Part 2**. This means that as you build your app, you may realise that your idea may need some tweaking, or some functionalities do not make sense to go into your app, or that you have found a way to make the front-end of the app even better, then **you can go back to revisit part 1 to make the necessary changes which will act as a guide for part 2**. This loop is a common aspect of software development and developers are constantly going through a feedback loop to produce the best-possible product for their intended target audience.

Project Task for Part 2 (50 Marks)

Use Android Studio to develop the app you planned to do based on your planning in Part 1.

Please make sure to allow your app to run at a minimum of Android 8.1 (API 27). While you are free to set your project settings to go beyond that minimum, please do not go beyond Android 10 (API 29). Any higher means that your app will not be able to run for a significant population of users.

As the app is also meant to showcase your learning in the module, **it is required that your app, at the minimum, implements the following:**

- Have a good variety of UI components with relevant event-handling. Note that the UI components need to be meaningful based on your planning.
- Good use of the Snackbar / Toast for messages
- Good use of a FAB for an important functionality in your app.
- Onboarding into the app for first-time users
- Information presented in cards (CardView) and the use of RecyclerView
- Good use of the action bar, the action icons and the overflow menu
- Use of dialogs either as alerts or to for some other useful purpose based on your app
- Use of explicit intents to transfer data between activities / fragments
- Use of implicit intents to leverage on other apps in the mobile device to perform a purpose (open a webpage, send emails, text messaging, telephony, etc)
- Good and meaningful use of notifications in the app.
- Navigation between activities / fragments
- Use of meaningful and vibrant transition effects between activities / fragments

You are also to ensure that your app,

- Follows Material Design guidelines and standards: <https://material.io/design>
- Make sure to verify if any actions you employ in your app require any **permissions**. If so, the app needs to ask for the consent of relevant permissions.

Report and Documentation for Part 2 (10 Marks)

You are also to write a documentation, submitted as a PDF file, which consist of 4 sections:

- **Overview of project**

Include your project idea and the intended target audience, and how your app will be useful for your target audience.

- **Documentation of App**

You are to provide a full user documentation **with screenshots** on how to use the app and its functionalities. Some **explanation of the code used for the key functionalities** of your app should be included. This is to document and showcase your learning.

- **Usability Study and User Feedback**

You are to test your app with **at least 5 people**, which should be a mix of those around your age and adults. Outline **how the usability study was conducted** (brief details of each participant, what steps you made the participants follow, how feedback was recorded) and **include the feedback given by the participants in the report**.

- **Reflections**

You are to give your learning and insights in the aspect of building your project. Some questions to consider:

- What did you learn outside of the syllabus or qualitatively from doing the project?
- What were some difficulties faced while doing the project?
- What could you have done better if more time was given?

Grading (Part 2):

Criteria	Details of Requirements	Marks
Back-end Development	<ul style="list-style-type: none"> • Minimum implementation of syllabus content met (see Pg 2) • App runs smoothly with minimum or no bugs • Navigation in app works properly with no missing links • All intended functionalities of app are present and work properly • Final backend development is sufficiently complex 	30
Front-end UI Design	<ul style="list-style-type: none"> • UI design makes sense and fits the purpose of the app • UI components are not cluttered and can be seen as intended regardless of size of screen • UI design is user-friendly in practice and is aesthetically pleasing in practice, with a positive user experience in place. • UI considers accessibility (for disabled / low tech users) 	20
Report and Documentation	<ul style="list-style-type: none"> • Overview of project accurately reflect project idea and intended target audience • Documentation is sufficiently detailed with screenshots • Code of important key functionalities are explained well • Usability study is done meaningfully with required details given • Reflection displays learning, critical insights, and maturity of though through the project process 	10

Part 3: App Showcase (10 Marks)

After submission of your app in T2W3, you are to prepare for your app showcase to the class.

In your presentation, you are expected to present

- Project idea and intended target audience (Task 1 of Part 1)
- Summary of user stories and consolidation of features (Task 4 and 5 of Part 1)
- Lo-Fi / Hi-Fi prototype (Task 6 of Part 1)
- Screenshots and description of key functionalities in actual app.
- Changes made from lo-fi / hi-fi prototype to the actual thing **with rationale**
- Usability study details and **insights from the usability study**
- **How your app can be further improved beyond the module**
- Personal reflections for the project

Ensure to keep your presentation to within a **maximum of 12 mins** with **3 mins for Q&A**

Note that you should do the presentation as if you are presenting to a client who is a stakeholder you are creating and selling the app to.

Grading (Part 3):

Criteria	Details of Requirements	Marks
Presentation	<ul style="list-style-type: none">• All items required in the presentation are presented effectively• Presentation slides are well made and not cluttered and readable• Presentation is engaging and clear• Insights from usability study, changes from prototype to actual and how app can be further improved, all display a critical and insightful thought process	5
Q&A	<ul style="list-style-type: none">• Presenter can confidently answer questions from the audience• Answers from presenter are insightful	3
Peer evaluation by classmates	<ul style="list-style-type: none">• Based purely from MS Forms survey and feedback	2