MODULE NAME:	MODULE CODE:
OPEN SOURCE CODING (INTERMEDIATE)	OPSC7312

ASSESSMENT TYPE: POE (PAPER)

TOTAL MARK ALLOCATION: 300 MARKS

TOTAL HOURS: A minimum of 45 HOURS is suggested to complete this assessment

By submitting this assignment, you acknowledge that you have read and understood all the rules as per the terms in the registration contract, in particular the assignment and assessment rules in The IIE Assessment Strategy and Policy (IIE009), the intellectual integrity and plagiarism rules in the Intellectual Integrity and Property Rights Policy (IIE023), as well as any rules and regulations published in the student portal.

INSTRUCTIONS:

1. ***No material may be copied from original sources, even if referenced correctly, unless it is a direct quote indicated with quotation marks. No more than 10% of the assignment may consist of direct quotes.***
2. ***Please ensure that you submit your assignment through SafeAssign.***
3. ***Make a copy of your assignment before handing it in.***
4. ***Assignment must be pushed to GitHub.***
5. *Assignments must be typed unless otherwise specified.*
6. *Begin each section on a new page.*
7. *Follow all instructions on the PoE cover sheet.*
8. *This is a group assignment.*

Referencing Rubric

Providing evidence based on valid and referenced academic sources is a fundamental educational principle and the cornerstone of high-quality academic work. Hence, The IIE considers it essential to develop the referencing skills of our students in our commitment to achieve high academic standards. Part of achieving these high standards is referencing in a way that is consistent, technically correct and congruent. This is not plagiarism, which is handled differently.

Poor quality formatting in your referencing will result in a penalty **of** according to the following guidelines **a maximum of ten percent being deducted from the overall percentage**. Please note, however, that **evidence of plagiarism in the form of copied or uncited work (not referenced), absent reference lists, or exceptionally poor referencing, may result in action being taken in accordance with The IIE's Intellectual Integrity Policy (0023)**.

Markers are required to provide feedback to students by indicating **(circling/underlining) the information that best describes the student's work.**

Minor technical referencing errors: 5% deduction from the overall percentage. – the student's work contains **five or more errors** listed in the minor errors column in the table below.

Major technical referencing errors: 10% deduction from the overall percentage. – the student's work contains **five or more errors** listed in the major errors column in the table below**.**

If both minor and major errors are indicated, **then 10% only** (and not 5% or 15%) is deducted from the overall percentage. The examples provided below are not exhaustive but are provided to illustrate the error.

Required: **Technically correct referencing style**	**Minor errors in technical correctness of referencing style** **Deduct 5% from overall percentage.** **Example: if the response receives 70%, deduct 5%. The final mark is 65%.**	**Major errors in technical correctness of referencing style** **Deduct 10% from the overall percentage.** **Example: if the response receives 70%, deduct 10%. The final mark is 60%.**
Consistency The same referencing format has been used for all in-text references and in the bibliography/reference list.	**Minor inconsistencies.** The referencing style is generally consistent, but there are one or two changes in the format of in-text referencing and/or in the bibliography. For example, page numbers for direct quotes (in-text) have been provided for one source, but not in another instance. Two book chapters (bibliography) have been referenced in the bibliography in two different formats.	**Major inconsistencies.** Poor and inconsistent referencing style used in-text and/or in the bibliography/ reference list. Multiple formats for the same type of referencing have been used. For example, the format for direct quotes (in-text) and/or book chapters (bibliography/ reference list) is different across multiple instances.
Technical correctness Referencing format is technically correct throughout the submission. The correct referencing format for the **discipline** has been used, i.e., either **APA,** OR **Harvard** OR **Law** Position of the reference: a reference is directly associated with every concept or idea. For example, quotation marks, page numbers, years, etc. are applied correctly, sources in the bibliography/reference list are correctly presented.	**Generally, technically correct with some minor errors.** The correct referencing format has been consistently used, but there are one or two errors. Concepts and ideas are typically referenced, but a reference is missing from one small section of the work. Position of the references: references are only given at the beginning or end of every paragraph. For example, the student has incorrectly presented direct quotes (in-text) and/or book chapters (bibliography/reference list).	**Technically incorrect.** The referencing format is incorrect. Concepts and ideas are typically referenced, but a reference is missing from small sections of the work. Position of the references: references are only given at the beginning or end of large sections of work. For example, incorrect author information is provided, no year of publication is provided, quotation marks and/or page numbers for direct quotes missing, page numbers are provided for paraphrased material, the incorrect punctuation is used (in-text); the bibliography/reference list is not in alphabetical order, the incorrect format for a book chapter/journal article is used, information is missing e.g. no place of publication had been provided (bibliography); repeated sources on the reference list.
Congruence between in-text referencing and bibliography/ reference list All sources are accurately reflected and are all accurately included in the bibliography/ reference list.	**Generally, congruence between the in-text referencing and the bibliography/ reference list with one or two errors.** There is largely a match between the sources presented in-text and the bibliography. For example, a source appears in the text, but not in the bibliography/ reference list or vice versa.	**A lack of congruence between the in-text referencing and the bibliography.** No relationship/several incongruencies between the in-text referencing and the bibliography/reference list. For example, sources are included in-text, but not in the bibliography and vice versa, a link, rather than the actual reference is provided in the bibliography.
In summary: the recording of references is accurate and complete.	In summary, at least **80%** of the sources are correctly reflected and included in a reference list.	In summary, at least **60%** of the sources are incorrectly reflected and/or not included in reference list.

Overall Feedback about the consistency, technical correctness and congruence between in-text referencing and bibliography:
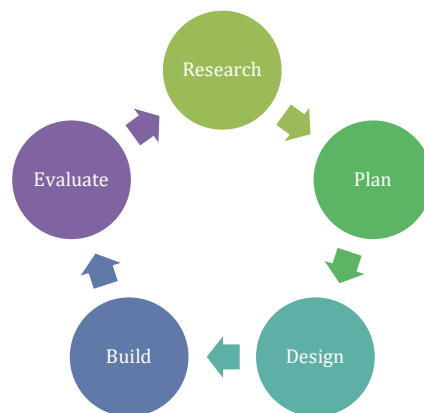
Background

This portfolio of evidence comprises two parts submitted during the semester and the finalisation of your POE, each of which takes you through conceptualising, designing, and building a mobile application.

You are going to create an app of **your choice** for a change. The app must make use of an **API** that you create yourself, utilising the knowledge learned in PROG7311, PROG7312, CLDV6212/APPR6212*, and APDS7312. The app must include the stated features described in the introduction section below.

Finally, the app will need to be prepared so that it can be published on the Google Play Store, as well as making use of unit testing and GitHub actions for running the necessary tests.

To be able to create the app, you will need to use all the techniques you learned during this course, as well as do your research on how to complete some of the tasks required of you. It is also critical that you approach the project in a methodical and planned manner. For this reason, the project will follow a Research – Plan – Design – Build – Evaluate cycle:

This POE will run for one full cycle. After one full cycle, you can always restart the process to refine your app further.

The different phases of the cycle will be related to the different tasks as follows:

- **Part 1: Research, Planning and Design**

- **Part 2: Build**

- **Final POE: Build and Evaluate**

Introduction

Each of the below parts builds on top of the other. Be sure to complete or update one part before moving on to the next. Each part will be individually assessed by your lecturer, and feedback for each part will be provided.

The exact features, design, and layout of your app are up to you, but each app must be able to complete at least the following features:

- The user must be able to **register** and **log in** to the app using single sign-on (**SSO**).

- Make use of **Biometric Authentication**: Implement fingerprint or facial recognition for secure user authentication. **(POE only)**

- The user must be able to change their **settings** in the app.

- Connect to a **REST API** you create that is connected to a database.

- **Offline mode** with Sync: Create a feature that allows users to perform actions offline with synchronisation capabilities once they reconnect. This does not need to be the whole app, but at least some features. Can make use of RoomDB or SQL Lite **(POE only)**

- Implementation of **Real-time Notification**: Implement a push notification system for real-time updates and alerts **(POE only)**

- **Multi-language** support that includes at least 2 South African Languages **(POE only)**

These features are the **minimum** that's required. Your app also needs to work **logically** and be **easy to use**. Speak to your lecturer about how your app can best implement all these features.

Part 1 — Research, Planning and Design   **(Marks: 100)**

Learning Unit 1

At the end of this specific part, students should be able to:

- Explain how to connect to a RESTful Application Programming Interface (API).

- Define the features that the app will include.

- Define the use case of their app.

This part is composed of two sections, weighted equally:

- Research

- Planning and design

Research   **(Marks: 50)**

For this part, you are required to research **three** existing apps that are similar to the one you want to create and are available on the Android operating system. You will need to present your findings in the form of a **report (2000 to 2500 words)** with the following sections:

- Introduction
- Research on each app including:
  - Overview of the app
  - Strengths and weaknesses of the app
  - How you think the app was implemented based on your knowledge of Android Studio App development
  - Screenshots of the app
- A comparison of all three apps
- A list of the best features of all the apps that you want to use in your final app
- Conclusion
- References

The information **must be submitted in the form of a report**. Make sure you **reference** this part correctly.

  - Make sure that the size of the PDF file does not exceed 10MB.
  - Please note that if you don't find an app that matches exactly, then look for one that matches at least some of the features.

Planning and Design	**(Marks: 50)**

For this part, you will need to design your app fully. The purpose of this part is to ensure you know exactly what you need to build and how you will build it before you start with part 2. You will need to present your design as a typed PDF document (2000 to 2500 words) with the following sections:

- Introduction

- A brief overview of the app, including a name for the app, an initial icon design, and a description of the innovative features that you are planning to include.

- A detailed list of the requirements for the app.

The requirements must include all the **minimum requirements** from this document, but you must elaborate on each of those requirements **rather than just copying them.** Remember to add the features that you want to include, for example, gamification. The requirements must be **detailed enough** for someone else to be able to build your app by just reading this document! You need to make these clear since you will be marked on these for part 2 and the POE.

- User interface design, including a mockup for each screen, a description of the purpose of the screen, and a diagram showing how the user navigates between the various screens.

- Design what your API will do for your application and what data it will send and receive. Also, state how you are going to be creating your API and what hosting will be used.

- UML diagrams that include how the API is connected and other systems to the application.

- Detailed listing of the data that the app needs to capture from the user and store, including data types.

- Project plan detailing deadlines and milestones for the project in the format of a Gantt chart. Break down the tasks into smaller tasks than just "implement the prototype". Include some time for testing and bug fixing.

- Conclusion

- References

Maximum Word Count: 2500

Submit the following for Part 1 :

- **Research Report** in PDF format

- **Planning and design document** in PDF format

- If applicable, **a short writeup** (maximum 500 words) on the manner in which **AI tools were used and cited** during the completion of this assessment. Examples could include code snippets, debugging errors, image generation, etc.

Part 2 – App Prototype Development   **(Marks: 100)**

Learning Units 1 and 2

At the end of this specific part, students should be able to:

- *Use a RESTful API in an Android app.*

- *Use an external library to solve a programming problem.*

- *Connect an app to an appropriate SDK.*

- Conduct detailed unit testing.

For this part, you will need to build a fully working prototype. This prototype needs to include all the features listed in the instructions section of this document **(except for the requirements marked for the POE)** based on your own design and user interface layout. The app must compile and run for marks to be awarded for the app's features.

Some of the features specified in your design document can be deferred until the final POE submission, but you need to include at least a few of them for part 2. And final assets (for example, images) do not need to be included in the prototype.

You must create a demonstration video showing the prototype running on your mobile phone. For the video, make sure that you show the app performing the following functions:

- The user must be able to register and log in to the app using single sign-on (SSO)

- The user must be able to change their settings in the app.

- Connect to a REST API you created that is connected to your database. Remember, this will need to be hosted to connect to your application. You may use anything for this.

- Your features that were specified in part 1. Look at the rubric to see the weighting.

Include in the demonstration video that will effectively demonstrate all the features of the app and be fully professional. The video must include a voice-over explaining what you are showing. The video must also show what data is stored in the online hosted authentication service, API, and database.

The app must have a user-friendly and appropriate user interface that can handle invalid inputs made by the user without crashing. The app must work only with minor bugs and errors.

Version Control with GitHub: Initialize the repository with a **README file**. **Commit** and **push** your project files to the **GitHub repository**. Regularly commit and push your code as you make progress.

Conduct automated testing on the main functionality of your app. Make use of **GitHub actions** to run tests and build your code to make sure it will work on not just your computer. Use this guide that will assist in creating this:

* https://github.com/marketplace/actions/automated-build-android-app-with-github-action
* *https://github.com/IMAD5112/Github-actions/blob/main/.github/workflows/build.yml*

Documentation:

Prepare a comprehensive report detailing the purpose of the app, its design considerations and the utilisation of GitHub and GitHub Actions. Include all of this inside your **readme file inside GitHub**. Add images and make the readme file your own.

Submission:

For your submission, present the following:

* The complete Kotlin source code for the Android app needs to be submitted on GitHub. ***No zip files are allowed***
* Add comments to your code, and don't forget to reference it.
* Make use of logging to show your understanding of your code.
* Your readme file for your app that is also on GitHub.
* A Video presentation showcasing all the app's features. Include a link to this video in the readme file.
* If applicable, **a short writeup** (maximum 500 words) on the manner in which **AI tools were used and cited** during the completion of this assessment. Examples could include code snippets, debugging errors, image generation, etc.

You can upload your video to YouTube, make it unlisted, and add that link to your readme file. You can also use any video recording software you like. Just make sure to include a voice-over to show your understanding.

| POE — Final Asset Development, Additions, Tweaking and Final Submission   (Marks: 100) |

Learning Units 1 to 4

At the end of this specific part, students should be able to:

- *Use blob storage.*

- *Use a NoSQL database to store data.*

- *Use a NoSQL database to read data.*

- *Prepare an app for publication in the Play Store.*

The final app needs to run on a mobile phone and not an emulator. This means that you need to plan well in advance to record the required video on a mobile phone if you don't own an Android phone yourself.

For this submission, the app should be a fully working app without errors that has been updated based on the feedback your lecturer has provided you throughout the course. The app must **compile** and **run** for marks to be awarded for the app's features.

You must create a demonstration video showing the application is working. For the video, make sure that you show the app performing the following functions:

- The user must be able to **register** and **log in** to the app using single sign-on (**SSO**).

- Make use of **Biometric Authentication**: Implement fingerprint or facial recognition for secure user authentication. **(POE only)**

- The user must be able to change their **settings** in the app.

- Connect to a **REST API** you create that is connected to a database.

- **Offline mode** with Sync: Create a feature that allows users to perform actions offline with synchronisation capabilities once they reconnect. This does not need to be the whole app, but at least some features. Can make use of RoomDB or SQL Lite **(POE only)**

- Implementation of **Real-time Notification**: Implement a push notification system for real-time updates and alerts **(POE only)**

- **Multi-language** support that includes at least 2 South African Languages **(POE only)**

- Your features that were specified in part 1. Look at the rubric to see the weighting.

- An app icon and final image assets.

You may consult any resources of your choice to implement **biometrics and push notifications**. These resources may assist you:

- Biometrics: https://developer.android.com/codelabs/biometric-login#0 and https://developer.android.com/identity/sign-in/biometric-auth
- Push Notifications: https://firebase.google.com/docs/cloud-messaging

Include in the demonstration video that will effectively demonstrate all the features of the app and be fully professional. The video must include a voice-over explaining what you are showing. The video must also show what data is stored in the online hosted authentication service, API, and database.

The app must have a user-friendly and appropriate user interface that can handle invalid inputs made by the user without crashing. The app must be working.

Version Control with GitHub: Initialize the repository with a **README file**. **Commit** and **push** your project files to the **GitHub repository**. Regularly commit and push your code as you make progress. Since this is the final POE, make sure to Tag your final commit as the *Final POE.*

Conduct automated testing on the main functionality of your app. Make use of **GitHub actions** to run tests and build your code to make sure it will work on not just your computer. Use this guide that will assist in creating this:

- https://github.com/marketplace/actions/automated-build-android-app-with-github-action
- *https://github.com/IMAD5112/Github-actions/blob/main/.github/workflows/build.yml*

Documentation:

Prepare a comprehensive report detailing the purpose of the app, its design considerations and the utilisation of GitHub and GitHub Actions. Include all of this inside your **readme file inside GitHub**. Add images and make the readme file your own. Release notes need to be added as well, which list all the updates that have been made to the app since the prototype. The release notes must clearly explain which of your innovative features were added to this version.

Publishing:

The app will also need to be ready to be published on the Google Play Store. Bonus marks will be awarded if your app is approved for publication on the Google Play Store. Make sure that you plan

so that you can upload the app a few days before the deadline to the Google Play Store to allow for the Google Play Store approval process, which can take some time.

Submission:

For your submission, present the following:

- The complete Kotlin source code for the Android app needs to be submitted on GitHub. *No zip files are allowed*

- Add comments to your code, and don't forget to reference it.

- Make use of logging to show your understanding of your code.

- Your readme file for your app that is also on GitHub.

- A video presentation showcasing all the app's features. Include a link to this video in the readme file.

- Release notes that list all the updates that have been made to the app since the prototype. The release notes must clearly explain which of your innovative features were added to this version.

- Evidence of preparation for publication: signed APK, screenshots, and a screenshot of the app uploaded on the Google Play Console and/or published on the Google Play Store if applicable.

- If applicable, **a short writeup** (maximum 500 words) on the manner in which **AI tools were used and cited** during the completion of this assessment. Examples could include code snippets, debugging errors, image generation, etc.

You can upload your video to YouTube, make it unlisted, and add that link to your readme file. You can also use any video recording software you like. Just make sure to include a voice-over to show your understanding.

Assessment Sheet   **(Marking Rubric)**

Please note: Tear off this section and **attach** it to your work when you submit it/ If this is an online submission, then this information needs to be included in the online submission.

MODULE NAME:		MODULE CODE:
OPEN SOURCE CODING (INTERMEDIATE)		OPSC7312

STUDENT NAME:
STUDENT NUMBER:

PART 1 – Research					
Marking Criteria	**Does not meet the required standard**	**Meets the required standard**	**Partially exceeds the required standard**	**Greatly exceeds the required standard.**	**Feedback**
Research: Introduction **[5 Marks]**	• No introduction included. • The introduction does not link to the rest of the document.	• Acceptable and links to the rest of the document but does not explain the purpose of the research.	• Acceptable and links to the rest of the document with some details about the purpose of the research.	• An excellent introduction that explains the purpose of the research and the sections included in the document.	
	0 – 1 Marks	2 – 3 Marks	4 Marks	5 Marks	
Research: App 1 research **[8 Marks]**	• Not included or sections missing. • All sections are included, but limited details are provided.	• All sections are included, but more details could be added to most of the sections.	• All sections are included, but more details could be added to some of the sections.	• Comprehensive discussion between the strengths and weaknesses and motivating why features are considered innovative.	
	0 – 1 Marks	4– 5 Marks	6 Marks	7-8 Marks	

PART 1 – Research					
Marking Criteria	**Does not meet the required standard**	**Meets the required standard**	**Partially exceeds the required standard**	**Greatly exceeds the required standard.**	**Feedback**
Research: App 2 research **[8 Marks]**	• Not included or sections missing. • All sections are included, but limited details are provided.	• All sections are included, but more details could be added to most of the sections.	• All sections are included, but more details could be added to some of the sections.	• Comprehensive discussion differentiating between the strengths and weaknesses and motivating why features are considered innovative.	
	0 – 1 Marks	**4– 5 Marks**	**6 Marks**	**7-8 Marks**	
Research: App 3 research **[8 Marks]**	• Not included or sections are missing. • All sections are included, but limited details are provided.	• All sections are included, but more details could be added to most of the sections.	• All sections are included, but more details could be added to some of the sections.	• Comprehensive discussion differentiating between the strengths and weaknesses and motivating why features are considered innovative.	
	0 – 1 Marks	**4– 5 Marks**	**6 Marks**	**7-8 Marks**	
Research: Comparison **[10 Marks]**	• No comparison is included, nor is the comparison not in a visual format. • Comparison in a visual format but only includes either differences or similarities.	• Comparison in a visual format with a good number of similarities and differences, but the presentation could be improved.	• Comparison in a visual format with a good number of similarities and differences.	• Comprehensive comparison that shows all the differences and similarities at a glance.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	

PART 1 – Research					
Marking Criteria	**Does not meet the required standard**	**Meets the required standard**	**Partially exceeds the required standard**	**Greatly exceeds the required standard.**	**Feedback**
Research: List of features to include **[6 Marks]**	• No list of features included. • A very short list included with no motivations.	• A good list of features is included but with little or no motivation.	• A good list of features is included with some motivations.	• An excellent list of features with motivations included for why these features are desirable.	
	0 – 2 Marks	**3 – 4 Marks**	**5 Marks**	**6 Marks**	
Research: Conclusion **[5 Marks]**	• No conclusion included. Conclusion does not link to the rest of the document.	• Acceptable and links to the rest of the document.	• Acceptable and links to the rest of the document. The link to the design is mentioned but not elaborated on.	• An excellent conclusion that links to the document and the design.	
	0 – 1 Marks	**2 – 3 Marks**	**4 Marks**	**5 Marks**	
Planning and Design: Introduction and Conclusion **[5 Marks]**	• No introduction or conclusion included. • Either the introduction or conclusion is missing.	• A good introduction and conclusion are included, as well as links to the rest of the document.	• A good introduction and conclusion are included, as well as links to the rest of the document • Mention is made of the research document.	• An excellent introduction and conclusion that links to the research document as well as the content of the design document.	
	0 – 1 Marks	**2 – 3 Marks**	**4 Marks**	**5 Marks**	

PART 1 – Research					
Marking Criteria	**Does not meet the required standard**	**Meets the required standard**	**Partially exceeds the required standard**	**Greatly exceeds the required standard.**	**Feedback**
Planning and Design: Overview of the app **[10 Marks]**	• No overview is included, and no innovative features are mentioned. • The overview needs more details.	• A good overview is included with some innovative features.	• A good overview is included with some innovative features and an attempt to link to the rest of the document.	• An excellent overview that sets the stage for the rest of the document.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
Planning and Design: Detailed list of requirements **[10 Marks]**	• No requirements are included, and the required features are missing. • Only required features are included with some details, but no additional features from the research are mentioned.	• Required features and the student's requirements are included, but more details are needed in places.	• Required features and the student's requirements are included, with more detail needed only in a few places.	• An excellently detailed list of features that describes all the features, including the student's own from research in detail.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
Planning and Design: Creation of the Rest API **[10 Marks]**	• Little to no understanding of Rest API	• Some understanding of the implementation of making use of API with the flow on the UML somewhat correct	• Only UML created or detailed understanding of making use of a rest API to complete the application	• Good detailed understanding of how to make use of rest API to complete the application. • UML Diagram created showing the following	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	

PART 1 – Research					
Marking Criteria	**Does not meet the required standard**	**Meets the required standard**	**Partially exceeds the required standard**	**Greatly exceeds the required standard.**	**Feedback**
Planning and Design: User interface design **[10 Marks]**	• No design is included, and only a very brief description with no mockups is provided. • Only mockups or reasonably detailed descriptions included, not both	• Mockups and descriptions included, but no diagrams showing navigation	• Mockups and descriptions included, and navigation diagrams included with some missing details	• Excellent mockups together with descriptions and a diagram explaining the navigation	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
Planning and Design: Project Plan **[5 Marks]**	• No project plan included. • Project plan included but is not logical.	• Logical with some errors.	• Logical with only minor errors.	• Logical and fully detailed with no errors.	
	0 – 1 Marks	**2 – 3 Marks**	**4 Marks**	**5 Marks**	**Part 1 Total /100**

PART 2 – App Prototype Development					
Marking Criteria	Does not meet the required standard	Meets the required standard	Partially exceeds the required standard	Greatly exceeds the required standard	Feedback
The app runs on a mobile device. [5 Marks]	• App doesn't run at all. • The app runs, but lots of crashes happen.	• App runs with one or two errors or crashes. • Runs on the emulator	• The app runs with very infrequent errors or crashes.	• App runs without errors.	
	0 – 1 Marks	**2 – 3 Marks**	**4 Marks**	**5 Marks**	
Feature: SSO sign in [10 Marks]	• Feature not included. • Feature implemented but very buggy.	• Feature working mostly with some bugs.	• Feature working with only minor bugs.	• Feature excellently implemented.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
Feature: Settings menu that makes sense for the application [10 Marks]	• Feature not included. • Feature implemented but very buggy.	• Feature working mostly with some bugs.	• Feature working with only minor bugs.	• Feature excellently implemented.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
Creation of the Rest API [10 Marks]	• API not included. • API was created but very buggy.	• API working mostly with some bugs.	• API working with only minor bugs.	• API excellently created.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	

PART 2 – App Prototype Development					
Marking Criteria	**Does not meet the required standard**	**Meets the required standard**	**Partially exceeds the required standard**	**Greatly exceeds the required standard**	**Feedback**
Implementation of your Rest API in your app [10 Marks]	• Feature not included. • Feature implemented but very buggy.	• Feature working mostly with some bugs.	• Feature working with only minor bugs.	• Feature excellently implemented.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
Feature: User Defined 1 [10 Marks]	• Feature not included. • Feature implemented but very buggy.	• Feature working mostly with some bugs.	• Feature working with only minor bugs.	• Feature excellently implemented.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
Feature: User Defined 2 [10 Marks]	• Feature not included. • Feature implemented but very buggy.	• Feature working mostly with some bugs.	• Feature working with only minor bugs.	• Feature excellently implemented.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
Feature: User Defined 3 [10 Marks]	• Feature not included. • Feature implemented but very buggy.	• Feature working mostly with some bugs.	• Feature working with only minor bugs.	• Feature excellently implemented.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	

PART 2 – App Prototype Development					
Marking Criteria	Does not meet the required standard	Meets the required standard	Partially exceeds the required standard	Greatly exceeds the required standard	Feedback
User interface [10 Marks]	• Not user-friendly, confused, and illogical. • Somewhat user-friendly with lots of mistakes in the design.	• Mostly user-friendly, with some mistakes in the design. • Somewhat consistent use of layout, fonts, and colours.	• Mostly user-friendly, with some attempt made at making the capture process easier for the user. • Mostly consistent use of layout, fonts, and colours.	• Excellent and user-friendly design. • Completely consistent use of layout, fonts, and colours.	
	0 – 4 Marks	5 Marks	6 – 7 Marks	8 – 10 Marks	
Github, Readme and automated testing [10 Marks]	• Zip file added or file upload used for GitHub	• Multiple commits and unit testing not working • No readme file	• Automated testing includes but is not working correctly • Some what readme file created	• Readme file created and implemented correctly • Automated testing in place • Multiple commits	
	0 – 4 Marks	5 Marks	6 – 7 Marks	8 – 10 Marks	
Demonstration video [5 Marks]	• No demonstration video included. • Informal and unprepared, or not showing all the features or no voice-over included.	• It is not completely professional, but all features are demonstrated.	• Mostly professional with some issues, but all features demonstrated.	• Fully professional video showing all the required features in detail.	
	0 – 1 Marks	2 – 3 Marks	4 Marks	5 Marks	Part 2 Total /100

PORTFOLIO OF EVIDENCE (POE)					
Marking Criteria	**Does not meet the required standard**	**Meets the required standard**	**Partially exceeds the required standard**	**Greatly exceeds the required standard**	**Feedback**
The app runs on a mobile device. **[5 Marks]**	• App doesn't run at all. • The app runs, but lots of crashes happen.	• App runs with one or two errors or crashes. • Runs on the emulator	• The app runs with very infrequent errors or crashes.	• App runs without errors.	
	0 – 1 Marks	**2 – 3 Marks**	**4 Marks**	**5 Marks**	
Feature: Biometric Authentication **[10 Marks]**	• Feature not included. • Feature implemented but very buggy.	• Feature working mostly with some bugs.	• Feature working with only minor bugs.	• Feature excellently implemented.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
Feature: Offline mode **[10 Marks]**	• Feature not included. • Feature implemented but very buggy.	• Feature working mostly with some bugs.	• Feature working with only minor bugs.	• Feature excellently implemented.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
Feature: Real-time Notification **[10 Marks]**	• Feature not included. • Feature implemented but very buggy.	• Feature working mostly with some bugs.	• Feature working with only minor bugs.	• Feature excellently implemented.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	

PORTFOLIO OF EVIDENCE (POE)					
Marking Criteria	**Does not meet the required standard**	**Meets the required standard**	**Partially exceeds the required standard**	**Greatly exceeds the required standard**	**Feedback**
Feature: Multi-language **[10 Marks]**	• Feature not included. • Feature implemented but very buggy.	• Feature working mostly with some bugs.	• Feature working with only minor bugs.	• Feature excellently implemented.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
Feature: **User Defined 4** **[10 Marks]**	• Feature not included. • Feature implemented but very buggy.	• Feature working mostly with some bugs.	• Feature working with only minor bugs.	• Feature excellently implemented.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
Feature: **User Defined 5** **[10 Marks]**	• Feature not included. • Feature implemented but very buggy.	• Feature working mostly with some bugs.	• Feature working with only minor bugs.	• Feature excellently implemented.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
The app has been prepared for publication in the Play Store. **[5 Marks]**	• No preparation has been done. • No evidence of preparation has been submitted. • The app is not ready for publication.	• The minimum requirements for Play Store publication are met.	• The minimum requirements for Play Store publication are met. • Some additional material is included.	• The app is completely ready to be published to the Play Store. • All material, including screenshots for the Play Store, are included.	
	0 – 1 Marks	**2 – 3 Marks**	**4 Marks**	**5 Marks**	

PORTFOLIO OF EVIDENCE (POE)					
Marking Criteria	**Does not meet the required standard**	**Meets the required standard**	**Partially exceeds the required standard**	**Greatly exceeds the required standard**	**Feedback**
AI-use writeup **[5 Marks]**	• Writeup not included.	• Writeup included, but the detail provided is vague.	• Writeup does not include details of how AI was used and cited.	• A detailed writeup which includes information on how it was used and cited. • Mark may be awarded if AI is not used at all.	
	0 – 1 Marks	**2 – 3 Marks**	**4 Marks**	**5 Marks**	
User interface **[10 Marks]**	• Not user-friendly, confused, and illogical. • Somewhat user-friendly with lots of mistakes in the design.	• Mostly user-friendly, with some mistakes in the design. • Somewhat consistent use of layout, fonts, and colours.	• Mostly user-friendly, with some attempt made at making the capture process easier for the user. • Mostly consistent use of layout, fonts, and colours.	• Excellent and user-friendly design. • Completely consistent use of layout, fonts, and colours.	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	
GitHub, Readme and automated testing **[10 Marks]**	• Zip file added or file upload used for GitHub	• Multiple commits and unit testing not working • No readme file	• Automated testing includes but is not working correctly • Some what readme file created	• Readme file created and implemented correctly • Automated testing in place • Multiple commits	
	0 – 4 Marks	**5 Marks**	**6 – 7 Marks**	**8 – 10 Marks**	

PORTFOLIO OF EVIDENCE (POE)					
Marking Criteria	Does not meet the required standard	Meets the required standard	Partially exceeds the required standard	Greatly exceeds the required standard	Feedback
Demonstration video [5 Marks]	• No demonstration video included. • Informal and unprepared, or not showing all the features or no voice-over included.	• It is not completely professional, but all features are demonstrated.	• Mostly professional with some issues, but all features demonstrated.	• Fully professional video showing all the required features in detail.	
	0 – 1 Marks	2 – 3 Marks	4 Marks	5 Marks	
Bonus marks: Published on the Google Play Store [5 Marks]	• App has not been published on the Google Play Store.	• The app has been uploaded to the Google Play Store but has not yet been approved for publishing. • Some screenshots are included with the upload.	• The app has been uploaded to the Google Play Store but has not yet been approved for publishing. • A good number of screenshots are included with the upload.	• The app has been uploaded to the Google Play Store and was approved for publishing.	
	0 – 1 Marks	2 – 3 Marks	4 Marks	5 Marks	POE Total /100

[TOTAL MARKS: 300]