



<b>MODULE NAME:</b>	<b>MODULE CODE:</b>
<b>OPEN SOURCE CODING (INTRODUCTION)</b>	<b>OPSC7311</b>

**ASSESSMENT TYPE: POE (PAPER )**

**TOTAL MARK ALLOCATION: 100 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 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. ***Make a copy of your assignment before handing it in.***
3. ***Assignments must be typed unless otherwise specified.***
4. ***All work must be adequately and correctly referenced.***
5. ***Begin each section on a new page.***
6. ***Follow all instructions on the assignment cover sheet.***
7. ***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 **a maximum of ten percent being deducted from the percentage awarded**, according to the following guidelines. 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

<b>Required:</b> Technically correct referencing style	<b>Minor errors in technical correctness of referencing style</b> Deduct 5% from percentage awarded	<b>Major errors in technical correctness of referencing style</b> Deduct 10% from percentage awarded
<u>Consistency</u> <ul style="list-style-type: none"> <li>The same referencing format has been used for all in-text references and in the bibliography/reference list.</li> </ul>	Minor inconsistencies. <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	Major inconsistencies. <ul style="list-style-type: none"> <li>Poor and inconsistent referencing style used in-text and/or in the bibliography/ reference list.</li> <li>Multiple formats for the same type of referencing have been used.</li> <li>For example, the format for direct quotes (in-text) and/or book chapters (bibliography/ reference list) is different across multiple instances.</li> </ul>
<u>Technical correctness</u> <ul style="list-style-type: none"> <li>Referencing format is technically correct throughout the submission.</li> <li>Position of the reference: a reference is directly associated with every concept or idea.</li> <li>For example, quotation marks, page numbers, years, etc. are applied correctly, sources in the bibliography/reference list are correctly presented.</li> </ul>	Generally, technically correct with some minor errors. <ul style="list-style-type: none"> <li>The correct referencing format has been consistently used, but there are one or two errors.</li> <li>Concepts and ideas are typically referenced, but a reference is missing from one small section of the work.</li> <li>Position of the references: references are only given at the beginning or end of every paragraph.</li> <li>For example, the student has incorrectly presented direct quotes (in-text) and/or book chapters (bibliography/reference list).</li> </ul>	Technically incorrect. <ul style="list-style-type: none"> <li>The referencing format is incorrect.</li> <li>Concepts and ideas are typically referenced, but a reference is missing from small sections of the work.</li> <li>Position of the references: references are only given at the beginning or end of large sections of work.</li> <li>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.</li> </ul>
<u>Congruence between in-text referencing and bibliography/ reference list</u> <ul style="list-style-type: none"> <li>All sources are accurately reflected and are all accurately included in the bibliography/ reference list.</li> </ul>	Generally, congruence between the in-text referencing and the bibliography/ reference list with one or two errors. <ul style="list-style-type: none"> <li>There is largely a match between the sources presented in-text and the bibliography.</li> <li>For example, a source appears in the text, but not in the bibliography/ reference list or vice versa.</li> </ul>	A lack of congruence between the in-text referencing and the bibliography. <ul style="list-style-type: none"> <li>No relationship/several incongruencies between the in-text referencing and the bibliography/reference list.</li> <li>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.</li> </ul>
<b>In summary:</b> the recording of references is accurate and complete.	In summary, at least <b>80%</b> of the sources are correctly reflected and included in a reference list.	In summary, at least <b>60%</b> 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:

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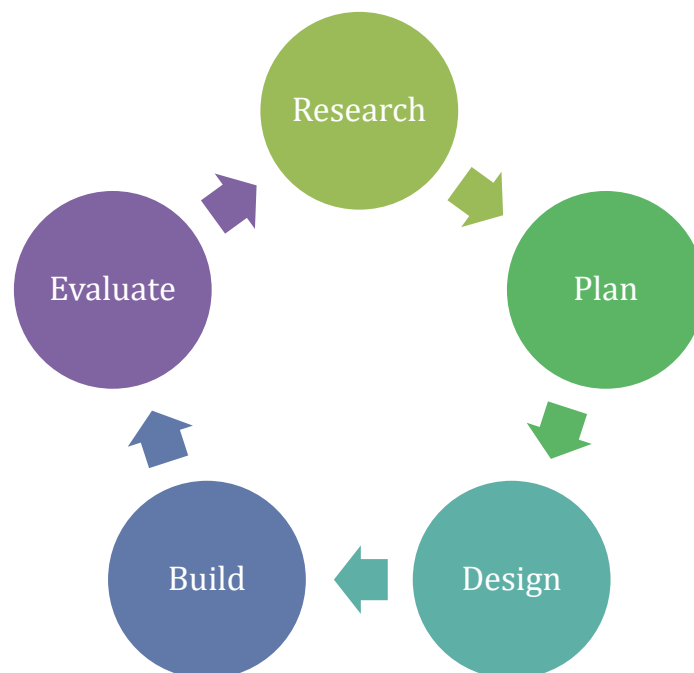
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### Portfolio of Evidence (PoE) — Background

This portfolio of evidence comprises of 2 tasks and the finalisation of your POE, each of which takes you through the process of conceptualising, designing, and building a mobile app.

You and your team need to create an app that helps the user to **manage** a **collection** of **physical objects**, such as books or stamps or figurines. The app must allow the user to **capture** the details of the **objects** in their collection and display the information in a **visually appealing manner**.

To be able to create the app your team will need to use all the techniques you learnt during this course as well as doing your own 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 further refine your app.

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

**Task 1: Research, Planning and Design**

**Task 2: Build**

**Final POE: Build and Evaluate**

## Instructions

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

The exact features, design and layout of your app is up to you. You may choose to build a **generic** app that can be used for **any kind of collection**, or a specific app that is tailored to a **collectable** of **your choosing**. Consider adding some **gamification** features to the app.

In the final submission, the app must be able to complete the **at least** following tasks:

- The user must be able to **log in** to the app using a username and password.
- The user must be able to **create categories** that their collectables can belong to.
- The user must be able to set a **goal** for the **number of items** that they want to own in each **category**.
- The user must be able to **add new items** to their collection, specifying at least the category, description and (if known) the date of acquisition of each item.
- The user must be able to **view a list** of all the items in the collection.
- The user must be able to **take** and **store a photograph** of each item.
- The user must be able to view a **graph** showing the percentages of items in each category (final POE only).
- The app must display in a **visual format** how close the user is to **reaching** their **goals** for the various categories (final POE only).
- The data must be stored in an **online database** (final POE only).

These features are the **minimum** that's required for the final submission. Your app also needs to work logically and be easy to use.

The tasks will be evaluated according to the **rubrics** at the end of the document. Make sure that you understand what is expected by reading carefully through these rubrics!

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

This task is composed of two sections, weighted equally:

- Research;
- Planning and design.

It is recommended that you create two separate documents for the submission.

**Research****(Marks: 50)**

For this task you are required to research three existing collection management apps that are available for the Android operating system. You will need to present your findings in the form of a typed PDF document (1500 to 2000 words), containing the following sections:

- Introduction;
- Research on each of the apps including:
  - Overview of the app, including screenshots with descriptions;
  - Strengths and weaknesses of the app;
  - Innovative features of the app.
- A visual (infographic) comparison of all three apps;
- A list of the best features from all the apps that you want to include in your app;
- Conclusion;
- References.

Make sure you **reference** correctly for this task. See the referencing rubric at the beginning of this document. You are required to reference **multiple sources** for **each app** that you are researching, to ensure that you have a **balanced view** of the app.

Make sure that the infographic is sized so that the text is readable.

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

For this task you will need to fully design your app. The purpose of this task is to ensure you know exactly what you need to build and how you will build it before you start with the implementation of the prototype.

The design needs to link back to the research, since the purpose of the research is to inform the design.

You will need to present your design as a typed PDF document (1000 to 1500 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. And remember to add your own 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!
- **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.
- **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.

**Task 2 — App Prototype Development****(Marks: 100)**

For this task 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 but based on your own design and user interface layout.

You must create a **demonstration video** showing the prototype running in an **emulator**. For the video, make sure that you show the app performing the following functions:

- The user must be able to **log in** to the app using a username and password;
- The user must be able to **create categories** that their collectables can belong to;
- The user must be able to set a **goal** for the **number of items** that they want to own in each **category**;
- The user must be able to **add new items** to their collection, specifying at least the category, description and (if known) the date of acquisition of each item;
- The user must be able to **view a list** of all the items in the collection;
- The user must be able to **take** and **store a photograph** of each item.

The **demonstration video** must effectively demonstrate the features of the app and be fully **professional**. The video must include a **voice over** explaining what you are showing.

The app must have a user **friendly** and **appropriate user interface**, that is able to handle **invalid inputs** made by the user without crashing. The app must be working with only **minor bugs** and errors.

Submit a **zipped copy** of your **source code** together with the **demonstration video**.

**Portfolio of Evidence — Final App Development****(Marks: 100)**

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 the final submission of the app, you need to include the following features, that were not required for the prototype:

- The user must be able to view a **graph** showing the percentages of items in each category (final POE only);
- The app must display in a **visual format** how close the user is to **reaching** their **goals** for the various categories (final POE only);
- The data must be stored in an **online database** (final POE only).

In addition to these features you must have:

- **Your own features** as described in your design document.
- An **app icon** and final **image assets**.

You must create a **demonstration video** that effectively demonstrates the features of the app running on a **mobile phone** and it must be fully **professional**. The video must include a **voice over** explaining what you are showing, and it must show that the data is **stored online**.

**Tip:** OBS (Open Broadcaster Software) is free and open-source software that allows great flexibility for adding audio to a video recorded with a screen recorded on your phone!

**Update** your **research** and **design documents** according to the feedback that you received in Task 1, as well as to reflect your app as implemented.

Submit the following:

- Zipped copy of the **source code**;
- Updated research and design **documents**;
- **Demonstration video**.



**Appendix A**

## Assessment Sheet (Marking Rubric)

**Please note:** Tear off this section and **attach** it to your work when you submit it.

<b>MODULE NAME:</b>	<b>MODULE CODE:</b>
<b>OPEN SOURCE CODING (INTRODUCTION)</b>	<b>OPSC7311</b>

<b>STUDENT NAME:</b>
<b>STUDENT NUMBER:</b>

TASK 1	Levels of Achievement				Student Mark	Feedback
Aspect	Excellent	Good	Developing	Poor		
	Score Ranges Per Level (½ marks possible)					
Research: Introduction	5 An excellent introduction that explains the purpose of the research and the sections included in the document	3—4 Acceptable and links to the rest of the document, but doesn't explain the purpose of the research	1—2 Introduction doesn't link to the rest of the document	0 No introduction included		

TASK 1	Levels of Achievement				Student Mark	Feedback
Aspect	Excellent	Good	Developing	Poor		
	Score Ranges Per Level (½ marks possible)					
<b>Research:</b> App 1 research	<b>7—8</b> Excellent, comprehensive discussion clearly differentiating between and the strengths and weaknesses and motivating why features are considered innovative	<b>5—6</b> All sections included, but more details could be added to some of the sections	<b>3—4</b> All sections are included but limited details are provided in each section	<b>0—2</b> Not included or sections missing		
<b>Research:</b> App 2 research	<b>7—8</b> Excellent, comprehensive discussion clearly differentiating between and the strengths and weaknesses and motivating why features are considered innovative	<b>5—6</b> All sections included, but more details could be added to some of the sections	<b>3—4</b> All sections are included but limited details are provided in each section	<b>0—2</b> Not included or sections missing		

TASK 1	Levels of Achievement				Student Mark	Feedback
Aspect	Excellent	Good	Developing	Poor		
	Score Ranges Per Level (½ marks possible)					
<b>Research:</b> App 3 research	<b>7—8</b> Excellent, comprehensive discussion clearly differentiating between and the strengths and weaknesses and motivating why features are considered innovative	<b>5—6</b> All sections included, but more details could be added to some of the sections	<b>3—4</b> All sections are included but limited details are provided in each section	<b>0—2</b> Not included or sections missing		
<b>Research:</b> Comparison	<b>9—10</b> An excellent, comprehensive comparison that shows all the differences and similarities at a glance	<b>7—8</b> Comparison in a visual format with a good number of similarities and differences	<b>4—6</b> Comparison in a visual format but only includes either differences or similarities	<b>0—3</b> No comparison included or comparison not in a visual format		

TASK 1	Levels of Achievement				Student Mark	Feedback
Aspect	Excellent	Good	Developing	Poor		
	Score Ranges Per Level (½ marks possible)					
<b>Research:</b> List of features to include	<b>5—6</b> An excellent list of features with motivations included for why these features are desirable	<b>3—4</b> A good list of features is included but with little or no motivations	<b>1—2</b> A very short list included with no motivations	<b>0</b> No list of features included		
<b>Research:</b> Conclusion	<b>5</b> An excellent conclusion that links to the document and to the design	<b>3—4</b> Acceptable and links to the rest of the document	<b>1—2</b> Conclusion doesn't link to the rest of the document	<b>0</b> No conclusion included		
<b>Research References:</b> Subtract marks for incorrect referencing in the research document, according to the referencing rubric.						

TASK 1	Levels of Achievement				Student Mark	Feedback
Aspect	Excellent	Good	Developing	Poor		
	Score Ranges Per Level (½ marks possible)					
<b>Planning and Design:</b> Introduction and conclusion	<b>5</b> An excellent introduction and conclusion that clearly links to the research document as well as the content of the design document	<b>3—4</b> A good introduction and conclusion included that links to the rest of the document	<b>1—2</b> Either introduction or conclusion is missing	<b>0</b> No introduction or conclusion included		
<b>Planning and Design:</b> Overview of the app	<b>9—10</b> An excellent overview that sets the stage for the rest of the document	<b>7—8</b> A good overview is included with some innovative features	<b>4—6</b> The overview needs more details	<b>0—3</b> No overview included or no innovative features mentioned		

TASK 1	Levels of Achievement				Student Mark	Feedback
Aspect	Excellent	Good	Developing	Poor		
	Score Ranges Per Level (½ marks possible)					
<b>Planning and Design:</b> Detailed list of requirements	<b>13—15</b> An excellently detailed list of features that describes all the features including the student’s own from research in detail	<b>9—12</b> Required features as well as the student’s own requirements included, but needs more detail in places	<b>4—8</b> Only required features are included with some details, but no additional features from research mentioned	<b>0—3</b> No requirements included or required features are missing		
<b>Planning and Design:</b> User interface design	<b>13—15</b> Excellent mockups together with descriptions and a diagram explaining navigation	<b>9—12</b> Mockups and descriptions included but not diagram showing navigation	<b>4—8</b> Only mockups or only reasonably detailed descriptions included, not both	<b>0—3</b> No design included or only very brief descriptions with no mockups		
<b>Planning and Design:</b> Project Plan	<b>5</b> Logical and fully detailed with no errors	<b>3—4</b> Logical with minor errors	<b>1—2</b> Not logical	<b>0</b> No project plan included		
TASK 1 SUBTOTAL						/100

TASK 2	Levels of Achievement				Student Mark	Feedback
Aspect	Excellent	Good	Developing	Poor		
	Score Ranges Per Level (½ marks possible)					
App runs in emulator	<b>8—10</b> App runs without errors	<b>5—7</b> App runs with one or two errors or crashes	<b>1—4</b> App runs but lots of crashes happen	<b>0</b> App doesn’t run at all		
Feature: Log in	<b>8—10</b> Feature excellently implemented	<b>5—7</b> Feature working mostly with some bugs	<b>1—4</b> Feature implemented but very buggy	<b>0</b> Feature not included		
Feature: Create category	<b>8—10</b> Feature excellently implemented	<b>5—7</b> Feature working mostly with some bugs	<b>1—4</b> Feature implemented but very buggy	<b>0</b> Feature not included		
Feature: Set category goal	<b>8—10</b> Feature excellently implemented	<b>5—7</b> Feature working mostly with some bugs	<b>1—4</b> Feature implemented but very buggy	<b>0</b> Feature not included		
Feature: Add an item	<b>8—10</b> Feature excellently implemented	<b>5—7</b> Feature working mostly with some bugs	<b>1—4</b> Feature implemented but very buggy	<b>0</b> Feature not included		

TASK 1	Levels of Achievement				Student Mark	Feedback
Aspect	Excellent	Good	Developing	Poor		
	Score Ranges Per Level (½ marks possible)					
Feature: View list of all items	8—10 Feature excellently implemented	5—7 Feature working mostly with some bugs	1—4 Feature implemented but very buggy	0 Feature not included		
Feature: take and a store photograph of each item	8—10 Feature excellently implemented	5—7 Feature working mostly with some bugs	1—4 Feature implemented but very buggy	0 Feature not included		
User interface	16—20 Excellent and user-friendly design	9—15 Mostly user friendly with some mistakes in the design	4—8 Somewhat user friendly with lots of mistakes in the design	0—3 Not user friendly, confused, and illogical		
Demonstration video	8—10 Fully professional video showing all the required features in detail	5—7 Not completely professional but all features demonstrated	1—4 Informal and unprepared, or not showing all the features or no voice over included	0 No demonstration video included		
TASK 2 SUBTOTAL						/100



POE	Levels of Achievement				Student Mark	Feedback
Aspect	Excellent	Good	Developing	Poor		
	Score Ranges Per Level (½ marks possible)					
App runs on mobile phone	<b>8—10</b> App runs without errors	<b>5—7</b> App runs with one or two errors or crashes	<b>1—4</b> App runs but lots of crashes happen	<b>0</b> App doesn't run at all		
Feature: Percentage in each category graph	<b>8—10</b> Feature excellently implemented	<b>5—7</b> Feature working mostly with some bugs	<b>1—4</b> Feature implemented but very buggy	<b>0</b> Feature not included		
Feature: Showing goal progress	<b>8—10</b> Feature excellently implemented	<b>5—7</b> Feature working mostly with some bugs	<b>1—4</b> Feature implemented but very buggy	<b>0</b> Feature not included		
Feature: Data stored in online database	<b>8—10</b> Feature excellently implemented	<b>5—7</b> Feature working mostly with some bugs	<b>1—4</b> Feature implemented but very buggy	<b>0</b> Feature not included		
Features specified in the design document implemented	<b>16—20</b> Features excellently implemented	<b>8—15</b> Features working mostly with some bugs	<b>1—7</b> Features implemented but very buggy	<b>0</b> Features not included		

TASK 1	Levels of Achievement				Student Mark	Feedback
Aspect	Excellent	Good	Developing	Poor		
	Score Ranges Per Level (½ marks possible)					
User interface	8—10 Excellent and user-friendly design	5—7 Mostly user friendly with some mistakes in the design	1—4 Somewhat user friendly with lots of mistakes in the design	0 Not user friendly, confused, and illogical		
Document updates based on feedback	8—10 All feedback has been excellently addressed	5—7 Some updates have been made	1—4 Only minor updates have been made	0 No updates have been made or documents not included		
App updates based on feedback	8—10 All feedback has been excellently addressed	5—7 Some updates have been made	1—4 Only minor updates have been made	0 No updates have been made		
Demonstration video	8—10 Fully professional video showing all the required features in detail	5—7 Not completely professional but all features demonstrated	1—4 Informal and unprepared, or not showing all the features or no voice over included	0 No demonstration video included		
POE SUBTOTAL						/100

[TOTAL MARKS: 100]