

COMP 225 - Section 005

Team Project

Group 1

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Table of Contents

- Revision History

1. Introduction

1.1 Purpose

1.2 Document Conventions

1.3 Intended Audience and Reading Suggestions

1.4 Scope

1.5 References

2. Overall Description

2.1 Product Perspective

2.2 Product Features (Functions)

2.3 User Classes and Characteristics

2.4 Operating Environment

2.7 Assumptions and Dependencies

3. External Interface Requirements

3.1 User Interfaces

3.2 Hardware Interfaces

3.3 Software Interfaces

3.4 Use Cases

4. Functional Requirements

5. Non-functional Requirements

Appendix C Stakeholder Register

Appendix D Interview Questions

Appendix E Class Diagrams

- Revision History -

1. File Creation - January 22, 11:28 PM - Austin H
2. Template Import - January 22, 11:28 PM - Austin H
3. Modified 1.1 1.4 - January 23, 3:03 PM - Colin M
4. Modified 2.1 2.3 - January 24, 5:04 PM - Colin M
5. Deliverable 1 - January 25, 1:07 PM - Austin H, Colin M, Jeffrey S, Sepideh A
6. Section 1-3 - January 25, 2:12 PM - Austin H, Colin M, Sepideh A,
7. Modified 2.7 - January 25, 5:16 PM - Sepideh A
8. Modified 2.7 - January 25, 7:02 PM - Austin H, Sepideh A
9. Modified 2.4 2.7 - January 26, 9:11 AM - Austin H, Colin M
10. Modified 2.2 - January 26, 10:39 AM - Colin M, Jeffrey S
11. Modified Section 2 - January 27, 9:25 AM - Colin M, Melissa W
12. Typo - January 27, 10:36 AM - Colin M
13. Edits Section 1-3 - January 27, 12:29 PMZ - Austin H, Colin M, Jeffrey S, Melissa W, Sepideh A
14. Edits Section 1-3 - January 31, 2:30 PM - Austin H, Melissa W
15. Deliverable #2-3 - February 1, 12:33 PM - Austin H, Colin M, Jeffrey S, Melissa W, Sepideh A
16. Deliverable #3 - February 4, 8:22 PM - Austin H, Colin M, Jeffrey S, Melissa W
17. Deliverable #4 - February 8, 12:04 PM - Melissa W, Sepideh A
18. Edits Deliverable #3 - February 10, 3:28 PM - Austin H, Sepideh A
19. Title Page - February 10, 8:29 PM - Colin M, Melissa W
20. Title Page - February 10, 9:16 PM - Jeffrey S
21. Edit Deliverable #4 - February 11, 4:18 PM - Colin M, Sepideh A
22. Edit Deliverable #4 - February 11, 8:29 PM - Austin Hogan
23. Part B Deliverable #1 - February 16, 1:00 PM - All Team Members
24. Part B Deliverable #2 - February 17, 11:00 AM - Sepideh A
25. Table of Contents - February 19, 7:58 AM - Austin Hogan
26. Reassign Sections - February 19, 8:18 AM - Austin Hogan
27. Fix issues with sign-up/sign-in - February 19, 6:49 PM - Austin Hogan
28. Part B Deliverable #2 - February 22, 1:00 PM - All Team Members
29. Part B Deliverable #3 - February 24, 1:00 PM - All Team Members
30. Part B Deliverable #4 & #5 - March 9, 1:00 PM - All Team Members
31. Part B Deliverable #6 - March 16, 1:00 PM - All Team Members
32. Part B Editing - March 19, 1:00 PM - Sepideh A
33. Part B Editing - March 20, 1:00 PM - Austin H, Colin M
34. Part C Deliverable #1 - March 23, 1:00 PM - All Team Members
35. Part C Deliverable #1 Add Idle State - March 27, 4:00 PM - Austin Hogan
36. Part C Deliverable #2 - March 30, 1:00 PM - All Team Members

Assignment #1 (Part A) Project Scope and eliciting & specifying requirements

Due Fri week 4 at 23:59 (Total Marks: 10 points)

Four deliverables

Deliverable #1 (3 Marks) due week 2 for professor review and feedback Create an overall description for your problem domain/opportunity, fill in as appropriate the following:

Section 1 “Introduction” and sub sections:

1.1 Purpose:

This new software product addresses the challenges with keeping track of an extensive collection by collectors of items by providing a platform on which users can store, display and keep track of their physical collections digitally. This is version 1.0.0 and will be a self-contained project. It's an entire system dependent on: users having access to electronic devices, the WWW/internet, Amazon Web Services, our development team, resources and time. Assuming the aforementioned aspects of the project are continuously satisfied with the appropriate qualities and quantities, our project will be another system within the greater internet providing a service to users and digital consumers.

1.2 Document Conventions:

1- *Table of Acronyms used in the document:*

Acronyms	Description
WWW	World Wide Web
SQL	Sequential query language
DB	Database
API	Application Programming Interface
JSON/JASON	JavaScript Object Notation
UXD	User Experience Design
FE	Front End
BE	Back End

NDA	Non-disclosure Agreement
PHP	Personal Home Page / Hypertext Preprocessor
HTML	HyperText Mark-up Language
CSS	Cascading Style Sheets
JS	JavaScript
EOS	End of Support
AWS	Amazon Web Service
DNS	Domain Name System
RDS	Relational Database Service
CI/CD	Continuous Integration / Continuous Delivery
EAN	International Article Number (also known as European Article Number)

2- The use case numbering inherits from the first digit of the functional requirements.

1.3 Intended Audience and Reading Suggestions:

For the purposes of privacy this document should be limited to: Product Owner, Design Team, Prototype Developers, and Stakeholders. With patent pending and trademark awaiting approval this initial development phase will require strict adherence to the NDA agreement readers accepted before receiving access to this document. Any individual not with a signed NDA should not have access to this document.

1.4 Project Scope:

From books to movies, model cars to luxury cars - if it can be collected, most likely someone has a collection of it. Managing these collections can be tricky, as some collections could consist of hundreds of unique items. This application allows users to build a database consisting of their collected items and display it in an organized and efficient manner. The user simply uploads an image of the item and fills out a few required fields, and then the program will store the item to the users database. Alternatively, the user can search the platform database for their item, and add it to their collection - saving the need to upload their own information. Paired with that is an active marketplace allowing users to buy, sell and trade items with others.

1.5 References:

1. Android OS: [https://en.wikipedia.org/wiki/Android_\(operating_system\)](https://en.wikipedia.org/wiki/Android_(operating_system))
2. API JSON: <https://www.json.org/json-en.html>
3. BE PHP: <https://www.php.net/supported-versions.php>
4. Code Magic: <https://codemagic.io/start/>
5. Competition: <https://www.collectors.com/>
6. DNS Cloudflare: <https://www.cloudflare.com/>
7. FE Flutter: <https://flutter.dev/docs/resources/faq>
8. Flutter Versioning: <https://flutter.dev/docs/development/tools/sdk/release-notes/supported-platforms>
9. GitHub: <https://github.com/>
10. iOS: <https://en.wikipedia.org/wiki/iOS>
11. Linux OS: <https://en.wikipedia.org/wiki/Linux>
12. Mac OS: <https://en.wikipedia.org/wiki/MacOS>
13. Wikipedia: <https://en.wikipedia.org/wiki/Collecting>
14. Server AWS: <https://aws.amazon.com/>
15. AWS Web Hosting: <https://aws.amazon.com/websites/>
16. SQL DB Amazon Aurora: <https://aws.amazon.com/rds/aurora/>
17. Windows OS: https://en.wikipedia.org/wiki/List_of_Microsoft_operating_systems
18. EAN: https://en.wikipedia.org/wiki/International_Article_Number
19. Mobile Camera Interface: <https://pub.dev/packages/camera>
20. 1d or 2d Barcodes: https://pub.dev/packages/ai_barcode

Section 2 “Overall description” and sub sections:

2.1 Product Perspective:

This is a new software project that will utilize a cloud storage database to help collectors display and maintain their collections, as well as buy and sell collectible items through an online marketplace. Users will be able to have access to their collection database either through mobile, desktop or online web application. In addition, a master database will be generated through the addition of collectible items uploaded by the user. The master database will enable users to streamline adding items to their private database provided that item exists within the master database.

The database system will store the following information:

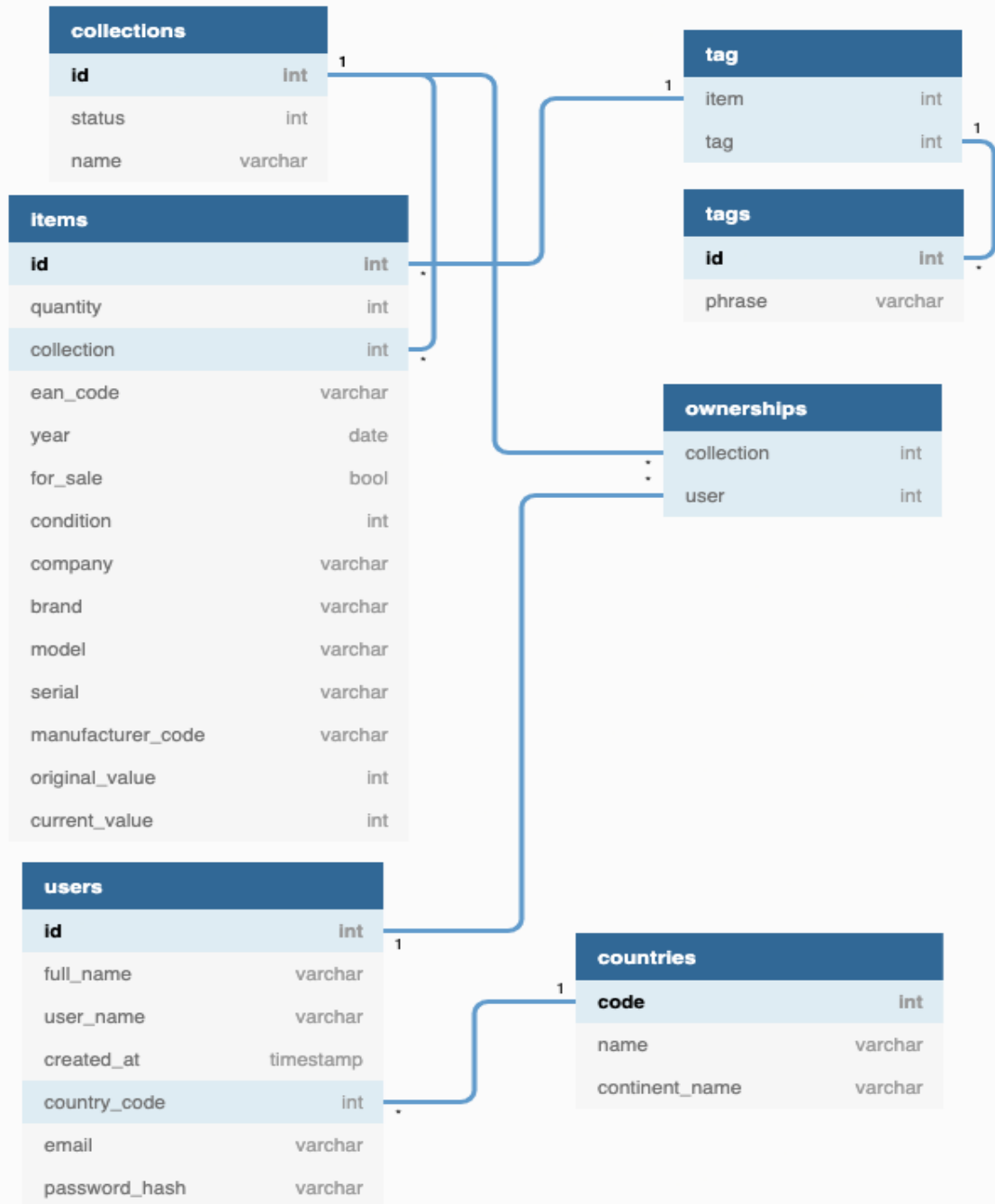
- **Collectible item description:**

It includes item code, name, make, model number, year of production, overall condition, quantity, and image of the item. The database will also include an estimated monetary value (as provided by the user) for items to be sold on the marketplace.

- **User description:**

It includes customer code, name, username, and email. This information will be used to contact the user about purchasing or selling items on the marketplace.

A theoretical database is provided below as a diagram (in full page format).



2.2 Product Features (Functions):

The software will provide these functionalities:

Account Registration:

- This allows new users to register a new account.

Login:

- Existing users enter their unique username or email address and password.
- Once logged in, the user is taken to their dashboard.

Add Items:

- Users can upload a name, an image of their item, and a description.
- Alternatively, using the lookup function, they can search the central database for an existing item that matches their item. They can then add this item to their collection list.

Take Pictures

- Mobile only.
- Users can take pictures of barcodes or qr codes to help them find information on their product using EAN numbers or other information to help them fill out their product fields
- Users can create collages of their product or products for collections and individual items.

Remove items:

- This will remove the item from the user's database.

Search Marketplace:

- This will allow users to search the marketplace for items to be purchased.

Add Items to Marketplace:

- This will allow users to upload their items, including an asking price, to be sold in the marketplace.

Change Layout:

- Allows the user to change the look of their dashboard.
- Changes to colours and layout can be changed from this feature.

Contact User:

- Displays a form that the user can fill out with their name, email address or phone number and a brief message. This will be used to contact other users about purchasing or selling items on the marketplace.

Payment Options:

- Displays options for payment of items. Users can choose at their discretion which payment option they would like to use (e.g PayPal).

Contact Us:

- Displays a form that the user can fill out with their name, email address or phone number and a brief message. This will be sent to our customer support centre for processing.
- This form also displays a toll-free phone number for contacting customer support directly.

2.3 User Classes and Characteristics: Identify the various user classes that you anticipate will use this product.

The user is anyone who wants to create an account to store and organize a digital record of their physical collection. The user is expected to have an internet connection and experience using mobile applications and/or navigating web pages.

If the user intends to upload images, it is expected that they have a device to take pictures and are able to follow instructions to upload them to their account. For mobile devices, picture taking will be a built-in feature.

2.4 Operating Environment:

Our operating environment will be directed at as many platforms as is possible and feasible.

- Mobile devices running Android and iOS for Flutter compatible versions.
- Desktop devices running Windows, Linux or Mac OS for Flutter compatible versions.
- Devices with a modern Web Browser.
- Flutter for frontend.
- PHP for backend.
- JSON for API.
- Common JS, HTML version 5, and CSS version 3 for collectopedia.com (advertising website).
- AWS Web Hosting for the Linux App Image and collectopedia.com
- Our server will be running the latest Alpine Linux to keep it light, simple and secure.
- We will be using Cloudflare for our DNS management.
- AWS for our physical server needs, our firewall, and scalability.
- We will use Amazon Aurora RDS to manage our data for maximum compatibility.

- GitHub will be used for development and code management.
- CodeMagic will be used for CI/CD.
- Version Numbers will be clarified and discerned as prototypes are generated.
- See 1.5 “Flutter Versioning” for some up-to-date information on FE OS versioning.

2.7 Assumptions and Dependencies:

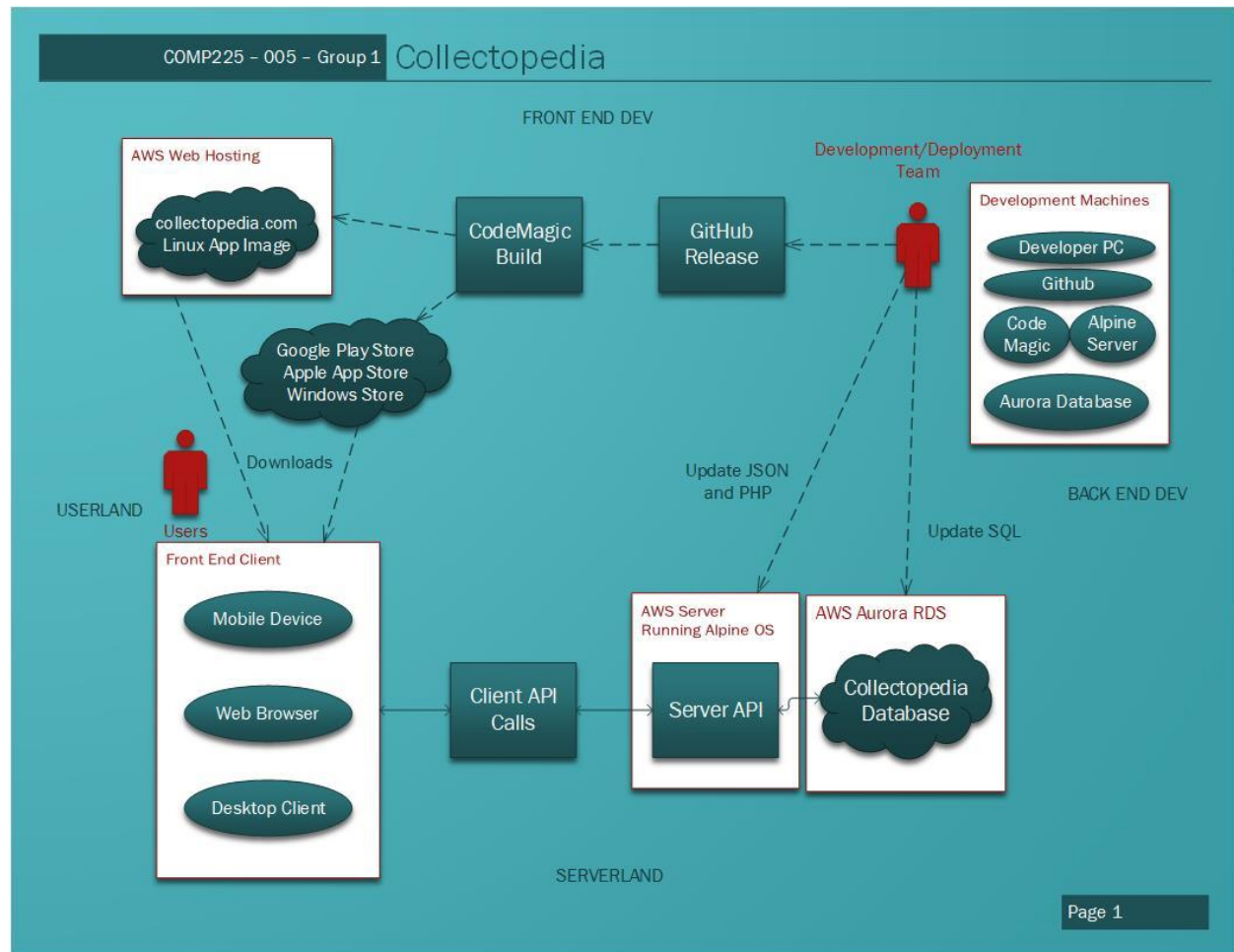
Our tools will generally encompass mainstream open source projects. The more popular and better supported tools will be recommended. Our hardware will be industrial with AWS.

- Flutter is supported and operated by Google utilizing their in-house Dart Language. Flutter’s EOS will not be a concern so long as the tech giant google supports it. Flutter is important to our project due to the ability to write generally the same code for multiple platforms, Web, Mobile, and Desktop.
- PHP has a consistent versioning system and is well supported by the open source community. EOS will be considered after prototypes are created.
- JSON is a static development tool so EOS is not a concern.
- Alpine Linux is used by Docker and many other large companies who support the operating system and it’s progress. EOS should not be a concern. Versioning will be managed when the server prototypes are ready.
- AWS is a great industrial cloud service with global server space. AWS is one of the largest public clouds since 2006, and plans on continuing their business for years to come. EOS should not be a concern.
- Aurora RDS is a service provided by AWS, hence there should be no concerns for EOS. It also supports compatibility to older database services should we change our service platform.
- AWS Web hosting is a service provided by AWS, hence there should be no concerns for EOS. It also supports scalability and definite uptime from the start.
- Web development tools including CSS, HTML and JS are industry standard and their versions are easily maintained and upgraded with modern web tools. Therefore, we have no concern about EOS.
- GitHub is one of the largest and most advanced development platforms in the world. Recently acquired by Microsoft and should be supported for some time, so EOS is no concern.
- CodeMagic is the first CI/CD to make the M1 Mac mini available for developers. CodeMagic also is voted the best CI/CD tool in Flutter’s user survey and is trusted by more than 43k developers across the world, so EOS should not be a concern.

Section 3 “External Interface Requirements”

3.1 User Interfaces:

End Users will be able to access the system through multiple interfaces including mobile(Android and iOS), web browser(Microsoft Edge, Google Chrome, Mozilla Firefox) and desktop application(Windows and MacOS). The back end will be utilizing JASON for data transfer and PHP for server to database translation. Web(HTML, CSS, JS) will be used for the homepage collectopedia.com and you can also view our system context diagram below.



3.2 Hardware Interfaces:

- Cameras - for photos of collector items.
- Storage - to store the app
- WiFi/Ethernet/Other - to connect to the internet

3.3 Software Interfaces:

- Web Browsers (Microsoft Edge, Google Chrome, Mozilla Firefox, Chromium variants)

- Desktop OS (Linux, Windows and MacOS)
- Mobile OS (Android and iOS)
- Digital Distribution (Google Play Store, Apple App Store, Windows Store)
- Desktop Application

Please see versioning information in **1.5 “Flutter Versioning”**, any changes will be in that link.

Notes For Camera on Mobile and Manual Entry on Desktop

Why we will not be adding camera functionality to Desktop and Web versions.

- We assume most users will have access to a mobile device.
- Mobile devices are much easier to use than most desktop or laptop cameras.
- Flutter does not yet provide a library for Desktop and Web based pictures, we would need to build it.

For example if the user finds a barcode or QR Code with valid EAN CODE or number we will automatically generate clickable links. On Desktop users would manually enter their codes.

- <https://www.google.com/?q=<EAN CODE>>
- <https://www.ean-search.org/?q=<EAN CODE>>

For example: 673419202398 which produces information about the collector’s lego set.

- <https://www.google.com/?q=673419202398>
- <https://www.ean-search.org/?q=673419202398>

3.4 Section:

Use Cases

Use Case Name	List of Related Requirements ID	Actor(s)	Brief Description
Sign up account	FR01	Customer	<p>The actor will click on the Sign Up button. They will then be taken to a form to enter their email address and choose a password. The system will check if that email address is in use, and if it is, a message will be displayed informing them of that.</p> <p>If the email address is not in use, they will be taken to a new form which will have them fill out their personal information for the user profile. The</p>

			actor may also upload a profile picture. Upon submission of this form, a verification email will be sent to the actor's provided email address. Once validated, the actor can access their new account.
Sign into account	FR01	Customer	The actor will click on the Sign In button. They will then be taken into their account profile. The user will now be able to access the in-app functions.
Start a new collection	FR02, FR03	Customer	When the actor is logged in, and does not have any current collections, their main page will display a centrally located button labelled: Start your first collection! . Upon clicking on this, the user will be taken to a form to enter the name for their collection, and specify what type of items it will contain. To complete the creation of the collection, the actor must add at least one item to the collection. If the actor does not add an item, they can save the collection to be displayed later. Empty collections cannot be displayed.
Add new item	FR03	Customer, Camera	When the actor selects one of their collections, there will be a button they can click to add new items to the collection. This will open a new window containing a form which the actor will fill out providing a description of the item they are adding. A picture can be added to this item now or at a later time.
Modify Item	FR03, FR04	Customer	The actor can select an item from their collection, the item will open in a pop-up window. There will be an Edit button the user can select which will take them to the same form that was provided when the actor initially added the item. From here the user can modify any field, fill out empty fields, and add/remove images. The user may also select the Remove Item button to remove the item from their collection.
Add item to Favourites	FR12	Customer	The actor can select an item while browsing on the Marketplace or another user's collection, the item will open in a pop-up window for the user to view more details. There will be an Add to Favourites button, which the user can select to

			add that item to their "Favourites List".
Search Favourites	FR12	Customer	The actor selects the Favourites button. This navigates to a new page - Favourites. From this new page, the actor can browse his/her list of favourite items. The actor can also search by keyword phrase to find items matching what they are looking for.
Browse the marketplace	FR05	Customer	The actor selects the Marketplace button. This navigates to a new page - the marketplace. From this new page, the actor can browse the marketplace by item type. The actor can also search by keyword phrase to find items matching what they are looking for.
Purchase an item from the marketplace	FR05, FR08	Customer, customer2(Lister)	While in the Marketplace , the actor can search the marketplace for an item they desire. If they find what they are looking for, they can add the item to their cart. The actor can then either keep browsing for new items, or go to their cart. From the cart, the actor can either remove items from their cart, or choose to checkout. If the user chooses Check out , they are taken to a secure form to enter their payment, billing and shipping information. When payment is processed, the lister of the item will be sent a notification that the item has been purchased. The lister will be provided with the buyer's shipping information. It is now up to the lister to send out the item in a timely manner. The item will be removed from the marketplace upon payment confirmation.
Email Notifications	FR07	Customer	The actor can enable or disable Push Notifications on mobile and Email Notifications for their account. The email updates and notifications will automatically be sent to the actor about what items in their favorite items have changed, account changes, and what changes or favorites have occurred to their own collections.
Modify App Appearance	FR06, FR11	Customer	The actor opens the User Settings menu from the app user interface and selects their preferred style layout, themes, fonts, and general look of their app.

Modify Account	FR01, FR10	Customer	In the User Settings page, the actor can choose to modify any of the personal information they have entered when they created their account. They can also, if they choose, click the Remove account button. This will prompt the user to ensure they want to remove their account. If they confirm, this will send a command to drop all of the actor's tables from the database, and remove the customer's email address from the system. A confirmation pop-up will display, and a confirmation email will be sent to the actor's email address. In the same menu users would be able to Hide account from public view, accessible only to themselves or to private invites if they desire more privacy.
Share Collection	FR09	Customer	The actor can create a shareable link from users, collections or items in collections to share with other actors or potential actors who use or will log into the same app. If the user's collection is hidden or account, the shareable link will no longer work. If a user's account is set to public shareable links will work. If private/hidden, shareable links will not work.
Report User	FR16?	Customer, Administrator	If the actor comes across another user's page which contains inappropriate material that breach our terms of use, the actor can select the Report User button. This will open a confirmation window to ensure the actor does want to report the user. If confirmed, a ticket will be submitted to our Administrators for further processing.
Download and Use App	FR15	Customer	The actor will be able to download the app onto the device of their choice. Popular supported platforms include iOS, Android, Windows, .Mac, and Linux. The actor should be able to use the app 24/7 and download it at any time.

Section 4 “Functional Requirements Lists”

Priority Scale (mandatory, expected, highly desirable, desirable, optional)

Functional Requirements list

Requirement ID	Requirement Title	Short Description	Priority	Requester
FR01	User Profile	The user should be able, upon signing up, to create a unique user profile. This could contain things such as the user's name, geographic region and a profile picture if they choose to upload one. An additional verification email will be sent to authenticate the user when they register for the first time.	Expected	Customer UX Designer Lead Graphic Designer
FR02	Create New Collection	This would create a new table that the user will add items to.	Mandatory	Project Manager Database Administrator UI Designer
FR03	Add Items	This allows the user to upload an image of the item, and fill out a description of the item to add to their list. This function would additionally allow users to upload items to the marketplace to sell.	Mandatory	Project Manager Database Administrator UI Designer
FR04	Remove Items	This allows the user to remove items from their collection list. It also removes the item from a listing on the marketplace, if applicable.	Expected	Customer Database Administrator UI Designer
FR05	Search/Browse for Items	This function would allow the user to search the marketplace for potential items to add to their collection.	Expected	Customer Database Administrator UI Designer
FR06	Change Layout	This allows the user to change their dashboard display to better suit their viewing needs. For	Optional	UX Designer Graphic Designer UI Designer

		example, a user can select which items or details they wish to view, while hiding other information.		
FR07	Email Notifications	This allows users to contact one another about items for sale in the marketplace, or to contact a representative from Collectopedia for questions or concerns.	Highly Desirable	Customer Database Administrator
FR08	Payment Options	This allows users to decide on a method of payment. Users can either decide to use a third party option, such as PayPal, or to make arrangements with the buyer/seller of an item.	Desirable	Customer Database Administrator
FR09	Share Collection	This allows users to share their collection with friends or family. Invited friends or family will be able to view the collection, but not make any changes. This will allow friends or family to search the user's collection to see if the user already has an item in their collection.	Expected	Customer Database Administrator UI Designer
FR10	Delete Account	The user should, if they desire, be able to delete their account from the system. This will remove all user associations with any items. All user details will be removed from our systems.	Mandatory	Customer Database Administrator
FR11	Hide Account/Collection	User should be able to hide their collection/account from	Highly Desirable	Project Manager Database Administrator

		public view		
FR12	Favourite Items	This allows the user to favourite items that they come across that they would like to keep tabs on.	Desirable	Customer Database Administrator
FR13	Follow User Collection	Allows the user to favourite another user's collection to keep track and allow the system to provide them with updates	Expected	Customer Database Administrator
FR14	Show Off Collection	Automatically generates a link that allows the user to share their collection (even with non-users of Collectopedia) via a customized webpage that displays the user's collection.	Desirable	Project Manager Database Administrator
FR15	Software Installation	Installs Collectopedia to the user's system to access the service	Expected	Project Manager

Use Case Description:

Use Case: Sign up for new account

Primary Actor: Customer

Goal in Context: To sign up for a new account with Collectopedia.

Preconditions: The customer must be connected to the internet. The application must be opened and running; user must be on the "Sign Up" page; user must not already have an account with Collectopedia.

Trigger: The customer decides to sign up for a new account

Scenario:

1. The customer downloads the application to their device (for mobile and desktop versions).
2. The customer opens the application and selects the sign up button.
3. The customer will be presented with a form to enter their personal information, such as their name, email address, date of birth, and country of origin.
4. Upon submission of this form, the application will check to ensure that email address is not already registered. If the email is already registered, the customer will be presented with a message stating that the email is in use, and ask them to sign in to an existing account.
5. If the email address is not registered, the account registration will be completed, and the customer will be sent a confirmation email.
6. The customer will have to confirm their email address by navigating to their email inbox and clicking the provided link.
7. Once the user has confirmed their email address, they will be able to sign in to their account.

Exceptions:

1. Customer already has an account with Collectopedia.
2. Customer does not reside in the geographical area supported by Collectopedia.
3. Customer provides an invalid email address.

Priority: High priority

When Available: First increment

Frequency Of Use: One-time use

Channel to Actor: Via mobile/browser/desktop application and internet connection

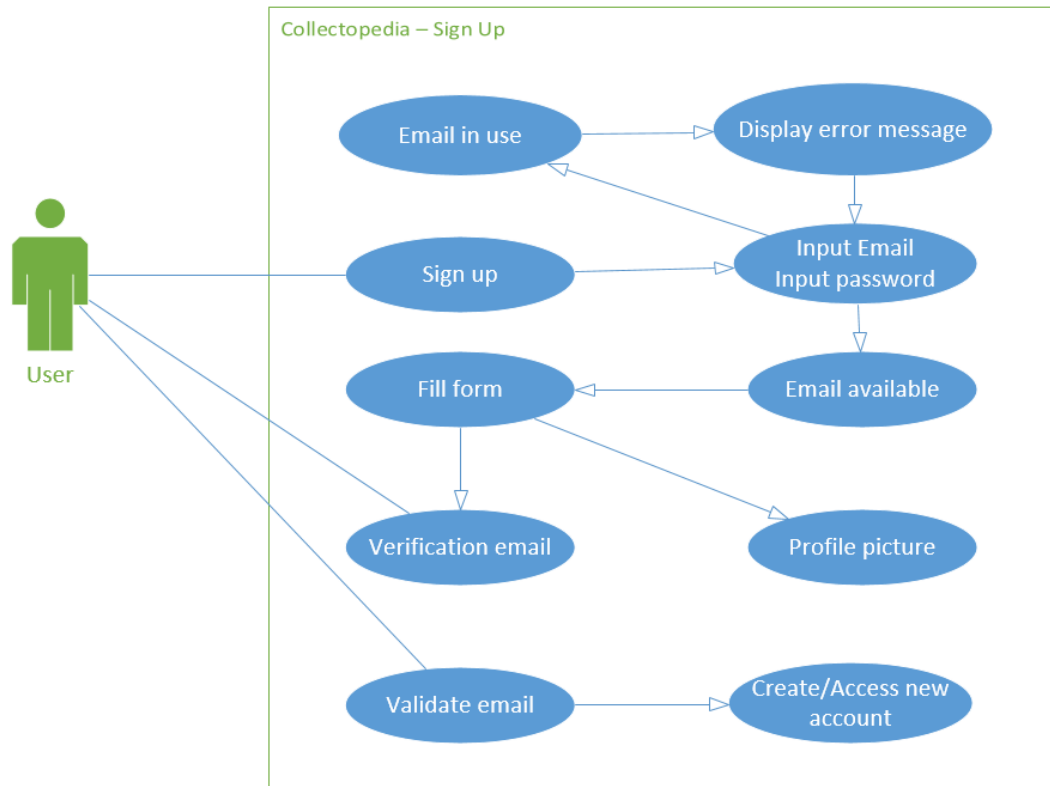
Secondary Actors: Database Administrator, Camera

Channels to Secondary Actors:

1. Database Administrator: PC-based system
2. Camera: connectivity to internet

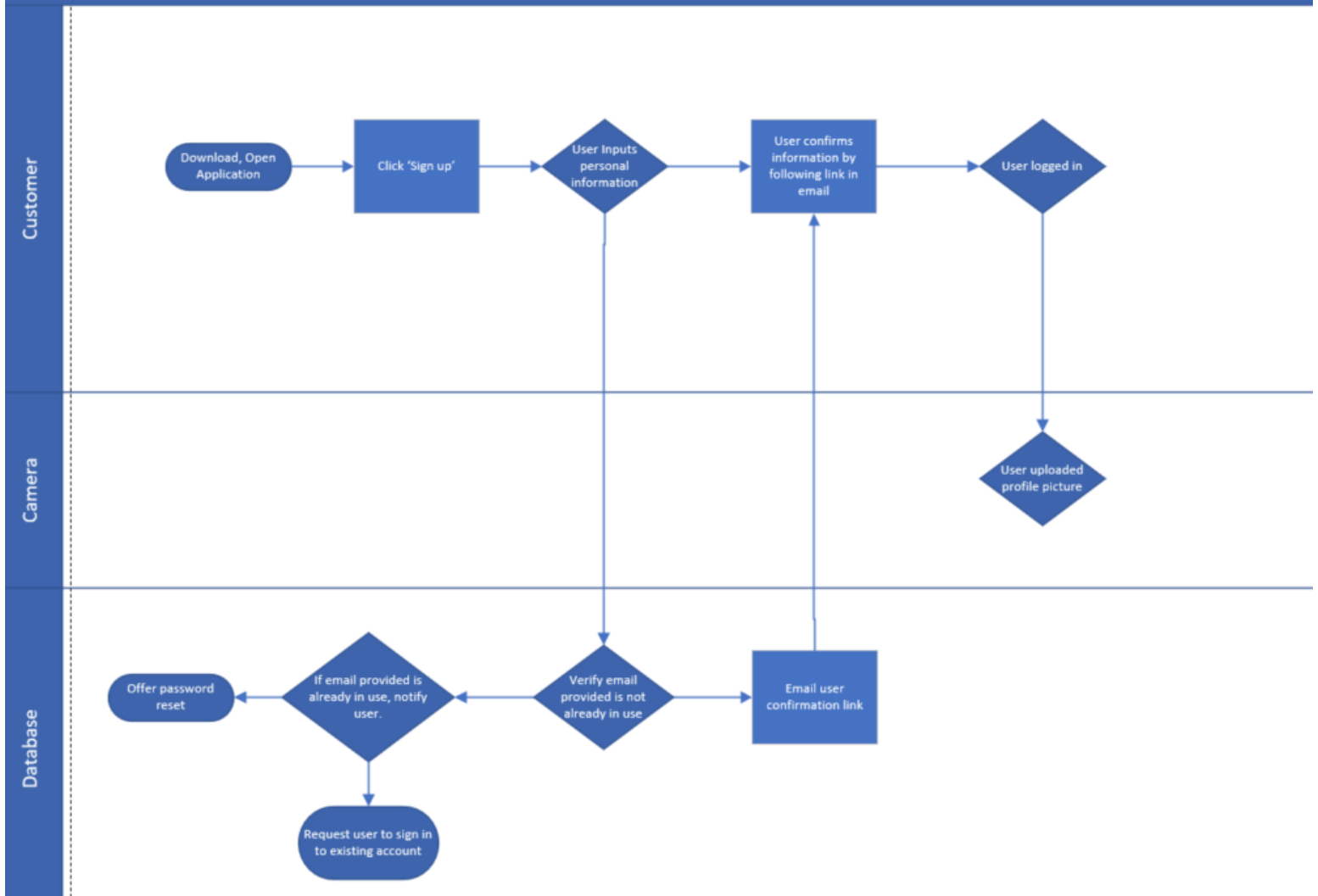
Open Issues:

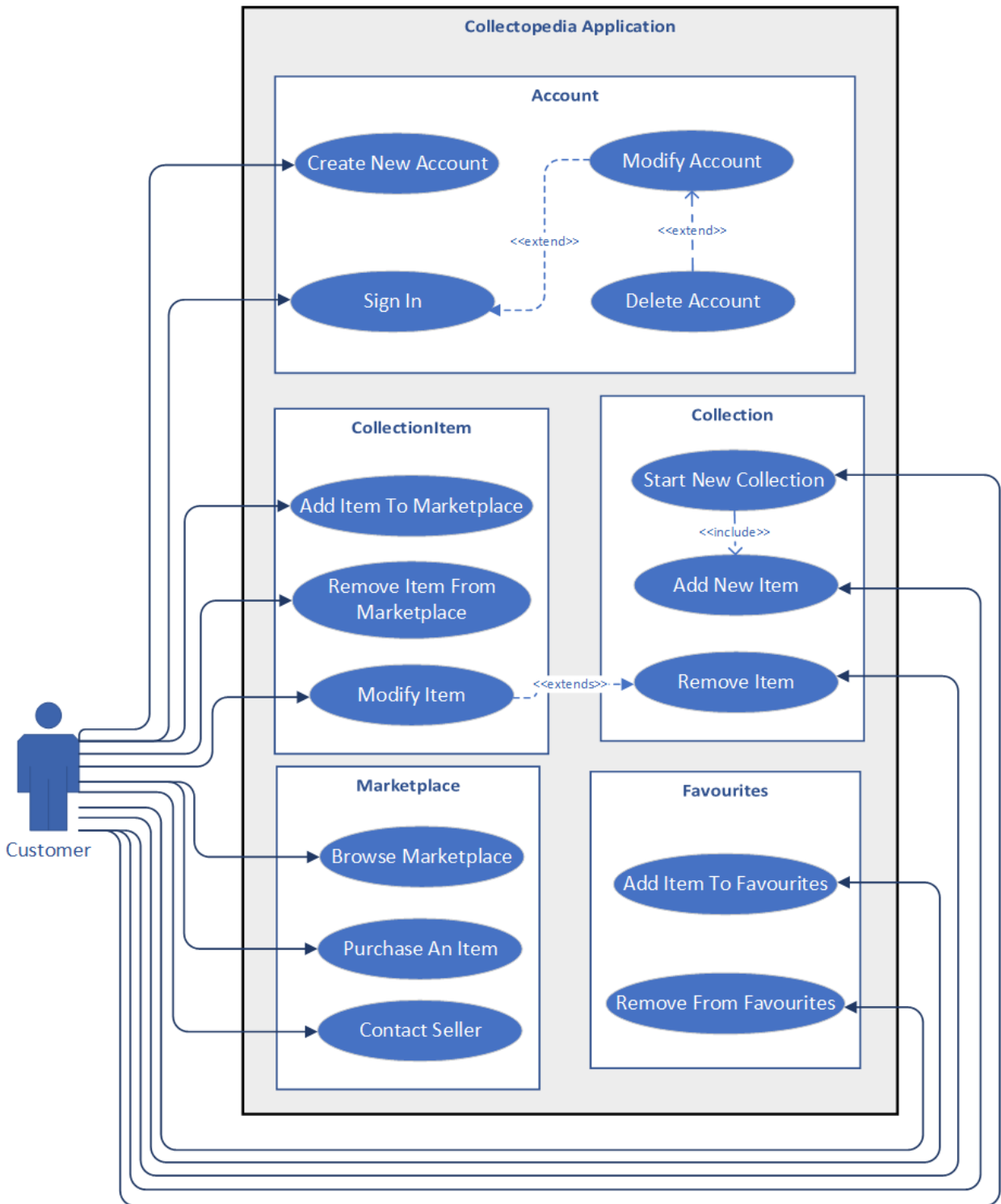
- What ensures the security and privacy of the customer?
- Are there any limitations on who can sign up (age limit)?
- What features, if any, are available to anyone who has not signed in?
- What options are available for customers to sign up (Facebook account, Google account)?



Sign up for new account

Collectopedia – Group 1





Section 5 “Functional Requirements Lists”

Nonfunctional Requirements list

Requirement ID	Requirement Title	Short Description	Priority	Requester
NFR01	Security	The system should pass the following tests: DDos testing, penetration testing and SQL injection testing. Additionally, database security must meet HIPAA requirements.	Expected	IT security officer Chief Privacy Officer
NFR02	Mobile Compatibility	Mobile will be the intended primary platform for the use of our product.	Expected	Project Manager
NFR03	Desktop Compatibility	A desktop application will be intended as another way of accessing the service. Current plans are for the application to have the same full capability as on mobile.	Expected	Project Manager
NFR04	Web Compatibility	The system must meet Web Content Accessibility Guidelines WCAG 2.1	Expected	Project Manager
NFR05	Performance	When users are searching for items to add to their collection or to purchase from the marketplace, search results, under normal operating conditions, should return results under 1 second. Under conditions where there is a lot of traffic, search results should not exceed 3 seconds.	Expected	Database Administrator Software Quality Assurance Engineer Software Testing Consultant
NFR06	Usability	The user interface layout should be intuitive and easy for users to learn how to operate/navigate the system. The interface must also be efficient by allowing users to reach their desired goal quickly, with minimal opportunities for use errors	Mandatory	UX Designer UI Designer UX Researcher Chief Financial Officer Investor Sponsor Marketing officer

		to occur.		
NFR07	Availability	The system must be able to support a continuous level of availability under levels of normal operating volumes and concurrency, and it must be available 24/7.	Highly Desirable	Customer Chief Compliance Officer Investor Sponsor Marketing officer
NFR08	Scalability	The system must be able to support an annual transactional growth rate of 10%, and still meet all defined transactional performance requirements.	Expected	Project Manager Development Team
NFR09	UI Customization	Users should be able to customize their UI, change fonts, themes, dark mode, etc.	Desirable	Customer Graphic Designer
NFR10	Manageability	Control a system efficiently and keep it fully operational.	Expected	Project Manager Human Resources Sr. Developer

Appendices

Appendix C

Stakeholder Register:

Stakeholder Name	Stakeholder Position	External/ Internal	Stakeholder Contact Details	Operational/ Executive	Interest (high, medium, low)
Red Foreman	Chief Compliance Officer	Internal	r.foreman@collectopedia.ca	Executive	medium
Marbal Chupta	Chief Financial Officer	Internal	m.chupta@collectopedia.ca	Executive	high
Timothy Batier	Chief Privacy Officer	Internal	t.batier@collectopedia.ca	Executive	high
Greg Steel	Customer	External	g.steel@gmail.com	Operational	high
Jane Pardu	Communications Officer	Internal	j.pardu@collectopedia.ca	Executive	medium
Frank James	Database Administrator	Internal	f.james@collectopedia.ca	Operational	high
Jessica Amari	Graphic Designer	External	j.amari@gmail.ca	Operational	medium
Marko Nutello	Human Resources	Internal	m.nutello@collectopedia.ca	Operational	low
Mark Stanley	Investor	External	m.stanley@lego.com	Executive	high
Bob LaDoufe	IT Security Officer	Internal	b.ladoufe@collectopedia.ca	Executive	low
John Snow	Lead Graphic Designer	Internal	j.snow@collectopedia.ca	Operational	medium
Adam Zinnie	Lead Software Designer	External	adam.zinnie@gmail.com	Operational	medium
Mate Masson	Marketing Officer	Internal	m.masson@collectopedia.ca	Operational	medium
Delphine Supat	Product manager	Internal	d.supat@collectopedia.ca	Operational	high
Joe Liverpool	Programmer	Internal	j.liverpool@collectopedia.ca	Operational	medium
Cindy Lou	Programmer	Internal	c.lou@collectopedia.ca	Operational	medium
Joey Tribbiani	Programmer	Internal	j.tribbiani@collectopedia.ca	Operational	medium
Amari Sumir	Project Manager	Internal	a.sumir@collectopedia.ca	Operational	high
Mike DeMarco	SCRUM Master	Internal	m.demarco@collectopedia.ca	Operational	medium

Danny McKey	Software Maintenance	External	d.mckey@bettersoftware.com	Operational	low
Sahar Azizi	Software Quality Assurance Engineer	External	s.azizi@kandasoft.com	Operational	low
Anna Tutsu'm	Software Testing Consultant	External	a.tutsum@gmail.ca	Operational	low
Wendy Berger	Sponsor	External	w.berger@yahoo.ca	Executive	high
Reza Moradi	Sr. Developer	Internal	r.moradi@collectopedia.ca	Operational	high
Natalie Smart	UI Designer	External	n.smart@rossul.com	Operational	medium
Barb Johnson	UX Researcher	External	b.johnson@rossul.com	Operational	medium

Appendix D:

Interview Questions:

Stakeholder Position	Question	Answer
Chief Compliance Officer	1- How would you handle individuals breaking rules in higher positions?	No matter their position, company policy is a must.
	2- What is your favourite aspect of your position?	Allow for a personal story or explanation.
	3- What is the most difficult situation you've ever handled?	Allow for a personal experience.
	4- Is there a time for leniency?	Expect no, but permit for yes with an explanation.
	5- What should your role be in the context of this project?	Allow for a custom explanation but require mentioning of compliance duties
Chief Financial Officer	1- What is the intended budget for this project?	It is currently being negotiated and exact figures will be prospect.

	2- What factors could impact the budget?	If features are not being implemented in a timely manner, or if it's clear that the project is falling drastically behind, there could be limits on funding. As well, if it's clear that the market is changing, continued funding may be in question.
	3- Is there any wiggle room in the budget?	If it is clear that the budget isn't quite high enough, and there is a valid reason for it, there could be additional funds allocated.
	4- What will the revenue stream for this product look like once it has been launched?	We will be running ads on our platform and offering a premium membership. We will additionally incorporate affiliate links for purchases made through the application.
	5- Do you have any personal reasons for considering this project to be a success or a failure already and why?	Expect indifference, but permit an explanation for yes or no.
Chief Privacy Officer	1- What are we doing to protect the user's privacy and the privacy of their collections?	We'll be utilizing AWS as a backend for cloud storage and AWS server and application level firewalls.
	2- What DNS management tools will we be using to protect our content delivery systems?	We'll be implementing cloudflare for domain hosting.
	3- How will we be protecting physical access to our databases?	AWS secure data centers will implement their own protocols.
	4- How would you class the privacy level data stored in our databases using the following terms: critical, important, neutral, unimportant?	Accepted answer is important, as our database does not contain government id or banking information but does contain name, email and other traceable data points. Allow for explanation otherwise.
	5- Will our data be sent to third parties?	Yes, trusted third parties will have access to relevant data.
Customer	1- What problem does this product solve for you?	I have a large collection of miniature cars. If I want to buy a new car but I'm not sure if I already own it, it would take a long time to find that item - if I even have it. Being able to do a quick keyword search for the item I'm looking for, and having the result display on my screen would save me a lot of time.
	2- What features do you expect this product to have in its first iteration?	The ability to upload images and descriptions and have the ability to sort my items by certain fields (colour, model, etc.)

	3- Are there any features you can do without?	I currently don't have a need to change the colour scheme or layout of my collection. However, it may be something I would play around with at a later date if it became an option, but it's not a deal breaker.
	4- Will you need to store more than one collection of items?	I have a large collection of miniature cards, however I have been considering collecting vinyl records. The ability to store lists of both collections separately would be greatly beneficial.
	5- What device(s) do you expect to access this product from?	I currently have a desktop PC and an android phone. It would be nice to be able to access my database both at home and if I'm at a store or event.
Database Administrator	1- What type of database is used in this project?	AWS Aurora relational MySQL and PostgreSQL compatible database.
	2- How will we deal with surges in demand?	We anticipate being able to meet any demand as much of our backend is supplied by AWS.
	3- How often will the database be updated?	The database will be updated in real time
	4- What basic syntax or language will the database be written in?	SQL and more specifically MySQL or PostgreSQL
	5- What do you expect to be the major source of change in the database structure?	User requests.
Development team	1- What framework will this project be using?	Agile-Scrum
	2- What development platform is for the website?	HTML, JS, CSS
	3- What development platform is for the front-end?	Flutter
	4- What development language is for back-end?	PHP
	5- What skills do you consider most important in developers?	Communication, Honesty, Ability
Graphic Designer	1- What software do you use?	UXPin, Sketch or any good design tool.
	2- What kind of ergonomic user interface do you prefer?	Allow designers to elaborate?
	3- Do you have any ideas or samples for how the app should look?	Yes, permit designers to explain or offer. No, require explanation.
	4- Do you have any ideas about utilizing the flutter design framework effectively?	Yes, require explanation.

	5- What qualities and skills should a good graphic designer have?	A good graphic designer should be creative, consistent, problem solver and patient.
Human Resources	1- Have you ever let your personal opinions affect a hiring decision?	No, with explanation.
	2- What is your most effective personal ability or skill as HR?	Allow for a personal story/explanation.
	3- How much experience have you had in this role?	Minimum 3 year.
	4- What was the most difficult qualification to meet for this job?	Allow for explanation.
	5- Could you explain the most difficult time you have had as HR?	Allow for a personal story/explanation.
Investor	1- Do you expect to be notified at every stage, or just key milestones?	I'm fine with just being notified as certain major features have been implemented, but I don't need to be informed of all progress being made. As long as I know my money isn't being wasted, I'm happy.
	2- What's in it for you?	I want this project to succeed, it's something I am interested in, and the options that are out there are not perfect in my opinion. I would like my money to go to something outstanding.
	3- What is this product's business model? How will it generate money?	Thought: Make products completely free to use, but run ads. We could offer a premium service that offers unlimited uploads/use and also offer our data to companies like Mattel for money.
	4- Do you have any business partnerships?	We are in discussions to partner with makers of collectibles such as Mattel, Lego and others.
	5- Do you have any personal reasons for considering this project to be a success or a failure already and why?	Success, and allow for an explanation.
IT security officer	1- How will user data and passwords be safely stored in the database?	We will make use of the latest hash algorithms such as bCrypt and others.
	2- Have you worked at a company with a security breach? How was it handled?	Allow for a personal story/explanation.
	3- What do you expect to be the project's largest security attack surface?	User's have public, large collections of expensive or high valued items becoming targets of robbery and theft in person.
	4- Is there any personal reasons you might breach company protocols?	No, with explanation.

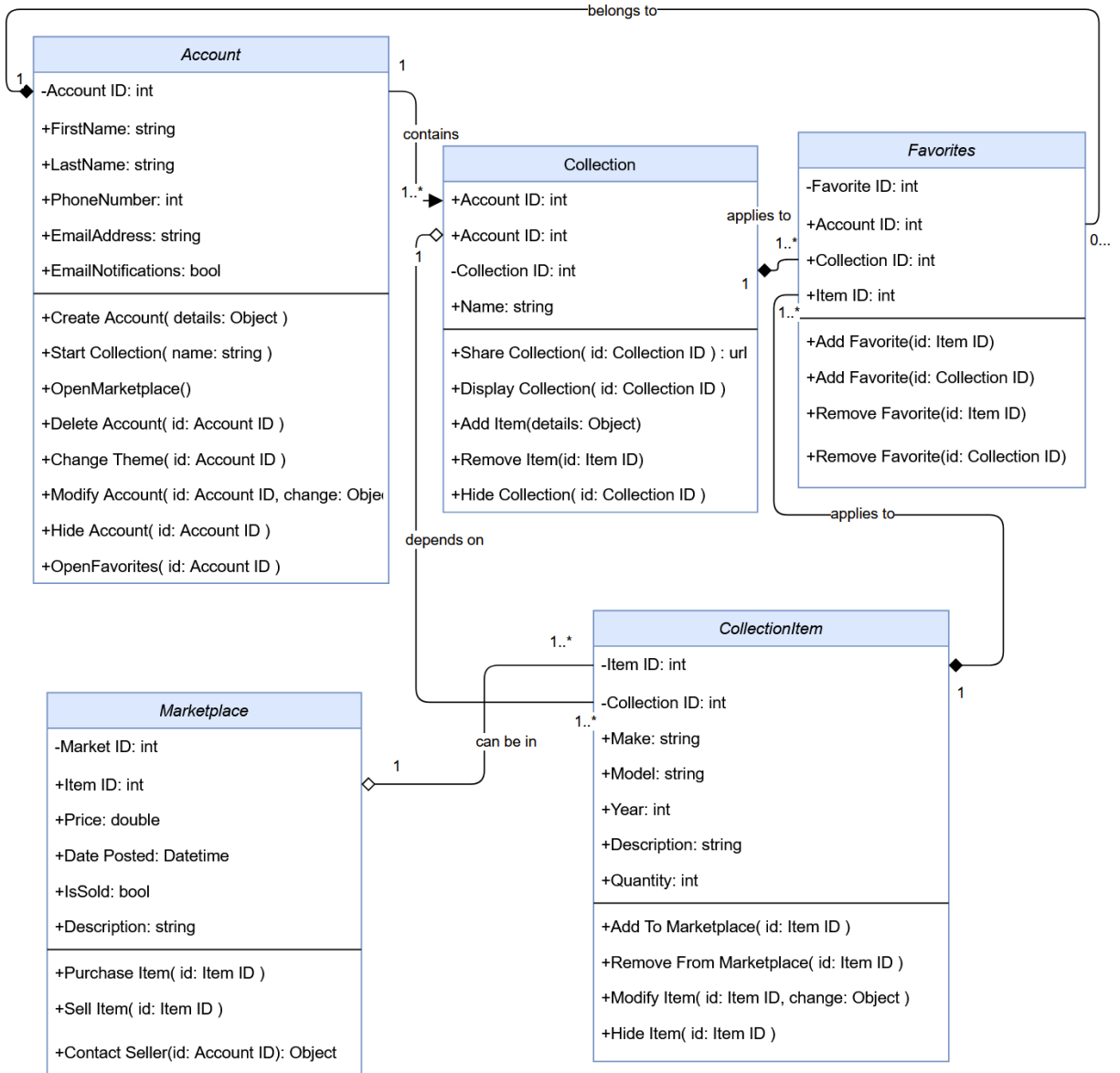
	5- How will production and developer machines be monitored for breaches and information leaks?	Glasswire or any other multi-platform system administration tool.
Lead Graphic Designer	1- How will you give expert advice to the other graphic designers?	Pair programming/designing.
	2- Who will you receive your design templates from?	Lead UX designer.
	3- What is your greatest achievement as a graphic designer in your own opinion?	Note strengths and abilities. Take note of what the achievement was. Understand designer's priorities.
	4- What was your least successful project and why?	Note weaknesses and how the designer dealt with their failures.
	5- What software do you use?	Adobe photoshop or some similar professional grade software.
Marketing officer	1- Who are your end-users?	The end user is any individual who wishes to store a digital record of their collected items. Extending that is any individual wishing to purchase collectable items that may be for sale in our marketplace.
	2- Who are your biggest competitors?	Many smaller, less feature-rich, and less attractive products exist on the market.
	3- How are you going to make this product stand out from competitors?	A far more intuitive UI and improved UX should help us gain a solid foothold in the market.
	4- How are you going to brand this product?	Being sponsored by Mattel and Lego allows us to cater our product to collectors of those companies' various products.
	5- Will this be available in other countries?	Support for countries outside Canada will be available
Project Manager	1- Why is this project important?	Our sponsors and users depend on a reliable product that is financially viable.
	2- What is the expected timeline for this project?	Approximately 1 year and a few months until the Beta testing phase closes and we're ready for initial full release.
	3- What is the central goal to help our project members maintain good relationships?	Cohesiveness, team gel, and collaboration. The Agile principles and framework will be a central theme.
	4- What will your top priority be?	Building a team that works well together and has the required professional attributes for project success.
	5- Is there anything you expect from this project?	A pay cheque and hopefully some, but not too many, new problems that challenge my role as

		a project manager.
Software Quality Assurance Engineer	1- What code quality tool will we be using for this project?	Code Magic
	2- What is the worst defect you have found in the past?	Note defect, what caused it and how it was handled.
	3- What in your opinion is the best thing a company can do for their software?	Allow for elaboration.
	4- Can you explain the Software Testing Life Cycle?	Software Testing Life Cycle refers to a testing process that has specific steps to be executed in a definite sequence to ensure that the quality goals have been met.
	5- How many years of experience in SQA have you had?	3 or more years.
Software Testing Consultant	1- How can you eliminate the product risk in your project?	I will investigate the specification document and have discussions about the project with all stakeholders including the developer.
	2- What is the common risk that leads to project failure?	Time limitation, limited budget, or not having enough human resources.
	3- On what basis you can arrive at an estimation for your project?	Dividing the whole project into the smallest tasks, allocating each task to team members, validating the estimation, and estimating the effort required to complete each task.
	4- How much testing is enough?	Depends on the risk for your industry, contract and special requirements.
	5- Could you provide some examples of functional testing?	regression, integration, system, smoke
Sponsor	1- When can I expect this program to be delivered and available to use by the public?	By the end of April 2022
	2- What is our top priority before prototypes are built?	Market analysis for cost of development vs. total revenue.
	3- What will you need from the various groups to assure	Only landmarks and timelines of the essential information as the project moves forward in the development landscape.
	4- How much information will you be interested in having?	Progress markers in the form of prototypes and summations of data.
	5- In what scheduling format would you like this information?	Weekly in your project managers preferred format.
Sr. Developer	1- Do you foresee any flaws or issues that may occur in the foreseeable future of this project?	If the project expands outside of it's initial scope, Flutter Dev libraries might be insufficient, or some similar issue.

	2- What deployment tool will we be using?	Code Magic
	3- What operating system will our API be served on?	1 or more alpine linux operating systems.
	4- How will the API be formulated?	The database, UX and frontend developers will orchestrate their requirements with the design team and myself.
	5- What is your least favourite task as Sr. Developer?	Note Sr. Developers weaknesses and how they're managed.
UI Designer	1- Will we be offering full support for people with disabilities?	We are aiming to make this product available and accessible to as many people as possible
	2- What library of tools is the front end design centered on?	Flutter Development Library/Platform
	3- What type of libraries are preferred for this product?	As many officially supported libraries as possible.
	4- Does our product support theme-ing?	Yes, dark, light and possible other themes.
	5- Does our product support internationalization?	Yes, our product will support internationalization.
UX Researcher	1- Why is UX design so crucial?	Mentions end-user
	2- What is the central role of a UX designer?	Understand the general application, affinities of the user-base/end-user demographic, ergonomic design and accessibility.
	3- What is the difference between UX and graphic designers?	Focused on design ease of use and functional requirements.
	4- How would you rate your communications skills from 1-10?	8+ with explanation otherwise.
	5-What is the most important aspect of universal design?	All inclusive user framework.

Appendix E

Class Diagrams:



Class: Collection Item	
Description - Individual collectors items will be stored here.	
Responsibility:	Collaborator:
Defines item	Customer
Add To Marketplace	Collection Item
Remove From Marketplace	Marketplace
Modify Item	Customer

Hide Item	Customer
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Class: Marketplace	
Description - Where collectors items are offered or requested at price.	
Responsibility:	Collaborator:
Defines collection item(s) for sale	CollectionItem
Buy an Item	Customer
Sell an Item	Customer

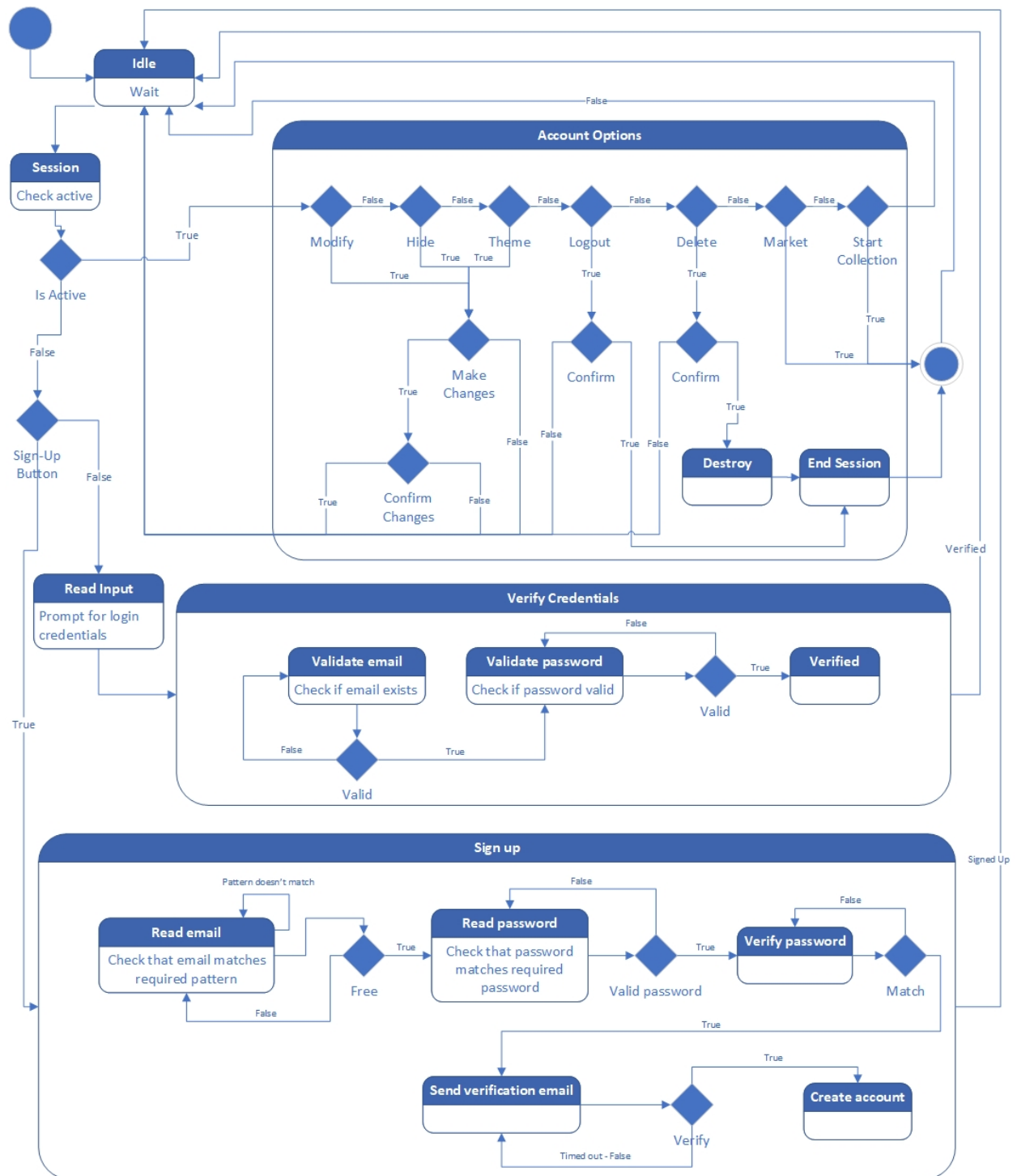
Class: Favourites	
Description - Where a collector can favorite collectors items they like.	
Responsibility:	Collaborator:
Add Favourite	CollectionItem
Remove Favourite	Customer

Class: Account	
Description - Account management so collectors can access services.	
Responsibility:	Collaborator:
Defines Customer information	Customer
Create Account	Customer
Create New Collection	Collection

Open Marketplace	Marketplace
Delete Account	Customer
Open Favorites	Favorites

Class: Collection	
Description - How collectors can group their items.	
Responsibility:	Collaborator:
Share Collection	Customer
Display Collection	CollectionItem
Add Item	Customer
Remove Item	Customer
Hide collection	Customer

State Diagrams:





Sequence Diagram:

