



# **HonorsBook Software Requirements Specification**

## **Version 1.1**

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# 1. Introduction

## 1.1. Purpose

This document describes the purpose, features, and overall structure of the Honorsbook application.

The app, being built for the California State University, San Bernardino University Honors Program under the direction of program head Dr. David Marshall is intended to serve the students of the program in an effort to improve social relations among their group of peers.

The development of the app is also intended to serve the “Senior Project” requirements for Graduation with Honors for the Honorsbook development team, in addition to serving as real-world experience for work in the fields of Computer Science and Graphic Design, as appropriate for the chosen major of each member of the team.

## 1.2. Scope

This web application will allow students in the program to identify a collection of tags which will be associated with their account, and search the system for other students based on the tags they have selected.

The app is not a social media platform, and is not built for the purpose of direct communication. Instead, the app may allow users to request provided contact information of other students so that communication can occur on other platforms.

As the current development cycle is intended only to provide a demonstrative prototype, many features may not be available at the time of the project’s completion, but may be implemented by future development teams in future years. Until the time of final app deployment, it is expected that a development team including UHP students at multiple grade levels and in multiple disciplines will be maintained in order to continue app development, with additional team members being added each year to replace those who graduate. It is the responsibility of team members at the beginning of the development cycle each year to determine the goals and development timeline for that year, and create a new version of this document accordingly.

By prototype delivery on 5/14/21, the following features are expected to be

implemented:

- 1) Navigable user interface created by graphic design and web design team.
- 2) Functioning login system which determines what information the user is allowed to access. Example accounts may be used for demonstrative purposes.
- 3) An exemplary set of tags which a logged-in user is able to select from and associate with their account.
- 4) A search system which allows a logged-in user to see a list of all users in the database which have associated at least one selected tag with their respective accounts.

Features of future versions of the app, which are not expected to be delivered in the immediate future, include:

- 1) Expansion and optimization of previous features.
- 2) Ability for a user to modify their account's public and hidden information, including but not limited to a brief self-written biography and contact information other than student email addresses.
- 3) Ability for a user to "introduce yourself" to another user, including a request to see hidden contact information which can be granted or denied by the user who receives the request.
- 4) Ability for a user to request that a tag be added to the database, which can be granted or denied by an administrator.
- 5) A tag hierarchy to make discovering accurate tags more straightforward and enjoyable for users.

### 1.3. Definitions, Acronyms, and Abbreviations

- **CSUSB** - California State University, San Bernardino
- **UHP** - the CSUSB University Honors Program
- **HB** - HonorsBook, the application being developed.
- **HTML** - Hypertext markup language, a coding language used primarily for web development which defines the positions and formatting of various HTML objects on the page.
- **Javascript** - a coding language integrated with HTML that allows for dynamic access to information and modification of webpage layout.
- **Firebase/Firestore** - proprietary software of Google which allows for creation and modification of databases which can be accessed through HTML/Javascript.
- **Login** - a software system in which a user can enter account information including a username/email address and password in order to gain access to the functions of the application.

- **Account** - the context of the app in which the user is able to log in. This context defines what information the user is able to see, and the format in which their data is stored by the app.
- **Tag** - one of a list of predefined items in the app's database relating to a person's interest or involvement, any number of which can be associated with a user's account in order to identify a sum total of that user's interests.
- **Search** - the ability for a user to view a list of other users filtered and/or sorted based on some number of input tags.
- **Social disconnect** - a phenomenon experienced by many high-achieving college students in which a difficulty in identifying and interacting with other students of similar interests is experienced.

## 1.4. References

This document is intended to be used in conjunction with the following:

- HonorsBook Maintenance Manual – [link to be added]

## 1.5. Overview

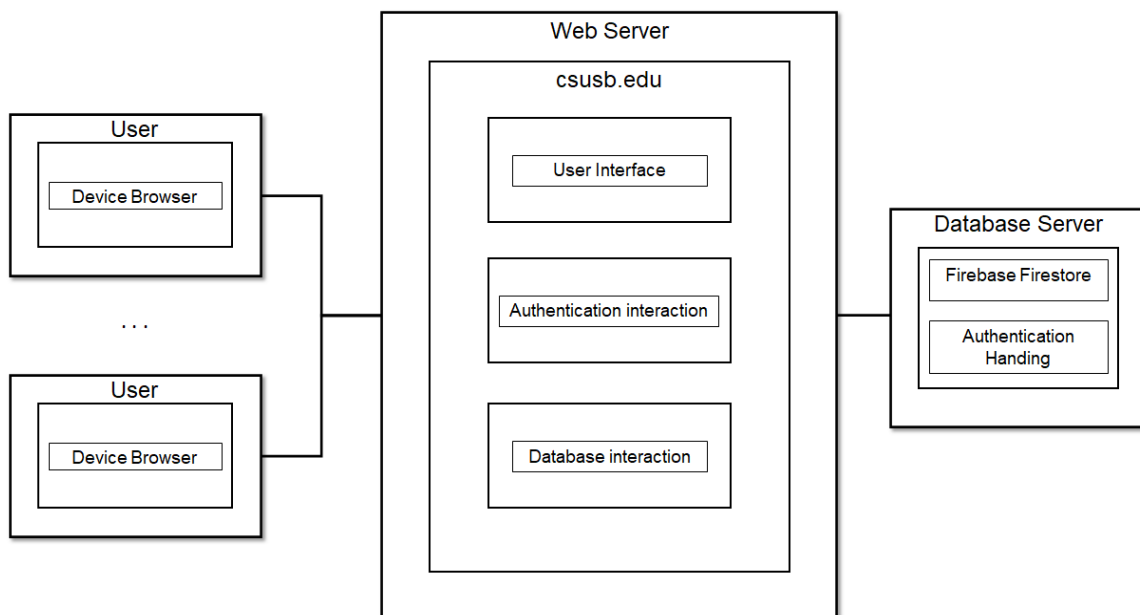
High-achieving students like those in the UHP often have trouble making connections with their peers. This social disconnect stands against the program's goal of creating a welcoming academic cohort. To address this issue, the idea of Honorsbook, a web app created for honors students, was posed. The application aims to create an environment where UHP students can be connected with peers of similar interests. A team was assembled to accomplish the separate aspects of imagery and design, and of programming and data management. The design philosophy aims for a layout that is intuitive, and creates a feeling similar to being in a library or coffee shop. Using CSUSB colors and design as a basis, further decisions behind color palettes and typographic elements were inspired by the designs used in competing social media websites and other forms of digital media. For the development of the application, HTML/Javascript are the primary languages, allowing for straightforward implementation of the design team's ideas. Additional research was required to accomplish data storage with Google Firebase, as well as the development of key features such as user profiles, and a searchable tag system. In addition to the approximation of real-world job experience for the team, the app will have a significant impact for UHP students once deployed, and well into the future. With a tailored platform for high-achieving students, it is hoped that the social disconnect experienced by many of these students can be greatly reduced.

## 2. Overall Description

### 2.1. Product Perspectives

The app will create a working database of student interests by requiring all first-time users to select some number of tags before being allowed to continue with other features of the app. The user may continue to select tags until they feel their interests are fully reflected, or choose the most important and add more at a later time. Then, the user will be allowed to search for other users who have identified similar tags.

#### 2.1.1. System Interfaces (deployment diagram)



#### 2.1.2. User Interfaces

Upon accessing any page for the first time, the user will be prompted to log in. On the home page, the user will be able to see buttons for different options, including “Tag Your Interests,” “Find a Friend,” and “View/Edit Profile.” Detailed examples of each screen will be provided in Section 3.1.1 below.

#### 2.1.3. Software Interfaces

CSUSB Academic Hosting - for web space occupied by the app  
 Google Firebase - for database and login functionalities of the app

### **2.1.4. Memory**

The web app is expected to use only minimal amounts of memory on the user's device, in order to keep track of the user's login session so that they don't have to log in again on every page. Account information will instead be stored on the app's database, hosted on Google Firebase servers. So long as the app remains in its local scope, the maximum size of the database is assumed to be arbitrarily larger than the app will ever need. Future versions of the app may migrate to University servers, with the potential for even more maximum space.

### **2.1.5. Operation**

The first delivered prototype of the app will operate exclusively through a web browser. Its availability will depend on the availability of the greater CSUSB Academic Hosting platform, as well as the Google Firebase platform, both of which are outside the scope of the app itself. So long as both platforms are available, the app can operate at any time that the user has a network connection.

## **2.2. Product Functions**

This app allows a student user to tag their profile, search for students using tags, request to view the contact information of other students, modify their profile in other ways, and suggest new tags. The app allows administrator accounts to approve suggested tags and manage student accounts.

On the home screen, after logging in, the user will be able to:

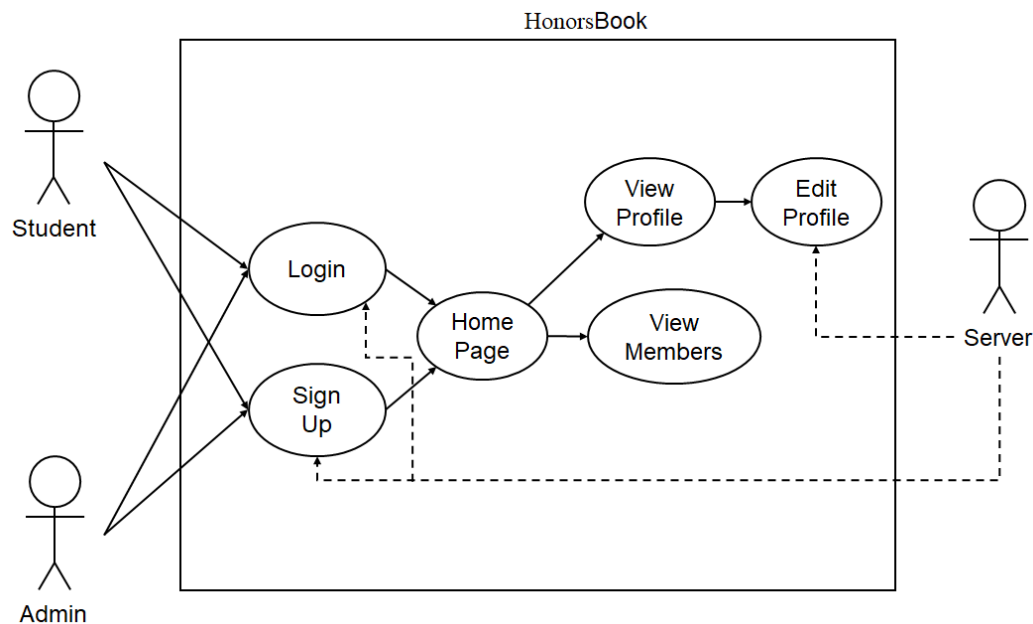
- Tag Your Interests - By selecting this option, the student will be able to browse through a sorted list of predefined tags, and select any number tags which align with the student's self-defined interests. These selections will be saved to the database until the student chooses to modify or delete them, or until the student is removed from the system.
- Find a Friend - By selecting this option, the student will be presented with a sorted list of other students in the database, in descending order based on number of shared interests and/or classes, including contact information. This list can be filtered by particular tags. Earlier prototypes of the app may instead have the user search manually for individual tags.
- Propose a New Tag - This will allow students to contribute towards correcting and adding to the initial, non-exhaustive predefined list of tags. The proposed tag will await Administrator approval before being added to the list.



- **Edit Profile** - This will allow the student to add additional units of contact information to be associated with their account, besides their Coyote email. The student can also add a character-limited bio describing themselves.

Details regarding the interface for each use case are available in Section 3.1.1 below.

### *Use Case Diagram*



## **2.3. User Characteristics**

### **2.3.1. Student**

A student user of HonorsBook is an undergraduate student at CSUSB involved in the University Honors Program, with an interest in connecting with others. It is hoped that all such students will use the app at least once. Any such student with access to a device with a web browser will be able to use the app once it is available.

### **2.3.2. Administrator**

Administrators of HonorsBook include the development team, the current head of the Honors Program, and any other individuals approved by existing administrators. For example, this may include other faculty members involved in the UHP, as well as student board members.

## **2.4. Constraints**

The first release of this application will be available for web browsers only. Future development may include a version for mobile phones. The first build of the app is expected to be quite limited in scope due to time constraints during development. It is expected that only a limited range of example tags will be available to select from. Other tags may be added in future development. The planned “request” functionality, in which one user requests to see another user’s contact information, which can be approved or denied by that second user, is not expected to be included in any form in the first prototype. Future development may also improve search features to allow for searching for more than one tag at a time, or filtering and sorting by other methods.

The development team of the app is largely inexperienced with many aspects of the app’s design. This is a large constraint on the team’s ability to quickly and efficiently produce a quality product. A significant amount of trial and error is expected during development.

## **2.5. Assumptions and dependencies**

It is assumed that the user has Network or Wi-Fi access in order to access the app. It is assumed that the user has the basic skills necessary to navigate and use the device and browser on which the app is accessed, and the similar skills required to navigate and use the app itself. Access to the app at any given time depends upon the user having an active account and the login information necessary to access it. Use of the app depends upon both the database host and the domain host being active and accessible via the user’s network.

## 3. Specific Requirements

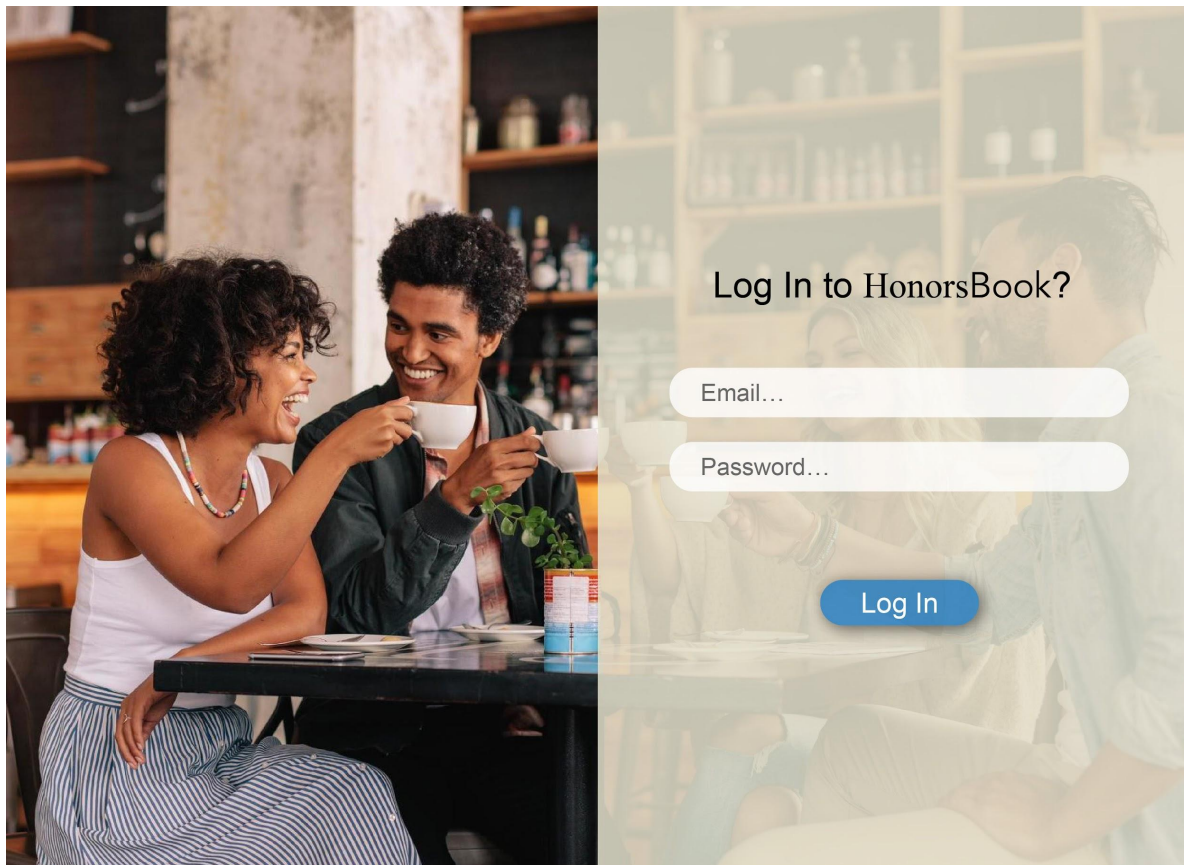
### 3.1. External Interface Requirements

#### 3.1.1. User Interface

This section shows the UI of the app.

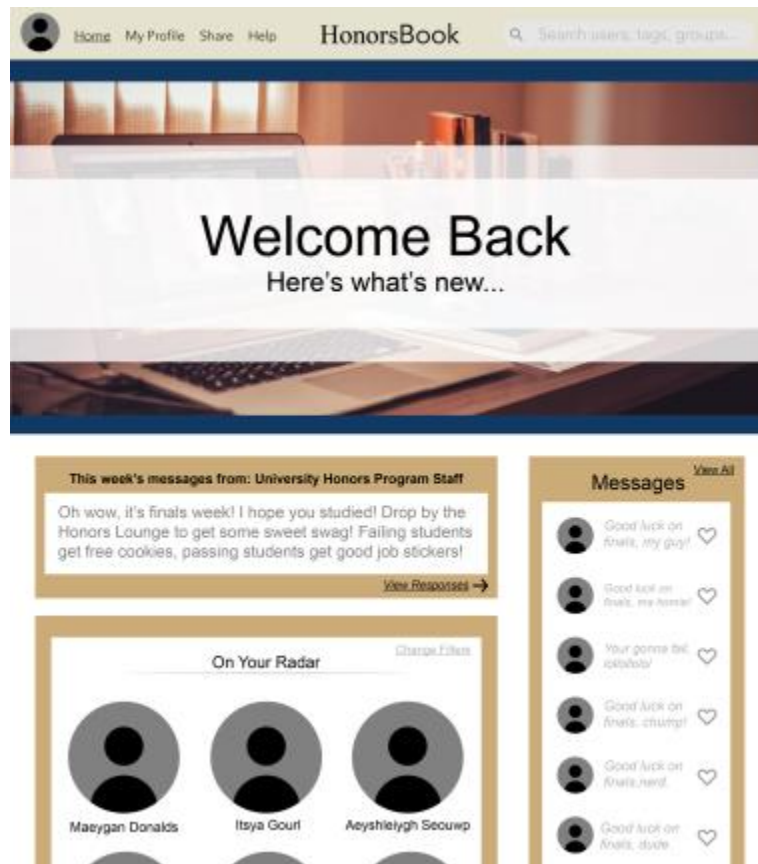
##### 3.1.1.1. Login/Signup screen

The user will automatically be directed to this page if they attempt to access any part of the app while not signed in. It contains empty text fields for the user to enter their information and either log in to the app if they have an account, or sign up for the app if they do not.



### 3.1.1.2. Home Page

The user will be directed to this page after logging in. It will present the user with a brief welcome message, and it will contain buttons for directing the user to other menus in the app. Future builds may include more advanced features, such as automated suggestions or quick access to sent/received requests.



**3.1.1.3. “Tag Your Interests” Page**

This page will show a list of all available tags. The user can check off any number of tags, and click a Save button on the top/bottom of the page to associate those tags with their account.

HonorsBook Home My Profile Share Help Log Out Search users, tags, groups...

Thank you for joining HonorsBook!

Please select your interests

+ #Biology + #Biology + #Biology + #Biology + #Biology

+ #Biology + #Biology + #Biology + #Biology + #Biology

+ #Biology + #Biology + #Biology + #Biology + #Biology

Search for a tag

Search ...

**3.1.1.4. “Find a Friend” Page**

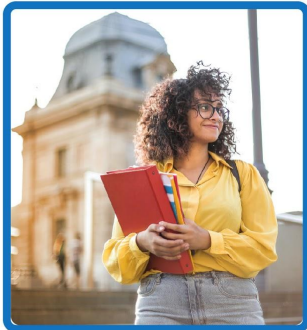
This page will contain an empty text field for the user to enter the name of a tag, and a search button. If any students are found matching the details of the search, a list of them will appear once the search button is clicked. Future builds may include more advanced search features.

[mockup to be added]

### 3.1.1.5. Account Page

This page will show all information associated with the user's account, including all known contact information and all chosen tags. A button will be available for modifying this information. In a build which includes request features, the user would be able to review sent and received requests from this page.

**HonorsBook** [Home](#) [My Profile](#) [Share](#) [Help](#) [Log Out](#)



**Ynez Reyes**  
Biology Major  
Freshman  
She/Her  
  
Interests: #biology, #medicine, #neuroscience, #research, #chemistry, #biochemistry, #astrobiology, #discoverychannel, #nature

Hi everyone! I'm Ynez! I'm a Biology student and I'm so excited to be an honors student! I'm pretty introverted so this is a bit scary but I really want to make friends, so, hello! If you're interested in biology, or medicine, or just interested in making friends, send me a message! I'd love to meet you!

My favorite color is yellow and my favorite subject is Science!

Edit Profile

### 3.1.2. Hardware Interface

The HonorsBook app will be accessible from any device with a web browser, including desktop and laptop computers, as well as smart devices. Access from a smart device would not be recommended, as page formatting would be constructed with a wider screen in mind. The app may be made more compatible with a wider variety of devices in the future.

### **3.1.3. Software Interface**

The app will be accessible from any modern web browser, including Google Chrome, Mozilla Firefox, Safari, Microsoft Edge, and newer versions of Internet Explorer. The user's web browser will interface with the web servers of CSUSB Academic Hosting, which will in turn interface with the Google Firebase server where the database is stored.

### **3.1.4. Communication Interface**

Internet access is required to use any page or function of the app.

## **3.2. Functional Requirements**

### **3.2.1. Consistent Navigation Bar**

Present on the top of all pages other than the signup/login page. Provides links to various pages in the app. Also provides a search bar which can be used to jump immediately to the "Find a Friend" page with a given text input.

### **3.2.2. Working Login System**

#### **3.2.2.1. Log In**

Appears by default when the user is not logged in. Provides text fields for the user to enter their login information, and a button to submit the information and log in. Also provides a button to switch to the signup page for the user to click if they do not have login information yet.

#### **3.2.2.2. Sign Up**

Provides text fields for the user to enter information necessary to create an account for HonorsBook, and a button to submit the information and create the account. Upon creation of the account, the user will be redirected to the tagging page to provide additional information for the database.

#### **3.2.2.3. Sign Out**

Available via a button on the persistent navigation bar. Allows the user to log out of the account that is currently signed in, preventing

further access to the app on the browser without repeating the login process.

### **3.2.3. Working User Profiles**

#### **3.2.3.1. Read User Information**

Information about a user's account in the database is organized such that individual components, such as the user's email address or chosen tags, can be called upon and displayed on the web page as necessary in a manner which is efficient to execute and straightforward to program.

#### **3.2.3.2. Edit User Information**

Information provided by the user, such as new tags, is efficiently stored in the database in a manner which does not disrupt any existing organization, and can be recalled with equal efficiency.

### **3.2.4. Working Tagging System**

#### **3.2.4.1. Adding/Removing Tags from the User**

The user is able to view the complete list of available tags, and select new ones to associate with their account, at any time. Future builds of the app will also allow the user to remove previously selected tags via their account page.

#### **3.2.4.2. Filter User Search Using Tags**

The user is able to enter the names of one or more tags in order to see a filtered list of all other users who have associated that tag(s) with their account.

### **3.2.5. Working Request/Add system**

#### **3.2.5.1. Request User**

From the search page, the user will be able to select the name of another user in order to view their profile. From there, the user may send a request for contact to the second user.

#### **3.2.5.2. Accept User Request**

If a user has received any requests for contact from other users, they will be able to view such requests from their account page, and either approve or deny the request(s). If the request is



approved, the requester will be permitted to view the acceptor's provided contact information.

#### **3.2.5.3. Remove User from Contact Sharing**

At any time from their account page, a user will be able to view the list of all users who have been permitted to view their contact information, and may revoke that permission on an individual basis.

### **3.3. Performance Requirements**

The app is expected to run with reasonable efficiency on any device with a stable internet connection. Search functions may involve a brief waiting period as the app retrieves, sorts, displays information from the database. For a typical machine with a strong connection, this is not expected to exceed 5 seconds.

### **3.4. Design Constraints**

The general design and purpose of the app has been specified by the client. The app will be programmed in HTML with Javascript, with any constraints thereof. Constraints in development time will prevent the full implementation of all intended features of the app in time for the delivery of the first prototype.

### **3.5. Software Systems Attributes**

#### **3.5.1. Reliability**

Each function of the app will undergo rigorous testing to ensure reliable behavior in all reasonable situations. Any unintended behaviors known to the development team, if left unresolved, will be clearly expressed to the client prior to delivery.

#### **3.5.2. Availability**

Early prototype versions of the app will be accessible only to individuals granted access by the development team. Upon final release, the app will be available to any current student of the UHP, and any alumna who created an account as a student.

### **3.5.3.Security**

Access to the app is made possible by an encrypted key which is unique to each user, and cannot reasonably be faked or duplicated.

A security concern with the prototype to be delivered is noted. A user with sufficiently advanced knowledge in HTML/Javascript may have the ability to examine how the code of the app works, and use this information to access the complete contents of the database. It is necessary that future developmental iterations address this issue.

Ultimately, the security of the user's account information is the result of their own actions. If an account is believed to be compromised, an administrator will have the ability to remove that account, preventing further unauthorized access.

Database information is stored on a private server which can only be accessed by the app's code and by database administrators. For the version of the app being delivered, this refers to the Google Firebase servers. Firebase servers are compliant with common security standards, and Google is held to the California Consumer Privacy Act as a data processor.

In the interest of user privacy, it has been decided that administrators will not be able to view a student's information, such as the user's chosen tags. This allows the student to be comfortable in the knowledge that their personal information is being shared only with fellow students, and not with faculty or staff.

Use of the final version of the app may be subject to an End-User License Agreement, requiring the user to acknowledge an understanding of where their data is stored and how it is used, as well as any expectations which the user is being held to. Such an agreement would also affirm that the UHP, CSUSB, and the development team are in no way responsible for the data which a student chooses to share.

## **3.6. Testing Requirements**

### **3.6.1.Unit Testing**

By the nature of HTML web development, each web page is created and tested in an independent environment before being integrated into the

wider application. Vigorous testing will be performed on each functional requirement of the app prior to integration.

### **3.6.2.Integration**

Once unit testing is completed, app components can be integrated into a complete web space. Further testing will be performed by all team members after integration to ensure quality standards.

### **3.6.3.Acceptance**

If the app or any of its components fail to meet quality standards, adjustments will be made and the unit testing process will be repeated until acceptance is met. Deployment of the app at such time will pend the final approval of the client.

## **3.7. Document Approval**

Signature: \_\_\_\_\_  
David Marshall (Client)

Date: \_\_\_\_\_