Lab 1 – Product Description

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Collaborative Outline
Version 1
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1 Introduction

Book clubs are social groups of readers who share a common interest in a title, series, or study. A survey of one thousand participants shows us that book clubs promote relaxation, calmness, concentration, improved quality of life, and a feeling of a shared community [12]. This same study shows us that members often read a book that they would not have picked themselves. Socialization is the heart of the book club as it promotes synchrony and team flow (Dana Foundation 2019) helping the club work through their story together. This brings a sense of accountability and dedication knowing that the other members are relying on each other to stay on pace. A common problem with book clubs is searching, starting, and sustaining them. Local book clubs are difficult to find and even more difficult to maintain making the online option more appealing. Current solutions like Bookclubs.com offer ways to search for clubs base on titles and genres, however majority of these groups have hundreds to thousands of members. This leaves the searching reader participating in a sea of people, possibly preventing any social connection to others. Current solutions like this make finding a close-knit group that shares the same interest difficult.

Starting a book club comes with its difficulties. Local clubs need a location, dedicated members, and someone to keep everyone interested in every meeting. Starting an online book club requires dedication, coordination, and consistency. Club creators need to find a website or platform to host their virtual meetings. Off the Shelf (2020) suggests using social media or online organization platforms such as Bookclubz or Book Movement which allow you to keep track of books for the club and send out email reminders but do not provide a solution for video and text communication. This introduces the next hardship, sustainment.

Successful book clubs need to keep members entertained and engaged. Lack of discussion prompts and topics drive member engagement (USA Today 2022). This requires that the members are caught up with the club else and have topics planned for the next meeting. Local book clubs have the luxury or keeping members entertained with snacks and drinks. Online book clubs rely on member-initiated entertainment to keep interest within the club. The use of badges and streaks are used across several industries to maintain user engagement within their products. Applications such as Apple Fitness (Kankanalli, Atreyi. 2015), Duolingo (Bilham, J. 2021), and Snapchat (Hristova, D., Dumit, J., Lieberoth, A., & Slunecko, T. 2020) offer streaks for continued usage and badges to show user achievements. This gives users ownership of their profile and promotes continued use to achieve the next streak and reward.

Book-Mark provides the platform that solve these issues while focusing on smaller groups. Searching, starting, and sustaining book clubs is done within Book-Mark’s mobile application. Readers searching for others with a common literary interest can search for book clubs based on titles, interests, and genres. Book-Mark allows users to create a club and manage its members. The use of external API gives users the ability to communicate with voice, text, and video, all within the mobile application. Book-Mark is focused on allowing club members to be heard by catering to smaller club membership to prevent readers from being lost in a sea of comments. Sustainment of clubs is complemented with the use of artificial intelligence that provides topics, conversation starters, chapter summarization and challenge questions to keep the members engaged and entertained. Badges and streaks are awarded to members who complete chapters, books, series, and correctly answer challenge question giving them ownership of their personalized profile and the ability to visualize their accomplishments.
2 Product Description

Book-Mark is a mobile application that allows users to find and create clubs based on books and interests. Book-Mark focuses on small groups to give users a more personal experience with other members and helps with sustaining group activity using Artificial Intelligence. Book club members no longer need to piece together multiple platforms for organizing, communicating, and entertaining their club. With the use of external APIs for voice, video, and text messaging, users can communicate within one application. Artificial intelligence assists clubs with keeping members engaged and entertained by providing chapter summarizations, topic generation, and challenge questions. A.I. is also used to provide clubs with personalized book recommendations based on members and club history to help the club continue into their next literary adventure.

2.1 Key Product Features and Capabilities

- Mobile application for creating and searching book clubs for small groups.
- API integration for voice, video, and text messaging.
- Artificial intelligence implemented for processing electronic copies of books or text. Use of summarization and question generation from the text provides engagement for users.
- Club specific book recommendations based on user, club, and book profiles.
- Unifies the needed platform, communication, and engagement needs to create and sustain clubs.
- Gives users a single application to search, host, communicate, and engage with their book club. Maintains member engagement with the use of AI and provides club catered recommendations to promote growth and continues use of the book club.

2.2 Major Components (Hardware/Software)

- Provide an overview of the hardware needed to support the solution.
- Describe how it is structured based on CS 410 MFCD.
- Define and describe the software to be developed.
- Hardware
  - iOS/Android mobile device with Internet access
- Development Tools
  - GitLab
  - MirrorFly
  - AWS Services
  - OpenAI
- Programming Languages
3 Identification of Case Study

- For whom is this product being developed? Why?
- Identify case study group—the small group of users who will use app prototype and provide feedback.
- Who else might use this in the future?

4 Product Prototype Description

- Provide a top-level description of the CS 411W prototype as it relates to the end product from CS 410 (i.e., the goal).
- Are capabilities reduced or eliminated? Simulated – modeled?
- Include a Table of Comparison between RWP and Prototype in section 4.2

4.1 Prototype Architecture (Hardware/Software)

- Hardware
  - Computer with Internet access
- Development Tools
  - VSCode
  - MySQL
  - GitHub
  - React Native
  - Spring Boot
  - JSDoc 3
  - JavaDoc
  - Jest
  - JUnit 5
  - MirrorFly
  - TensorFlow.js
- Programming Languages
  - JavaScript
  - HTML/CSS
  - Java
  - SQL
Product XYZ Major Functional Component Diagram

Figure 1

4.2 Prototype Features and Capabilities

- What does the prototype demonstrate?
- Why is that significant in showing how the problem is solved?
- How have you demonstrated success?
- How does the prototype address the CS 410 project risk mitigation?
- Describe the functional goals and objectives.
Table 1

*Table of Comparison Between RWP and Prototype*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Prototype</th>
<th>Real World Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>a propulsion system</td>
<td>Rubber band</td>
<td>Belt</td>
</tr>
<tr>
<td>fixed position wheels</td>
<td>Same as RWP</td>
<td>Same as Prototype</td>
</tr>
<tr>
<td>variable position wheels</td>
<td>Same as RWP</td>
<td>Same as Prototype</td>
</tr>
<tr>
<td>cockpit</td>
<td>Simulated using PC-based display and Bluetooth</td>
<td>Operator will use</td>
</tr>
<tr>
<td>Exhaust distribution element</td>
<td>Simulated on PC-display</td>
<td>Real combustion</td>
</tr>
</tbody>
</table>

*Note: A figure/table should be embedded within a section. There should be text before and after a table/figure. A section should neither start nor end with a figure/table.*

4.3 Prototype Development Challenges

- Describe the expected challenges to be encountered while completing the prototype – e.g., knowledge missing, capability missing, supporting technology issues.
5 Glossary

- Definitions, acronyms, or abbreviations used in this document. This section should only include those terms or abbreviations that are not commonly known or are unique to your product.
- Terms should be bolded followed by a colon and the definition.

<Note: This must start at the top of a new page>

Example:

Radio Frequency Identification (RFID): an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders. An RFID tag is an object that can be attached to or incorporated into a product, animal, or person for the purpose of identification using radio waves.
6 References


