CS 401-001: Capstone
Software Requirements Specification
(SRS) Document

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The Choice Is Yours, v.0.1

Android Mobile Application

May, 2023

Revisions

Version	Primary Author(s)	Description of Version	Date Completed
Draft 0.1	Tammy Busche	Partial draft including introductory and functional requirements sections	05/25/23
Draft 0.2			

Review & Approval

Requirements Document Approval History

Approving Party	Version Approved	Signature	Date
Project Manager			
Professor Steve Sheehy			

Requirements Document Review History

Reviewer	Version Reviewed	Signature	Date
Angela Dickinson	Draft 0.1		05/26/23
Tammy Busche	Draft 0.1		05/26/23
Steve Sheehy	Draft 0.1		05/26/23

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1. Introduction

1.1 Purpose

The purpose of this requirements specification document is to describe in detail the CS 401 Capstone Project *The Choice Is Yours* Android mobile application functionality. This document will serve as a guide to demonstrate the intention for the application's purpose, use and user interface, platform requirements, and design concepts. Also included are application attributes, resources, assets, and images outlining design architecture.

1.2 Scope

The Choice Is Yours application electronic book (eBook) application. The unique aspect of this eBook app is that it is designed for the use of Gamebooks, a fictional genre of book that the series `Choose Your Own Adventure` is based on. These books are not read linearly where at the end of each section, referred to as *chapters* or *nodes* in this document, provide the user options as to how the story will continue.

Due to this story format, mechanisms are included in the program that displays to the user the chapter contents, images, next chapter options, selectable objects (buttons), and updating the chapter according to which option is chosen.

Aside from the main eBook reading functionality, the user will have the capability of visualizing different story branches that have been read. This requires the user to have a unique login ID (UUID) and database access. The database is used to retain data concerning story chapters and the *visited* status for each chapter. The database also retains chapters bookmarked. This bookmark is used for quick navigation to a particular chapter when accessing an eBook.

1.3 Intended Audience

The audience Gamebooks appeal to demographics from child to young teenager. However, this genre of book is also nostalgic for adult audiences. The eBooks for this app are written using the English language.

1.4 Definitions, Acronyms and Abbreviations

eBook – A book in an electronic format.
Chapter – A section of the eBook progressing either to a choice or to the end of the story.
Node – A chapter in context to its use to display Story Progression.
Firebase – An online application development service provided by Google.
Button – Interactive display objects allowing functionality.
Assets – Application files that are read only.
Recourses (Res) – Application static content files used for app format and display.
Activity – Section of the application. e.g. Book Scrolling, Story Progression.

2. User Requirements

2.1 User Authentication

The application allows the user to create an account or sign in using existing credentials. Goggle Firebase is used to maintain user authentication data. Firebase utilizes the user's email address and a user-generated password for the login.

The application also provides a password recovery option. For the case where a user forgets their login password, the user is prompted to provide their account email, and a message is sent navigating the user to the reset password option.

2.2 eBook Selection and Navigation

The user is provided a small library including five (5) eBooks. The book titles are displayed in the library and the user can select one of the books to proceed to the reading activity. The reading activity begins with the book cover displayed. When the user proceeds, page 1 of the book appears on the screen in the book scrolling activity.

Within the book scrolling activity, the user has access to a menu. The menu has options including returning to the main screen, bookmarking and navigating to a bookmarked page, navigating to the beginning of the book, returning to the library, logging out, closing the application, displaying story progress, and deleting story progress.

Book navigation occurs as the user select option buttons displayed at the bottom of the chapter. Chapters may have one (1) up to four (4) buttons. When there is another chapter available to choose from, the displayed buttons are numerals. There are 2 circumstances where a user will only have one button displayed; either when the next chapter is predesignated or when the chapter is, "The End." When selecting the button at the end of the story branch, the user is navigated back to the book cover.

2.3 Offline Reading

The user is able to access the library and eBooks offline. The eBooks themselves are stored within the application's Assets folder. When the user is offline, the application will not be able to update or review story progress or utilize bookmark capabilities. All other story access options and reading is functional.

2.4 User Instructions

Navigation and use of the application should be relatively intuitive. An `Instructions` option is included to guide users with functionality, menu options, story progression review, and user registration and authentication.

3. System Requirements

3.1 Functional Requirements

In terms of user provided inputs, the only required inputs are for a user email and password for use with the Firebase database. The application utilizes on-screen touchable buttons for control to navigate between screens and controlling the book scrolling activity.

3.1.1 Operating System

This application is compatible with Android devices. The minimum Software Development Kit (SDK) is Application Programming Interface (API) is Version 5, SDK/API Level 21: Android 5.0 (Lollipop).

3.1.2 Device Compatibility

The application is compatible with Android phone and tablet devices. The application displays content in a portrait-view format exclusively with the exception of the Story Progression activity.

Screen resolution of all ranges are compatible with the application. However, screen sizes less than approximately 4.7" are not adequate to display all content allowing functionality. The appearance for the application is optimal for displays sized approximately 5.5" to 6.5".

3.1.3 Network Connectivity

An internet connection is an optional for application use. The primary functionality for the application, namely the book scrolling activity, operates successfully offline. However, the application utilizes Google Firebase for user authentication and storage for story progression and bookmarks.

Future versions of the software may require intent connectivity for the ability to download additional eBooks to the library.

3.2 Nonfunctional Requirements

The application only performs `write` operations to the online Firebase database. It cannot write any data to the user's local platform after it is installed. User control was designed to be intuitive, but instructions are provided for user clarity. The application is of relatively simple complexity. As such, operations should be fast and fluid. Any lag observed by the user during use should not be a product of the application itself.

3.2.1 Security

User registration and authentication requires the user provide an email and password for their login credentials. Rules have been assigned to the Firebase database to only allow authenticated users to access their personal database assets (story chapters visited and bookmarks).

3.2.2 Device Storage

The application requires a minimum of 40 MB of available space on the Android device it will be installed on.

3.2.3 Organizational Requirements

The application was designed primarily using the Kotlin programming language. Java use also used for the Story Progression activity. The development environment used to design the application is JetBrains IntelliJ IDEA (using the Android development plugin). The Gradle build automation tool is used to store and coordinate Android build features and implementation dependencies, including those for the use of the GraphStream library for Story Progression visualization and for Google Firebase connectivity. Git and the online repository GitHub has been used as a version control system during development of this application.

3.2.4 External Requirements

The current version of this application is not intended for public release. It uses copyrighted material, namely the *Choose Your Own Adventure* book series, for its eBook library. This version of `The Choice Is Yours` is intended for demonstrative purposes only.
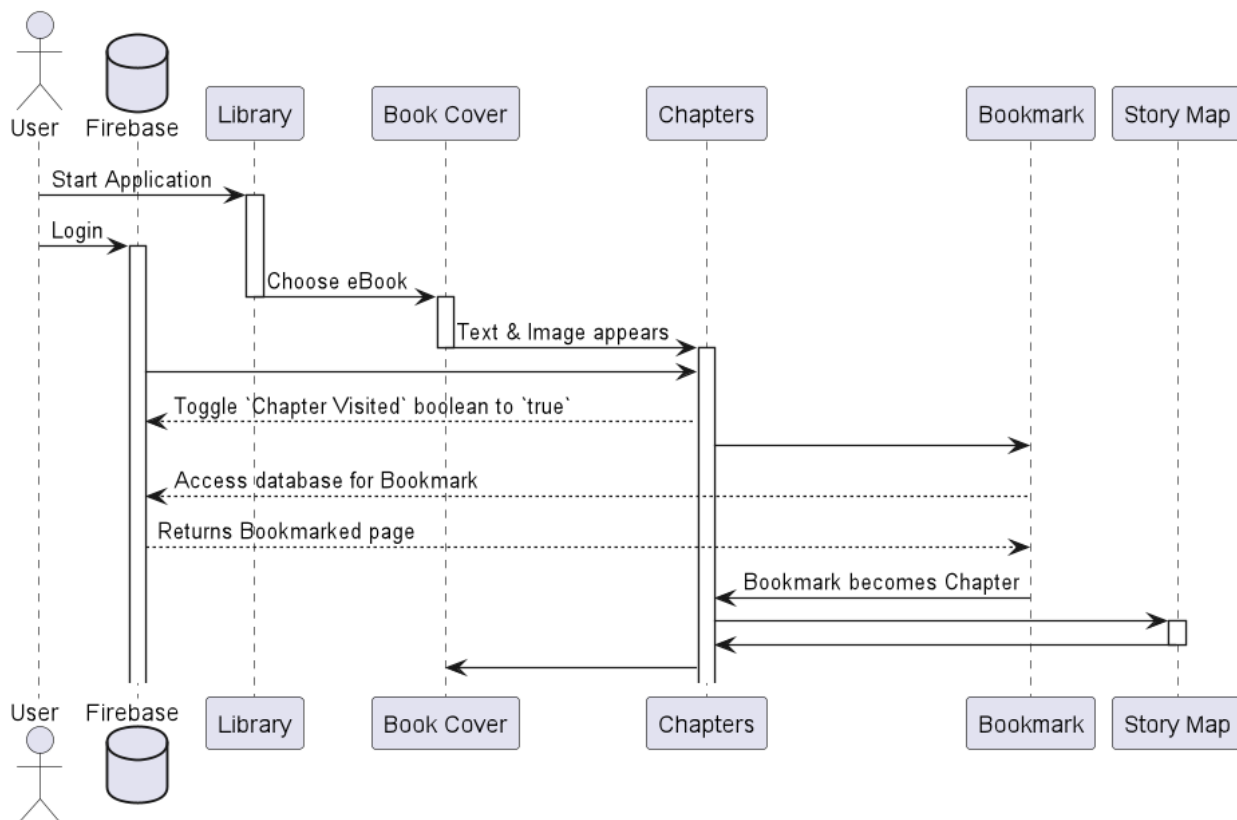
Future versions of this application must use original story content including text and images, with the removal of the current eBook content, for public distribution. It is recommended that any original material be copyrighted specifically for use with the application.

4. Preliminary Use Case Model and Sequence Diagram

4.1 Use Case Model
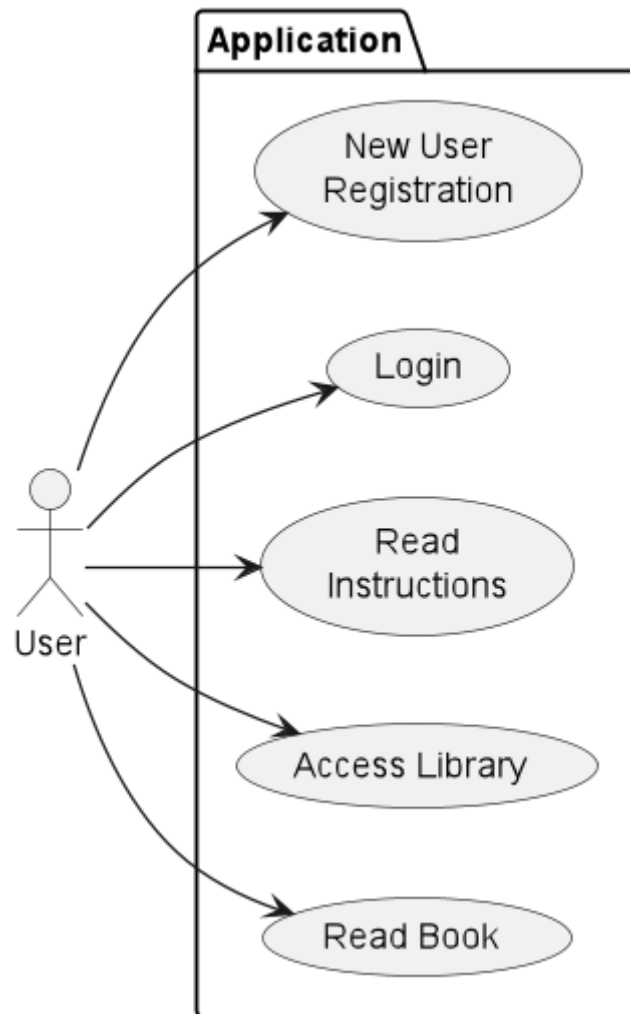
4.2 Sequence Diagram

5. Appendices

5.1 References

Firebase website URL: https://console.firebase.google.com/

GitHub application URL: https://github.com/Tamsters24/The_Choice_Is_Yours

Sheehy, Steve. "CS 401: Capstone - Course Syllabus" 2022. PDF file.

5.1 eBook References

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Montgomery, R.A. "Journey Under the Sea." Bantam Books. 1979.

Terman, D. "By Balloon to the Sahara." Bantam Books. 1979.

Montgomery, R.A. "Space and Beyond." Bantam Books. 1980.

Packard, Edward. "The Mystery of Chimney Rock." Bantam Books. 1980.