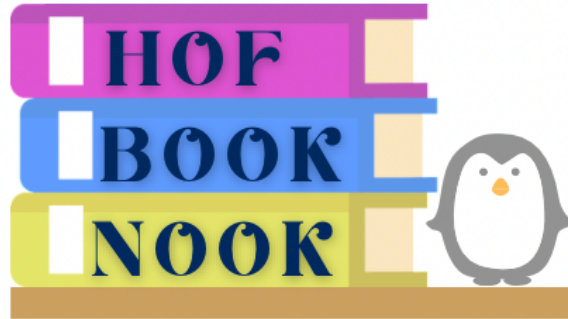# The Hof Book Nook

Requirements Specification Document

Version: 2.0

Date: 11/29/22

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I. Preface

The purpose of this document is to lay out a detailed presentation for a better way for students to buy and sell textbooks. Additionally, this document illustrates the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli.

II. Introduction

The Hof Book Nook is a local textbook exchange platform that enables students to buy and sell textbooks with more simplicity and at a more attractive price, for both the buyer and seller, compared to using the Hofstra Bookstore or any other kind of physical textbook distributor.

In general, both physical and online bookstores with a textbook buyback program buy textbooks from sellers and then resell them to buyers for more than the price they acquired it at. This is both a 'loss' for the buyer and seller. There is an opportunity to structure a sweeter deal for both the buyer and seller where they both leave happier; the buyer gets a cheaper price and the seller receives more money for their textbook compared to if they used a textbook buyback program.

The Hof Book Nook is a platform that seeks to structure these deals for the buyer and seller and then connect them with each other through email so they can proceed with a transaction.

III. Glossary

- AI - Artificial Intelligence

- DB - Database

- ISBN - International Standard Book Number: https://en.wikipedia.org/wiki/ISBN

- pfp - profile picture

- TBN - The Hof Book Nook (aka the system being described in the doc)

- 'TBN fair price' - is the competitive pricing edge of TBN, using this price buy and seller get a better deal then using traditional book store system

- 700# - hofstra ID number

- Visitors - People who visit TBN but don't have a TBN account

- Users - People with a TBN account

- Buyers - Users who intend to buy a book using TBN

- Sellers / Listers - Users who intend to sell a book using TBN, hence they list their book on TBN

- Listing - a user's offer to sell a book at a given price on TBN

IV. Functional Requirements

A. Making and using an Account

    User's will be able to sign-in and sign-up through a login/sign-up page on the app. This will be necessary for students to gain access to the functions of the Hof Book Nook app. To sign-up, students will need to provide their hofstra 700#, their pride email address, and full name. The users 700# must have the leading "h" before the 700. The information entered by the user will be stored in a Firestore database after checked for proper credentials. First, the system will check that the user enters an email to contains "pride.hofstra.eda". Additionally it will

ensure that the username from the user is an h700#. Once this is completed Firebase Authentication will confirm that there is no other registered account with the same email. If not the account will be created.

Passwords are automatically encrypted when sent to the Firebase Authentication database. According to their website, "Firebase Authentication uses an internally modified version of scrypt to hash account passwords. Even when an account is uploaded with a password using a different algorithm, Firebase Auth will rehash the password the first time that account successfully logs in." Passwords can not be accessed from the database console and can only be changed if the user requests a reset password link from the app.

Users of the app will remain logged in unless they explicitly choose to log out. They will be able to log back in either by using their h700# username or their pride email address along with their password. As stated previously, if a user forgets their password or chooses to change it they will be able to do so by using the reset password function from the login screen.

B. Selling a Textbook

The Hof Book Nook utilizes a Firebase Firestore database to store information about textbooks available for sale throughout the application. Users will be able to add new textbooks for sale to the database by posting a listing using an ISBN number, the condition of the book, and the price they wish to sell the book.

The condition of the book option will be split into three categories.

- The first is "like new". This means that the textbook is in the same condition as when it was bought, no annotations, cover damage, etc.
- The second condition is "slightly used". This would include some wear and tear to the cover and pages, some annotations, etc.

- The last category is "acceptable". If a textbook is acceptable it means that it is still usable but not in the best conditions. For example, many of the pages have writing on them, the cover or spine is not in optimal conditions, etc.

The Google Books API is used to obtain more information about the textbook the user wishes to sell. This includes the title of the textbook, the author of the textbook, and a description. Once the user publishes the listing the information will be stored in the Firestore database. Sellers will also have the ability to check an active listing log. This is accomplished by checking the database for textbooks that are for sale that have a seller email that matches the email logged in.

From the same active listing log, the seller will be able to mark their textbook as in negotiations. This will let other users know that the textbook hasn't been sold yet but there is a chance it will be soon. In addition, sellers can delete a listing which will remove the listing from the database which will in turn remove it from search results for all users.

C. Searching for Textbooks

Another main feature of TBN is to search books by ISBN, title, or author. They will be able to access this function from the home page. Once a user searches for a textbook they will be brought to a separate results page. The results are found in a similar way as to how the database is searched through for the "My Listings" display. Instead of searching for matching emails, the system searches for a matching ISBN, title, or author in the database and feeds back the results.To avoid parsing through the database for all three search scenarios each time, the user will be given a drop down menu in the home page where they have to select what type of search they are intending.

- Searching for the ISBN is the most accurate way to find the correct edition of a textbook.

On the result page, users will be able to see a list of books that matched their search query. For each book they will be presented with the title of the textbook, the condition, and the price (or "in negotiations" tag if a seller has activated it). From this results page they will be able to access more information on the textbook. When a user clicks on a book they will be given the author of the textbook and a description of the book in an alert dialogue box. Additionally, the contact seller function will be in the same alert dialogue.

D. Purchasing a Textbook

As stated before when a user taps on a book result they will be presented with an alert dialogue box with information about the book. Below this information they will be presented with text that states, "Interested in this book? Do you want to email the seller of the book?". When a user presses "send email" the seller of the textbook receives an email in their inbox from HofBook Nook which is sent using the emailjs API. From here, the seller can choose to flag the listing as "in negotiations" to let other buyers know the book may be sold momentarily. Once the transaction between the seller and the buyer is complete, the seller will have to remove the book so that no other student believes that it is still available for sale. If the transaction is not completed due to failed negotiations, the seller will also be able to remove the "in negotiations" flag to make sure other buyers can still request to obtain the book.

E. Additional Functional Requirements

Additional functional requirements include navigation tabs at the top to switch between pages and scroll bars to view more information. This will simplify the user experience on the application.

V.   Non-Functional Requirements

A. External Requirements (Deadlines)

There are additional non-functional requirements that must be taken into consideration while creating this application. The first one that must be the deadline. The project will have to be completed by Thursday, December 1st, 2022. Additionally, check-in deadlines will be set up periodically to ensure that the project is on track.

B. Organizational Requirements

To provide simplicity when using the API and the search function for users, ISBN numbers will be limited to ISBN-13 numbers.

C. Product Requirements

Another thing that has to be ensured is that the application will be able to be used by multiple users at the same time. Hofstra University has thousands of undergraduate and graduate students who will be able to use the application. This is not including the fact that alumni will also be able to maintain their accounts and sell textbooks from it even after they graduate. If the Hof Book Nook app is unable to support all these users, is functioning at an unusable speed, or has other types of bugs, users will feel less inclined to use the application.

In regards to performance of the application, the app will run without any slow down. i.e.: It should not take longer than about 2 seconds for any feature of the app to serve the user with its intended function.

VI.   System Models

Figures 1-3 show the start pages for the application. When a user opens their application on their

Figure 1

Figure 2

Figure 3

phone they will be be given the login screen that is shown in Figure 1. If a user clicks on a the bolded "here", they will prompted

to enter their email to send a rest password link. If the user clicks create account they are sent to

the page seen in Figure 2. This is where a user will be able to create an account for Hof Book

Nook. Both screens would give the user the ability to alternate between them by having the

buttons that say "create account" and "login". If the user were to exit the application for an

extended period of time before completing the sign-up or login process they will be directed

back to Figure 1. Once the user is in their account they will be sent to the home screen of the

page, present in Figure 3.

On the home page there is the search bar were a user enters their search criteria, the drop

down button to select the type of search they want, and a searh button. Above this they are

presented with a button bar to navigate between the home, my listings, and my account page.

Figure 4

Figure 5

Figure 6

Figures 4 and 5 show different examples the user will get from their search results. When the user searches for a textbook with a valid ISBN number, author name, or title they will get the results that correspond with that search criteria (Figure 4). Meanwhile if the number they submitted is invalid or there are no textbooks with that search criteria for sale they will get a page that says "no more results were found" (Figure 5). If a user searcesh for a textbook and one of the options is currently in negotiations it will display it in the result information. This way they can come back to check on it at a different time.

Figure 7

Once a user selects the textbook they want they will be given an alert dialogue (Fiigure 6). The alert dialogue will give them more information on the textbook. Additionally if they choose to purchase the textbook then they will be able to press the email seller button. After pressing the button they will be able to negotiate with the seller off the app. about the textbook purchase.

Another page that a user has access to is the "my listings page". On this page they will be presented with a list of book that the user is choosing to sell. If a seller clicks on a book they will be presented with the option of giving the book the in negotiations tag.

There are threemore pages the user will be able to access on the app. The first being their account page as shown in Figure 8. From the account page the user will be ablee to logout of their account, access the add listing page, and the remove listing page. The page to upload

| Figure 8 | Figure 9 | Figure 10 |

a listing is presented in Figure 9. There are two text inputs for the ISBN number and price of the book, and a drop down button for the condition of the book. Finally Figure 10 depicts the remove listing page. The list appears similar to the one seen on the my listings page. The difference being that if the seller clicks on a textbook on Figure 10 it will be deleted from the app and database.

VII.   System Evolution

The Hof Book Nook is a simple application that provides students with an easier way to buy and sell textbooks. However there are advancements that can be made to the application after the main requirements are completed.

For example, Hof Book Nook allows sellers to input the price that they want to sell their used textbook at. If we were able to provide a way for the user to see what the average price for a book in that condition is being sold on different websites they would be able to decide on a selling price that is competitive with the market rate.

Another advancement that can be made is allowing users to switch between different languages on the app. There are many international students at Hofstra whos first language isn't English. Although they'd be able to use the application having the ability to switch languages would make the application effortless for them to use.

One more main component of the application is the fact that buyers communicate externally from the app with sellers for the sales of textbooks. If at one point we were able to provide an in-app method to allow communication between the seller and buyer it would simplify the process. Additionally, an in-app method to purchase the books will also be beneficial for simplifying the sale process.

A final evolution for the application that would be beneficial to the application is more on the programmers side. Once a user notes that a book is under negotiations they will be given a time limit to sell the book. Once the time limit is reached their book will be removed from the database and listings. This allows more space in the database for users to upload textbooks and also ensures that the seller is keeping active communication with the buyer over the sale. If they were unable to complete a transaction they can remove the "in negotiations" tag and the timer will stop. If the seller does not remove the tag and is still keeping the book as listed they will have to upload the textbook again.