

NYU Used Books Marketplace Requirements and Specification Document

February 16, 2005

Version 1.7

1 Project Abstract

The proposed system will offer a web-based interface for NYU students to conveniently find buyers for their used books. Students will be able to offer their used books for sale at their own prices. Students wishing to buy used books will be able to search the listings for the desired book and order it from any seller that is offering the book. The system will not deal with monetary transactions directly. The seller and the buyer will agree on the payment and book delivery method. It will be possible for the buyer and the seller to just meet up on campus and pay in cash. They will also have an option to pay through PayPal and ship the book.

2 Document Revision History

Rev. 1.0 February 12, 2005 – initial version

Rev. 1.1 February 14, 2005 – added "book availability notifications" section and two use cases concerning adding a new book to the catalog and availability notifications

Rev. 1.2 February 15, 2005 – incorporated more use cases

Rev. 1.3 February 15, 2005 – fixed "buy a book" use case post-conditions

Rev. 1.4 February 15, 2005 – created a new use case for changing book price and modified some other use cases and nonfunctional requirements.

Rev. 1.5 February 16, 2005 – added the books catalog section to user requirements

Rev. 1.6 February 16, 2005 – added the use case diagrams at the end of the doc

Rev. 1.7 February 16, 2005 – updated the "find a book" diagram

3 Customer

3.1 User Base

This system is intended for the entire NYU student community. This translates to about 50,000 people. The NYU student community is the customer. Since all project developers are NYU students, they can fulfill the role of the customer themselves.

3.2 Informers

Gordon White – A fourth-year student in CAS.

Eugene Eltsufin – A third-year student in CAS.

4 Competitive Landscape

Buying textbooks is one of the major expenses for college students. Therefore, students seek to save some money by purchasing and selling used books. The existing methods of selling and buying used books available to the students are inefficient. Whether it is the

NYU Bookstore, Amazon.com Marketplace, eBay, or some other middleman the efficiency of the transaction is compromised. The middleman charges a fee for the service and both the buyer and the seller directly or indirectly lose some money to the middleman. The proposed system seeks to provide a free service for students to sell books directly to other students, avoiding paying any fees to the third party.

4.1 The NYU Bookstore

For students at NYU, the NYU Bookstore is the primary source for purchasing and selling used textbooks. The bookstore sells used books at 65% of the original price, whereas they buy used books from students for at most 50% of the original price. In effect, the NYU Bookstore charges at least 23% commission in the process of reselling used books bought from students. Often, the NYU Bookstore will only pay a small fraction for your used book (as little as 10%) or will just refuse to buy it if you bring the book in at the wrong time or if the book is not used in any of the courses in the next semester. Apparently, this is inconvenient for students.

However, the advantage of the NYU Bookstore is that it is very safe because the seller and the buyer do not deal with each other directly. When the student is buying a used book he/she can assess the condition of the book on the spot before making a decision to buy it.

4.2 Amazon.com Marketplace

Used books can also be sold through the Amazon.com Marketplace. However, Amazon.com charges the seller \$0.99 plus a 15% commission fee for each book sold. In addition, the seller has to deal with the shipping of the books to any part of the country. Amazon.com credits some of the shipping charges to the seller, but the seller will often have to spend more money on shipping depending on the size and weight of the package.

The general model that Amazon.com provides is what we might call the “retail model”—the sellers are forced to compete among themselves to offer the lowest price for a particular book. This model is convenient for buyers because they do not have to deal with bidding and waiting for the auctions to finish.

4.3 eBay

Another popular place for selling and buying books online is eBay. They use the “auction model”—the seller sets up an auction for a certain duration and the buyer with the highest bid at the end of the auction buys the book. There are a number of drawbacks to this model. Usually, students start looking to buy books online right at the beginning of the semester, when they need to get them fast. They cannot afford to wait until the end of the auction to just find out whether they won the bid. In addition, eBay charges the seller an insertion fee which ranges from \$0.25 to \$4.80, and an auction closing fee which is about 5.25% of the final value. The insertion fee is charged even if the item is not sold at the end of the auction.

5 User Requirements

5.1 Login

Certain parts of the system should be completely public. For example Book Search and Book Home should be public. However, the user will have to login as soon as he/she wants to access the buying or selling functionality. The login screen will also allow the user to retrieve the forgotten password by email.

5.2 Account Management

5.2.1 New User Registration

Only NYU students should be able to register. This can be partially ensured by allowing only people with an email account ending in @nyu.edu to register. During registration the user will have to provide the following information:

- **Personal Information:** first name, last name, NYU email address, and optionally home address and phone number.
- **Public Username:** this name will appear on public parts of the system where appropriate, such as in the listing of the book offers and profile management.

5.2.2 Personal Profile

The users should have an option to edit the personal information provided during registration.

5.2.3 Seller Inventory

This view should provide a listing of all open, closed, and sold book offers of the seller. For open offers, the seller should be able to edit them. The properties that can be edited are price, transaction options, and comments.

5.2.4 Transactions History

A listing of all past buying and selling transactions for the user. The buyers can provide feedback about the seller for completed transactions.

5.3 Books Catalog

The system will need to maintain a database of books that can be offered for sale by the sellers and requested by the buyers. The books database might not be complete, but the user should be able to add a new book to the catalog, if it's not already there. The admin should be able to review the newly added books and make corrections to the data if necessary.

5.4 Buying

5.4.1 Book Search

The buyers and the sellers should be able to search for available books by ISBN, Author, and Title.

- If there is exactly one matching book, then the user must be immediately redirected to the book's home page.
- If there are multiple search results, then the user must be presented with all books matching the search query in a table format. The following information should be presented in the table: ISBN, title, author, Availability (how many offerings), lowest price.
- If the book is not found, the user should be able to add the book to the database.

5.4.2 Book Home

All major operations on the book are accessed from this page.

- There should be a "sell yours" button for the sellers.
- Listing of all sell offers for the buyers.
- Preferably, the image of the cover of the book should be displayed. (low priority)
- The price at which the NYU Bookstore sells the book should be displayed, or a direct link should be provided to conveniently check the price.
- All offers for the book should be listed on this page together with a "buy" button. (See Book Offers Listing.)

5.4.3 Book Offers Listing

This will be displayed on the product home page. The following information should be included for each offer: seller username, book condition, book comments, available transaction options, price, and the buy button.

5.4.4 Book Availability Notifications

If there are no sell offers for a particular book, the buyer should be able to sign up for an automatic email notification. When a seller would add a sell offer for the book, the buyer would receive an email saying that a sell offer had been posted.

5.4.5 Seller's Public Profile View

In the Book Offers Listing, the buyer should be able access more information about the seller by clicking on the seller's username. The information that will be publicly provided about each seller is the following:

- rating
- how many books sold
- buyer feedback
- other books currently offered

5.4.6 Checkout

After the buyer clicks on the "buy" button next to an offer, he/she is directed to the checkout page. On this page the buyer must select the transaction type (see Transaction Options) from the ones that the seller made available. If the selected transaction requires shipping, then a shipping charge will be added to the price of the book. Once the buyer selects to finalize the transaction, the sale will become official and both the seller and the buyer should receive an email confirmation of the transaction.

5.5 Selling

Sellers must be able to adjust prices on the offered books.

5.5.1 Inserting a New Offer

The seller will have to specify the following information when creating a new offer for a book:

- book condition selected from a drop-down (New, Like New, Used, etc)
- comments describing the condition of the book in more detail
- price
- Available transaction options (see Transaction Options)

5.5.2 Price Drop Alerts

This feature has low priority, but ideally, the seller should have an option to receive and email alert when his lowest price for a particular book gets beaten by another seller.

5.6 Transaction Options

Generally, the actual payment and delivery is not managed by the system directly. When the buyer is buying the book, he/she must select a transaction type from the ones that the seller made available. There will be two major ways for transaction completion:

5.6.1 In-Person Transaction

The seller and the buyer may agree to complete the transaction by meeting in person somewhere on campus, where the book will be exchanged for the price at which it was sold online.

5.6.2 Online Transaction

In this type of transaction the buyer will have to pay the seller through PayPal. As soon as the seller receives the payment, he/she must ship the book to the buyer.

5.7 System Administration

The system will have one or more administrators.

5.7.1 System Statistics

The admin should be able to check overall system statistics: total number of registered users, total number of books sold, and the number of currently open offers.

5.7.2 Account Suspension

This feature has low priority, but at some point it might be necessary to suspend some accounts due to complaints or violations.

6 System Requirements

6.1 Use Cases

6.1.1 Creating an new account

The purpose of this use case is to describe the procedure of creating an account in the system

Pre-conditions:

None

Post-conditions:

- An account is created for the user

Basic Flow:

1. The user is in the homepage
2. The user clicks on “new account” link and is taken to the account creation page
3. The user enters all their information and clicks “create” button
4. If the username already exists, an error message appears alerting the user and asking the user to choose another username. If the username does not exist, a confirmation appears letting the user know that the account has been created

6.1.2 Login to myHome

The purpose of this use case is to describe the procedure of logging into the system

Pre-conditions:

- The user has created an account already

Post-conditions:

- The user is logged into the system

Basic Flow:

1. The user is in the homepage
2. Under the [login] section, the user enters their username and password and clicks the “login” button
3. If the user enters an incorrect combination of username and password, an error message appear saying that the username and password does not match and gives the user the ability to login again

6.1.3 Finding book home

The purpose of this use case is to describe how a user would find a book

Pre-conditions:

None

Post-conditions:

- The user is presented with a list of books that possibly match the criteria they entered

Basic Flow:

1. The user is in the homepage or their “home”
2. The user clicks on “search” link and they are taken to the search page
3. The user is allowed to search a book in a variety of ways
 - a. ISBN
 - b. Title
 - c. Author
4. After entering either one or more of the above criteria, the user clicks on “search” button and the system displays all possible matches
5. The user is then allowed to view information about the book as well as buy it (see **Buying a book that is available** use case)

6.1.4 Listing a book for sale

The purpose of this use case is to describe how the user would list their book for sale

Pre-conditions:

- The user has an account created
- The book that the user wants to sell is in the system's books catalog
- The user found the book and is on the "book's home" page

Post-conditions:

- The user's sell offer for the book is added to the database and is available for purchasing.
- The new sell offer is listed on the "book's home" page

Basic Flow:

1. The user is in the “home” page of the book they want to sell
2. The user clicks on “sell yours” link
3. If not logged in, the user is challenged to login into the system
4. The user is allowed to enter the details for their book such condition, price, method of payment etc.
5. The user clicks on “finalize” button to complete the transaction

6.1.5 Buying a book that is available

The purpose of this use case is to describe how the user would buy a book that is available

Pre-conditions:

- The user has an account created and has found the book they want
- There is at least one sell offer for the book

Post-conditions:

- The book is added to the user's transaction history
- The seller is notified by email about the purchase
- The book is removed from the "available for sale" list

Basic Flow:

1. The user is in the "home" page of the book they want to buy
2. The user selects one of the offers from the list of available ones by selecting "buy"
3. If the user is not already logged in, they are challenged to do so
4. The user confirms their transaction by selecting "finalize"

6.1.6 Adding a new book to the books catalog

The purpose of this use case is to describe how a user would add a new book to the database if it is not already there.

Pre-conditions:

None

Post-conditions:

- A new book is added to the database
- A book home for the book is created
- The book can be found through the book search

Basic Flow:

1. The user is on the homepage or their "home"
2. The user clicks on "add new book" link and is taken to the new book creation page
3. The user is asked to fill in all of the following required fields: ISBN, Title, Author.
4. After entering the required information, the user clicks the submit button.
5. The system checks whether the database already contains a book with the specified ISBN.
6. If a book with the specified ISBN already exists, the user is displayed an error message and is prevented from creating a duplicate entry in the database.
7. If there is no entry in the database with the specified ISBN, then the book is added to the catalog with the information that the user provided.

6.1.7 Signing up for book availability notification

The purpose of this use case is to describe how a user would sign up for an automatic email notification for a book that does not have any sell offers.

Pre-conditions:

- The user is on a "book home" page (see **Finding a book home** use case)

- The book does not have any sell offers

Post-conditions:

- The user's request to receive an automatic email notification for the specified book is recorded in the system (unless the action was aborted by the user).

Basic Flow:

1. The user clicks on the "notify me when available" link.
2. The user is presented with a confirmation page that asks the user to confirm that he/she would like to be notified by email when a seller posts a sell offer for the book.
3. If the user clicks on the "confirm" button, the book availability notification request is recorded.
4. If the user clicks on the "cancel" button, the action is aborted and the user is taken back to the "book home" page.

6.1.8 Changing the price of a book after it has been posted

The purpose of this use case is to describe how a seller would be able to change the price of a book that is already listed for sale.

Pre-conditions:

- The user is logged in and is on the myHome page

Post-conditions:

- The price of a book offer is changed

Basic Flow:

1. The user is on their account home page
2. The user selects to view their open book sell offers
3. The user selects to edit one of the book offers
4. The user is allowed to modify any of the following properties of the book offer: price, comments, and transaction options.
5. The user changes the price and presses the submit button.

6.2 Nonfunctional System Requirements

- Timing: the project has to be completed by the end of the semester
- Platform: Unix
- User Interface: web interface
- Scalability: the completed system must be able to handle up to 50,000 registered users
- Responsiveness: user requests must be completed on average within 3 seconds
- Legal issues: the online system must have the appropriate disclaimers and privacy policy.

7 Checklist

The following checklist is provided to help you think about whether the document is complete and correct. You may want to add your own additional questions to the list.

7.1 Content

- Do the requirements state the customer's needs?
- Do the requirements avoid specifying a solution?
- Do the requirements avoid specifying a design?
- Are you satisfied with all parts of the document?
- Do you believe all parts are possible to implement?
- Is each part of the document in agreement with all other parts?

7.2 Completeness

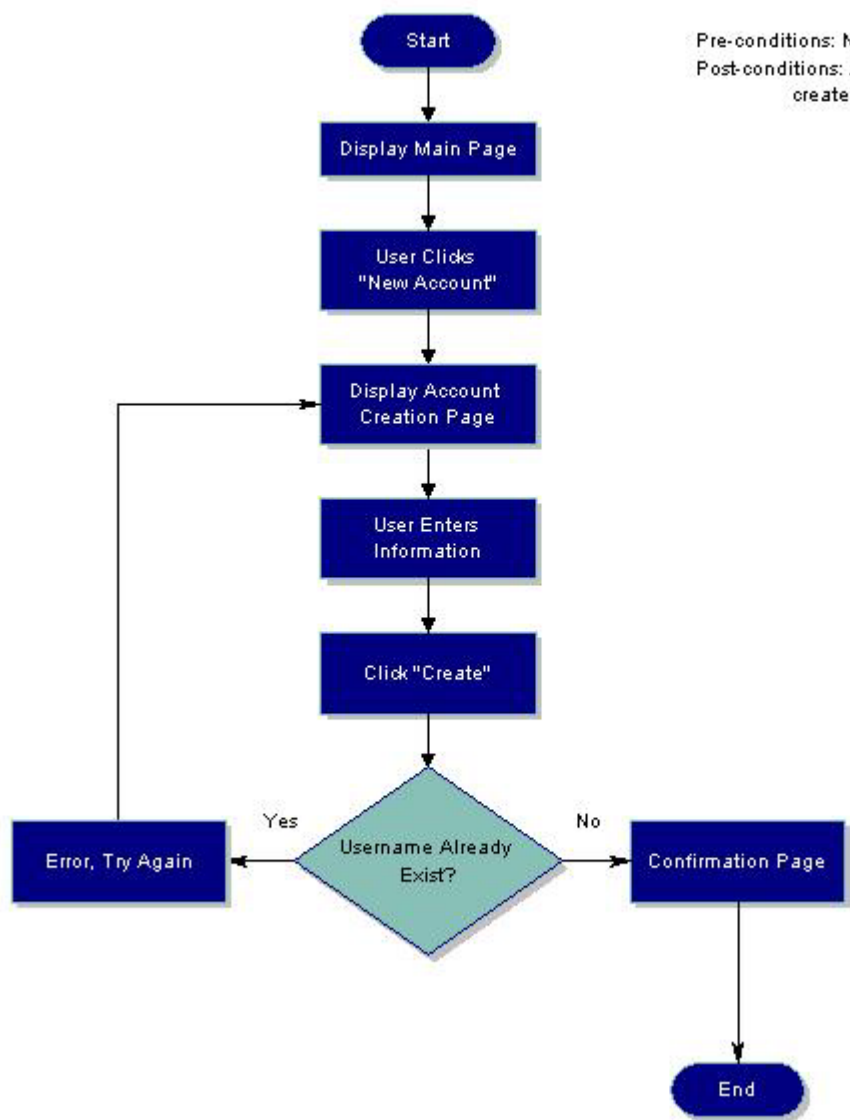
- Are the requirements properly prioritized?
- If there are requirements imposed by third party products, are those requirements listed?
- Are all of the necessary interfaces specified, including input and output?
- Are the specifications precise enough?
- Are all performance requirements (e.g. speed, memory, capacity) specified?
- Where information isn't available, are the areas of incompleteness specified?
- Are all sections from the document template included? If not, is there reason for the changes?

7.3 Clarity

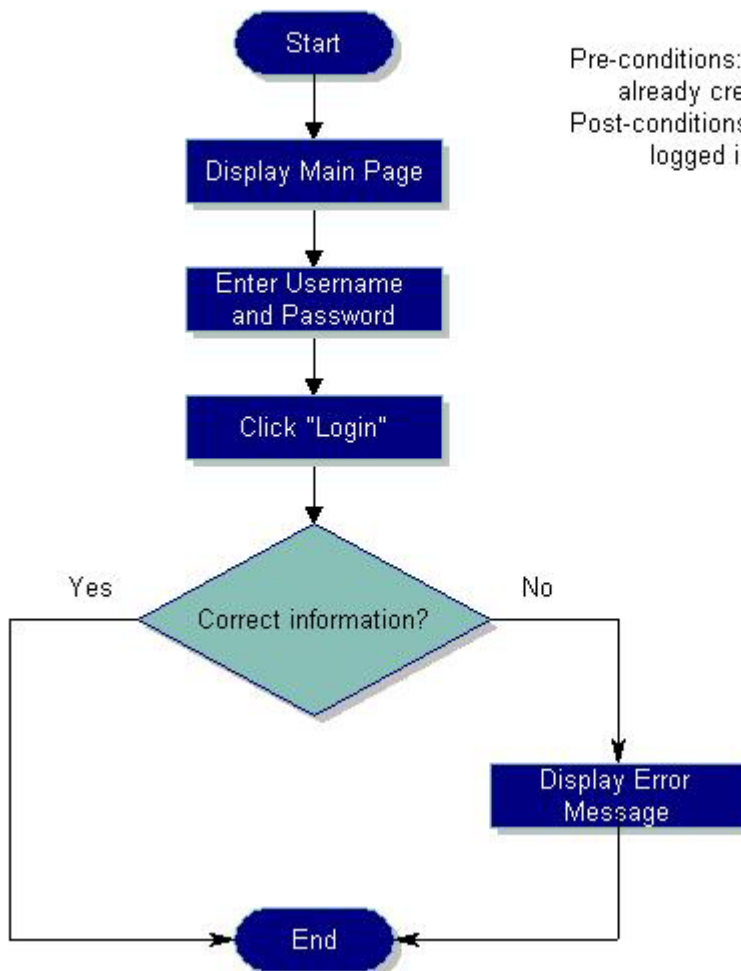
- Are all requirements reasonable?
- Is the level of detail of each requirement appropriate?
- Are the requirements written in a language appropriate to the audience?
- Are all items clear and not ambiguous?

Creating a New Account

Pre-conditions: None
Post-conditions: An account is created for the user



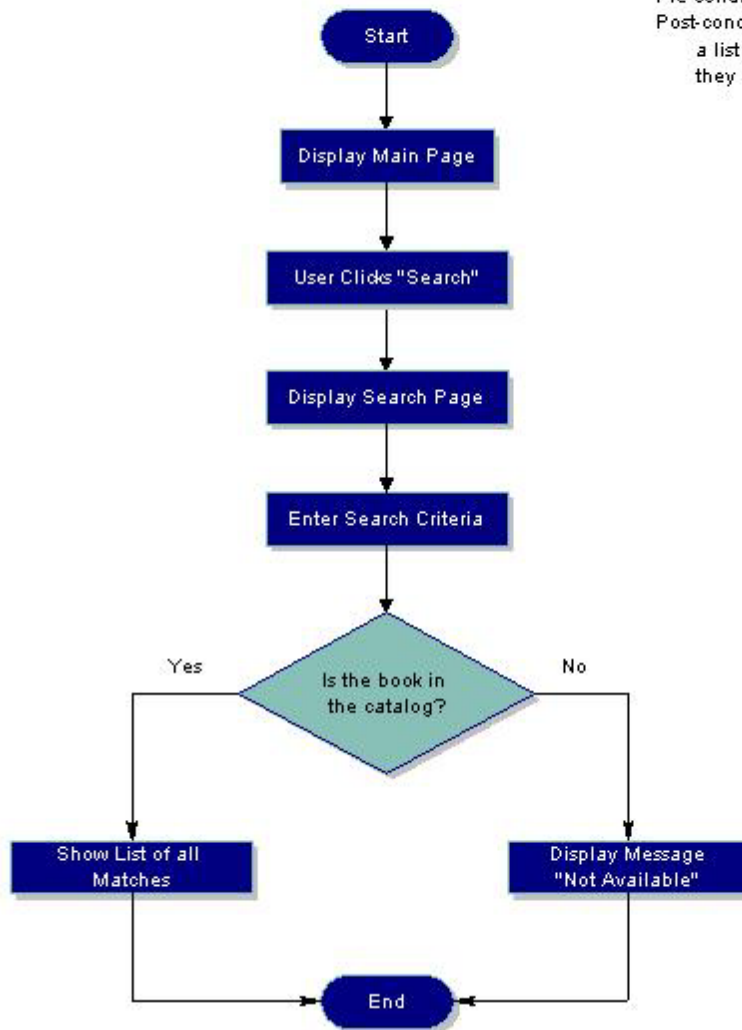
Login to myHome



Pre-conditions: The user has already created an account
Post-conditions: The user is logged into the system

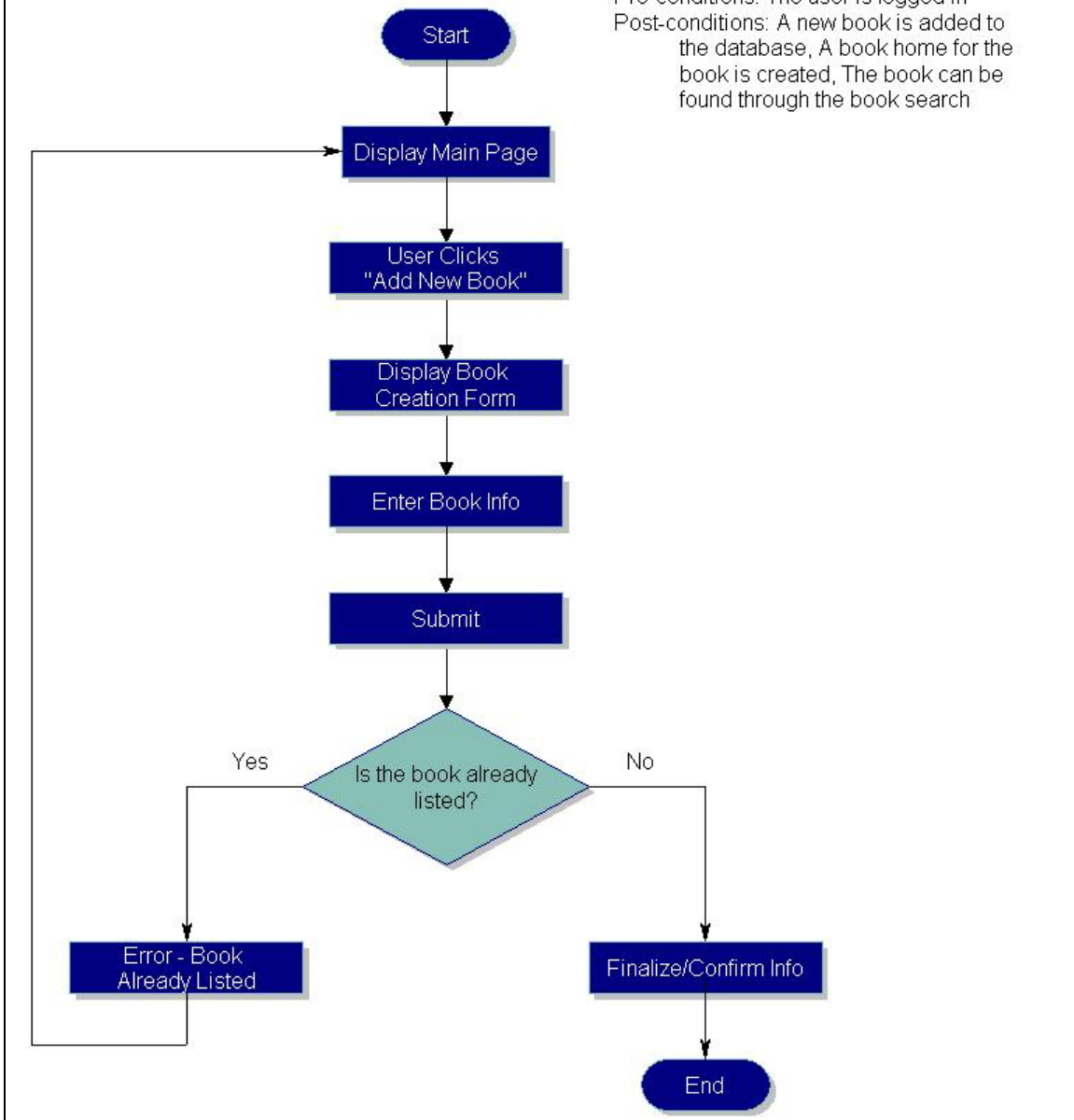
Finding a Book

Pre-conditions: None
Post-conditions: The user is presented with a list of books that matches the criteria they entered or an error message



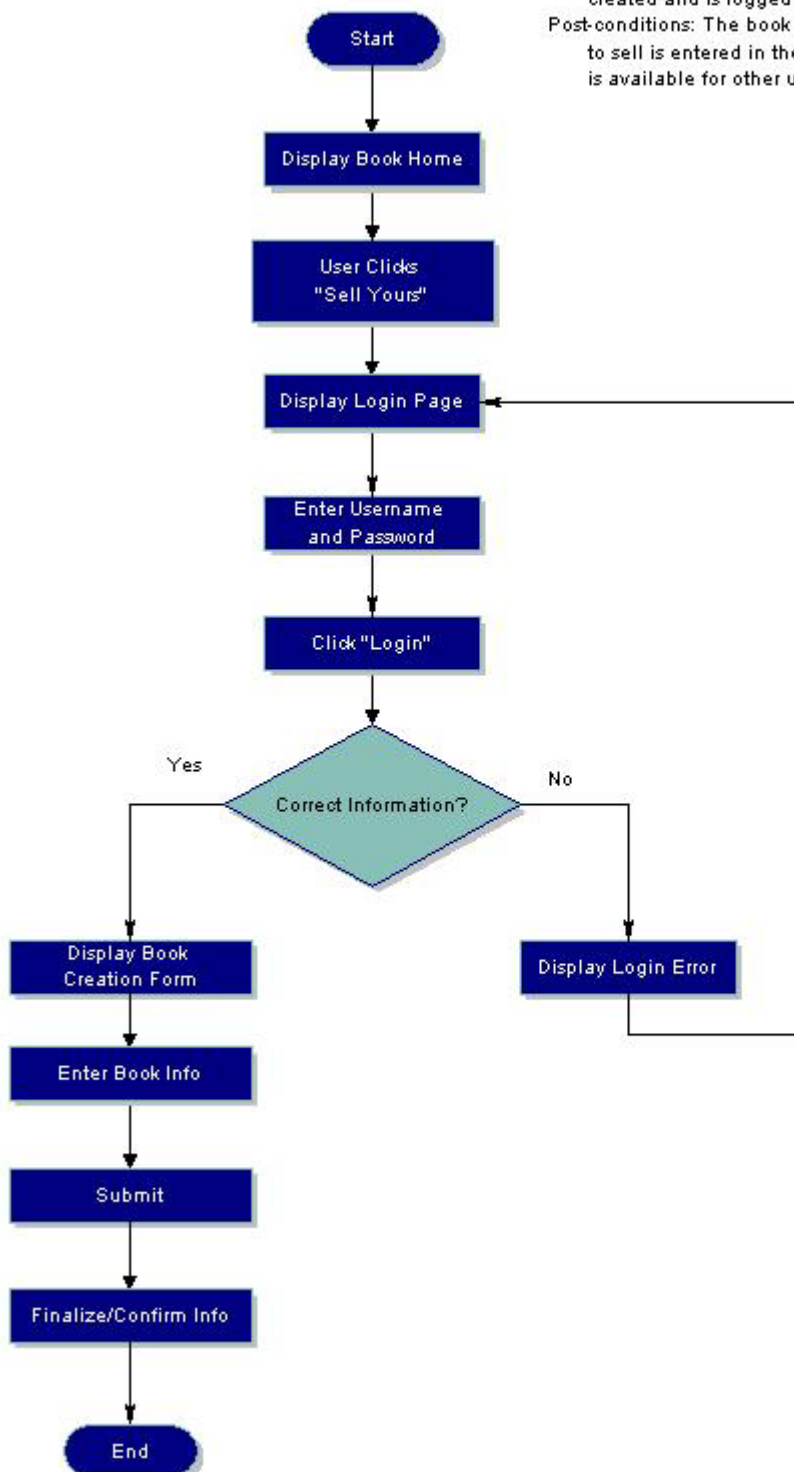
Adding a New Book to the Catalogue

Pre-conditions: The user is logged in
Post-conditions: A new book is added to the database, A book home for the book is created, The book can be found through the book search



Listing a Book for Sale

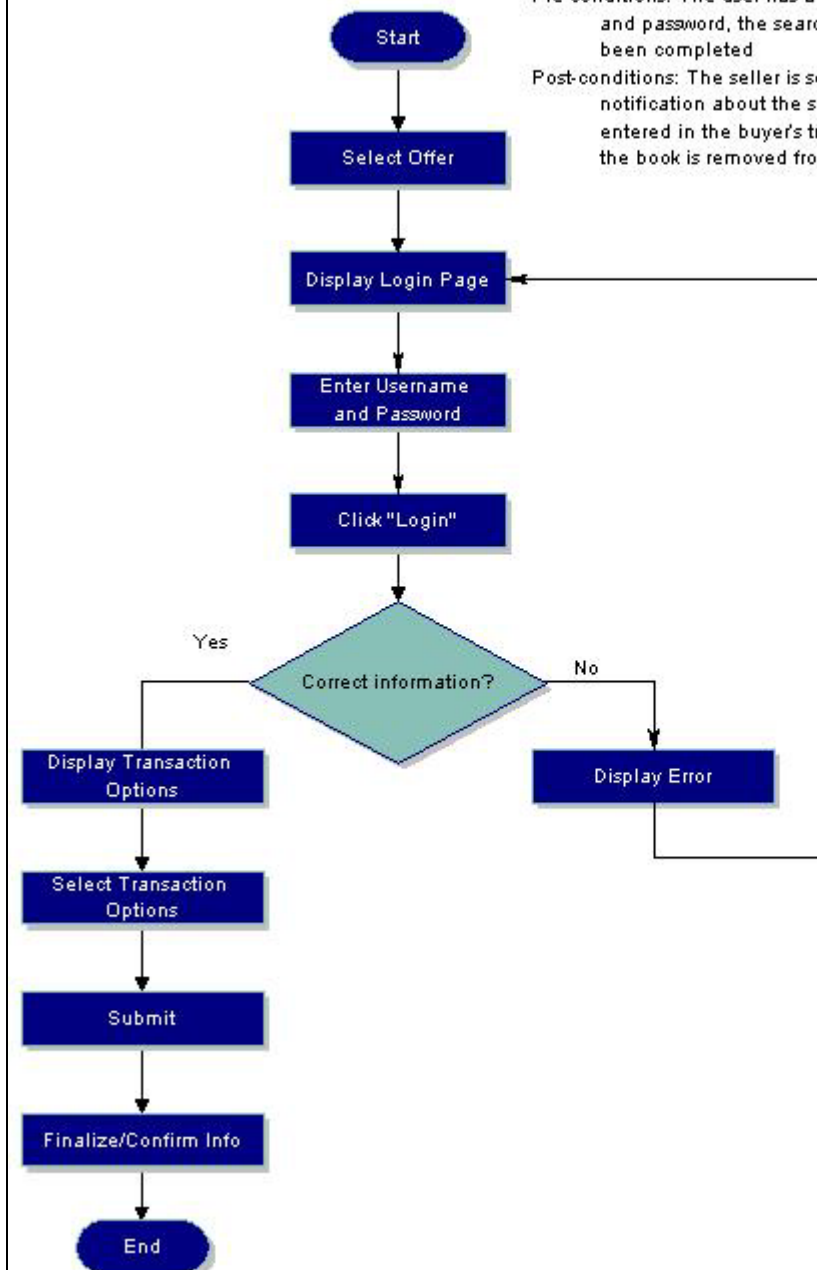
Pre-conditions: The user has an account created and is logged in
Post-conditions: The book the user wants to sell is entered in the database and is available for other users to buy



Buying an Available Book

Pre-conditions: The user has a valid username and password, the search has already been completed

Post-conditions: The seller is sent an email notification about the sale, the book is entered in the buyer's transaction history, the book is removed from "available for sale" list



Signing Up For Book Notification

Pre-conditions: The user is on a "book home" page (see Finding a book home use case).
The book does not have any sell offers
Post-conditions: The user's request to receive an automatic email notification for the specified book is recorded in the system (unless the action was aborted by the user)

