Software Requirements Specification

for

BookNest

Version 1.0 approved

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Intro SE Group 5

08/28/2024

1. Introduction

1.1 Purpose

The product is a webapp based on Javascript, CSS, and HTML that contains a catalog of digital and physical books, which can be browsed and purchased by customers using the site. Admins will be able to add or remove books, update quantities, and manage inventory. Users will be able to browse and search books, edit personal information like address or payment, add or remove a specified quantity of books to the cart, and check out to place an order.

1.2 Document Conventions

The SRS document follows a format that is accessible and easy to use. Important points are bolded and numbered so that they may be easily found. Requirements are individually numbered, and more detailed information is italicised.

1.3 Intended Audience and Reading

The primary intended audience for the product described herein is the collective of educators and students of primary schools and universities in the U.S., though the reach extends to institutions located in nations across the globe. Anyone with a device and internet connection can access and purchase products from the website.

1.4 Product Scope

The software specified in this document is an HTML5 webapp using CSS and running on Node.js. The webapp will have a catalog with a wide selection of electronic and physical books. The books can be searched by title, ISBN, or keywords; books can be added to a virtual shopping cart where the user can check out and pay for all items.

1.5 References

https://www.catherinejohns.com/brand-colors/
https://venngage.com/blog/brand-colors/

2. Overall Description

2.1 Product Perspective

The product will be a new, self-contained webapp modeled around popular e-commerce websites such as Amazon and eBay.

2.2 Product Functions

The major functions that the e-store must perform are:

- *Home Page*
- *Registering*
- *Logging In*
- *Book Catalog*
- *Shopping Cart*
- *Checkout*

2.3 User Classes and Characteristics

The following user classes will be employed for general use of the webapp:

- *Customer - Access to all features, ability to update personal information*
- *Administrator - Access to all features, ability to update personal information, ability to manage inventory.*

2.4 Operating Environment

We are going to use Visual Studio Code as an IDE, Linux and Windows Powershell as two of our group mates use Linux and other use Windows, ROM 64-bit and RAM 8 GB.

2.5 Design and Implementation Constraints

This e-store will not be able to run on a MacBook or any other type of Mac computer due to them running on a different operating environment.

3. System Features

3.1 Shopping Cart

3.1.1 Description and Priority

The shopping cart will be an interface within the website where items can be added by the user with a specified quantity and paid for together upon checkout. As items are added to the cart, the total cost is updated as a sum of the products of each item's quantity and cost.

3.1.2 Stimulus/Response Sequences

1.) *On an item's page, a user enters a quantity requested and clicks a button to add the item to the cart.*
2.) *The user clicks a button on the navigation bar to open the shopping cart.*
3.) *A GUI appears that displays the quantity of each item in the cart, the total cost, and buttons for checking out or clearing the cart.*

3.1.3 Functional Requirements

REQ-1: Any user must be able to click an icon on the navigation bar, which will make the shopping cart GUI visible.
REQ-2: Any user must be able to click on the quantity text box, input a new desired quantity and press enter, which will update the quantity and cost if the desired amount is in stock.
REQ-3: Any user must be able to click on a button displayed next to an item in the shopping cart labeled "remove item", which will remove all quantities of the item and subtract the product of the item's quantity and cost from the total cost.

3.2 Book Catalog

3.2.1 Description and Priority

The book catalog will be a collection of pages where the database of book inventories is displayed for the user to view. The user can search the catalog for books, add specified quantities of books to their cart, and click a book to view a separate page that contains detailed information on the book.

3.2.2 Stimulus/Response Sequences

1.) *User clicks on a button to open the store, which loads the catalog and displays each book sorted by popularity.*
2.) *User clicks the "sort by" button and selects an option, which changes the sorting algorithm for displaying books.*
3.) *User types a title, ISBN, or keyword into the search bar and hits enter, which searches the catalog and displays any matching books.*

3.2.3 Functional Requirements

REQ-1: A user must be able to click a button on the navigation bar to load the contents of the catalog.
REQ-2: A user must be able to click on any listing to load its subpage.
REQ-3: A user must be able to click on the filter button and choose a filter option, which will reload the listings filtered by the selected option.
REQ-3: On any listing, a user must be able to type in a quantity and click a button to add the specified quantity to their shopping cart.

3.3 Log in/Register

3.3.1 Description and Priority

In this feature, the user will be able to log in or register to the site, which will allow them to save personal information such as shipping and payment for future use. Login will require email and password, and registering will require these as well as name, number, and address.

3.3.2 Stimulus/Response Sequences

1.) *User clicks a button on the navigation bar, which redirects them to the log in page.*
2.) *User clicks a button on the login page, which redirects them to the register page.*
3.) *User fulfills all requested fields and clicks a button, which either logs in the user or registers a new user depending on which page.*

3.3.3 Functional Requirements

REQ-1: A user must be able to click a button on the navigation bar that redirects them to the login page.
REQ-2: A user must be able to click a button on the login page that redirects them to the register page.
REQ-3: A user must be able to click on any field within the form and type to enter information.
REQ-4: A user must be able to click a button that submits the form.

3.4 Home Page

3.4.1 Description and Priority

The home page will function as a central hub, displaying a welcome message with an introduction to the website.

3.4.2 Stimulus/Response Sequences

1.) *A user first enters the website, where they're directed to the homepage.*
2.) *A user clicks a button on the navigation bar, which loads the home page.*

3.4.3 Functional Requirements

REQ-1: Any user must be able to load the home directory.
REQ-2: Any user must be able to click a button on the navigation bar that directs them to the homepage.

3.5 Checkout Page

3.5.1 Description and Priority

The checkout page is where the user will review their order and pay once all items have been added. Item quantities can be altered if needed, and the user will have a chance to review the total price before entering payment information.

3.5.2 Stimulus/Response Sequences

1. *The user adds all requested items to the shopping cart and clicks a button to checkout, which directs them to the checkout page.*
2. *The user clicks the cancel button, which returns them to the previous page.*
3. *The user enters payment and shipping information and clicks a button to pay for the order, which creates an order in the system.*

3.5.3 Functional Requirements

REQ-1: A user must be able to alter the quantity of any item being bought
REQ-2: A user must be able to click a button that confirms the order and processes payment, logging the order in the system.
REQ-3: A user must be able to click a button to cancel the order.

Other Nonfunctional Requirements

3.5 Performance Requirements

Page Load Time

- ***Requirement**: Pages should load within 2 seconds on an average broadband connection (5-10 Mbps).*
- ***Rationale**: It is important to improve the user experience and reduce bounce rates.*

Search Performance

- ***Requirement**: It should take 1 second to search a book.*
- ***Rationale**: If it takes more time, the users will get annoyed by using the site.*

Content Delivery

- ***Requirement**: The pdf of books must be downloaded within 5 seconds up to 20 MB on a 10 Mbps connection.*
- ***Rationale**: Download times need to be short, especially for larger files, to ensure users are not discouraged from obtaining content.*

Responsiveness

- ***Requirement**: All pages must be responsive, with no layout shifts or delays in rendering when viewed on devices ranging from 320px (mobile) to 1920px (desktop).*

- ***Rationale****: Mobile responsiveness ensures that users have a smooth experience regardless of the device they are using, which is critical for a wide audience base.*

Database Query Performance

- ***Requirement****: Database queries (such as fetching user profiles, book details) must complete in under 300 milliseconds for datasets of up to 100,000 records.*
- ***Rationale****: Efficient database performance ensures smooth and fast retrieval of data, allowing for quick user interactions.*

3.6 Safety Requirements

The safety measurements we will follow are:

- *Protection of user data*
- *Authorized admin access*
- *Accurate payment process*

3.7 Security Requirements

The identity of the admins must be authenticated. Sensitive information such as payment information and passwords stored in the database must be encrypted. In case of any system error, our website will show an error message like “404 error” etc. and not expose any sensitive system information.

3.8 Software Quality Attributes

- *The website will be available for users 24/7, with minimal downtime.*
- *The website will be fast to load and responsive, even under heavy load.*
- *Common components, such as book listing components, search functionality, and payment processing, will be reusable in future projects.*
- *The system will handle erroneous or unexpected input without crashing.*
- *All financial transactions must be accurate to the nearest cent, with a zero-error rate in the calculation of totals.*

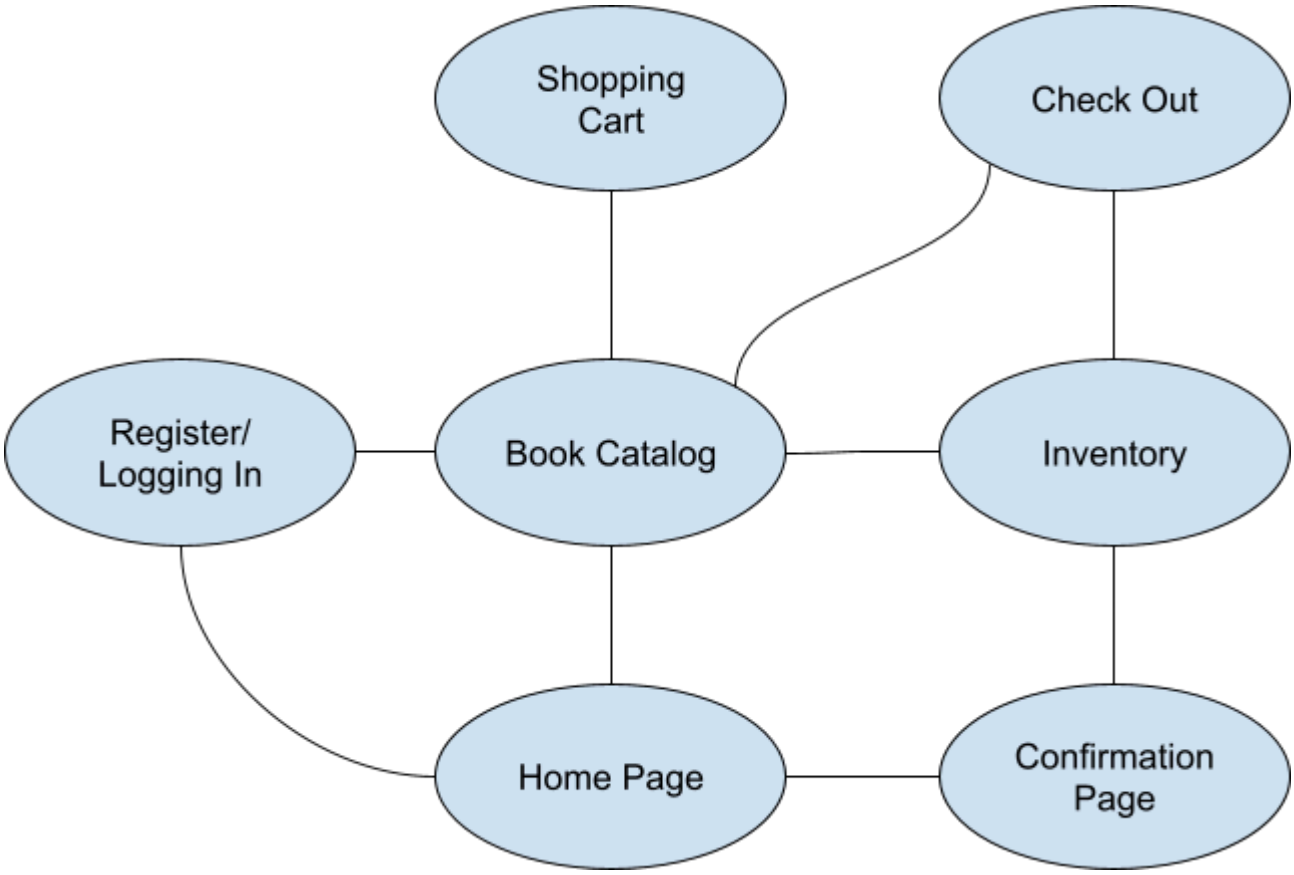
4. Other Requirements

- *The only other requirement for the e-store that was not mentioned is the database, we will use MySQL for all information storage and queries.*

Appendix A: Glossary

- ***Admin/Administrator*** *– A person who controls the e-store website and can make changes to it at any point.*
- ***Browse*** *– Viewing items in an e-store without buying them.*
- ***Cart*** *– A place where items are stored for adding and removing items or quantity.*
- ***Customer*** *– Sometimes referred to as 'User'. A person who uses the e-store website for wants and needs.*
- ***Database*** *– A place where data is stored.*
- ***Filter*** *– Used for removing specific items.*
- ***Function*** *– Lines of code that can be called for anytime after it is made.*
- ***GUI*** *– An abbreviation of 'Graphical User Interface'.*
- ***Interface*** *– The portion of a computer that can be interacted with.*
- ***Inventory*** *– A list of items.*
- ***ISBN*** *– An abbreviation of 'International Standard Book Number'.*
- ***Item*** *– A thing in a list that the user can purchase.*
- ***Navigation Bar*** *– Used for switching destinations in a page.*
- ***Quality*** *– How good a product is.*
- ***Quantity*** *– A specified amount of an item.*
- ***Rationale*** *– An explanation for something.*
- ***Requirement*** *– Something that is wanted for a program.*
- ***Search*** *– A function used to find specific items in an e-store.*

Appendix B: Analysis Models



Appendix C: To Be Determined List

1. *Implementing a business contact information on the homepage*
2. *Implementing discounts and sales on certain items*
3. *Implementing coupons on the checkout page*