

Final project - Online bookshop system

Vlad-Marian Toader

BDTS (405)

System definition

The Online Bookshop System is designed to provide a seamless experience for users to explore, search, and order books online. The system caters to both customers and administrators, offering functionalities such as book searching, order placement, order history tracking, and administrative tasks like monitoring publishers in a city and managing critical stock levels.

1 Business requirements

1.1 Search Books

Users should have the ability to search for books based on the author's name. This feature enhances user experience by allowing them to discover books written by their favorite authors quickly.

1.2 Title-based book search

Users need the capability to find books that contain specific words in their title. This feature supports users in locating books of interest with titles that match or contain certain keywords.

1.3 Find Books by Genre

Users should be able to explore books based on their genre. This feature facilitates a more refined search experience, allowing users to discover books within their preferred genres.

1.4 Find Books by Publisher

Users must have the option to find all books published by a specific publisher. This functionality assists users in exploring a particular publisher's catalog and makes it easier for them to discover and purchase books from their preferred publishers.

1.5 Find Books with Critical Quantity

9 Users should have the capability to identify books with stock quantities below a critical threshold (e.g., 2 pieces). This feature empowers users to discover books that may soon be out of stock, enabling them to make timely purchasing decisions and ensuring a more informed and efficient shopping experience.

1.6 Place an Order

Users need the ability to place orders for books they wish to purchase. This essential e-commerce feature allows users to effortlessly place an order by inputting the list of chosen books and their personal information.

1.7 View Order History

Users should have access to their order history, displaying a comprehensive list of their past purchases. This feature enhances user transparency, allowing them to review and track their previous orders, including details such as order date, book titles, and quantities.

1.8 Automatic stock quantity update

The system should automatically update the stock quantity of books after an order is placed. This ensures that the available stock accurately reflects the real-time status, preventing overselling and providing users with up-to-date information on book availability.

1.9 Admin publisher monitoring

The administrator should have the capability to view all publishers operating in a specific city. This administrative feature facilitates the monitoring

of publishers' activities within a designated area, supporting business operations and strategic decision-making.

1.10 User Account Deletion

Users should be able to delete their accounts from the system. This feature provides users with control over their data and privacy, allowing them to permanently remove their information from the online bookshop platform.

2 Entities

2.1 Publisher

Representing the entities responsible for publishing books, capturing details such as ID, name and location.

2.2 Author

Highlighting the creative minds behind the books, with attributes like ID, name, and a short biography.

2.3 Book

Serving as the central entity, encapsulating essential details like ID, title, publisher, authors, genre, price, and quantity in stock.

2.4 Address

Capturing geographical details such as street, building, building number, city, and county, along with an ID.

2.5 User

Enabling personalized experiences, capturing information such as ID, email, first name, last name, phone number and address.

2.6 Order

Facilitating the order process, including ID, user, a list of ordered books, date, and total price.

3 Relationships

3.1 Address - User (One-to-One)

An address is associated with only one user, and a user has only one address.

3.2 Publisher-Book (One-to-Many)

A publisher can publish multiple books, but a book is published by only one publisher.

3.3 Author - Book (Many-to-Many)

An author can write multiple books, and a book can have multiple authors.

3.4 User - Order (One-to-Many)

An user can have multiple orders, but each order belongs to only one user.

3.5 Book - Order (Many-to-Many)

A book can be ordered multiple times, and an order can contain multiple books.

4 Minimum Viable Product (MVP) Features

4.1 User Book Search Endpoint

REST endpoint for users to search books by author.

4.2 Title-based Book Search Endpoint

REST endpoint for users to find books containing specific words in their title.

4.3 Genre-based Book Search Endpoint

REST endpoint for users to find books by genre.

4.4 Publisher-based Book Search Endpoint

REST endpoint for users to find all books published by a specific publisher.

4.5 Order Placement Endpoint

REST endpoint for users to place orders for books.