Project: Book Management System

An online book management system to allow libraries to manage books. Key learnings from project – C#, .NET, ASP.NET, asynchronous programming in C#, authentication and authorization using JWT Token, REST API Development, password security and input sanitization, dependency injection pattern.

Key Features

Book CRUD Operations:
1. Create – add a new book to the collection.
2. Read – get details of one or more books.
3. Update – modify the details of an existing book.
4. Delete – remove a book from the collection.

User CRUD Operations:
1. Create – add a new user to the system.
2. Read – get details of a user.
3. Update – modify the details of a user in the system.
4. Delete – remove a user from the system.

Book Borrowing/Returning:
1. Users can borrow available books.
2. Users can return borrowed books.
3. Track book availability. (book is borrowed or not). One user can borrow multiple books at a time but not multiple copies of the same book at a time.

Book Categories/Genres:
1. Categorize books by genres such as fiction, non-fiction, science, technology etc.

Search and Filtering
- Users would be able to filter books based on Genre, Author, range of Rating, range of Price.
- Admins can filter users based on First Name, Last Name, Role, Status, Date of Birth.
- Users can search for borrowed books based on borrow Date range , return date range and status.

Reviews and Ratings:
1. Users can review books they have read. Multiple Users can write multiple reviews for multiple books. However, if a user writes a review for a book and if he/she had previous review, that review would be overwritten with the new one.

Authentication and Authorization:
Implemented using JWT Token along with Role based access. The two roles that exist for users are – Admin and Customer. (roles are case sensitive)