



Application Development

30% Group Coursework

2024-25 Autumn

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Assignment Due Date: Thursday, April 17, 2025

Assignment Submission Date: Thursday, April 17, 2025

Word Count: 500

Repo Link: <https://github.com/KarishKhadka/App-groupwork>

I confirm that I understand my coursework needs to be submitted online via MySecondTeacher under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a marks of zero will be awarded.

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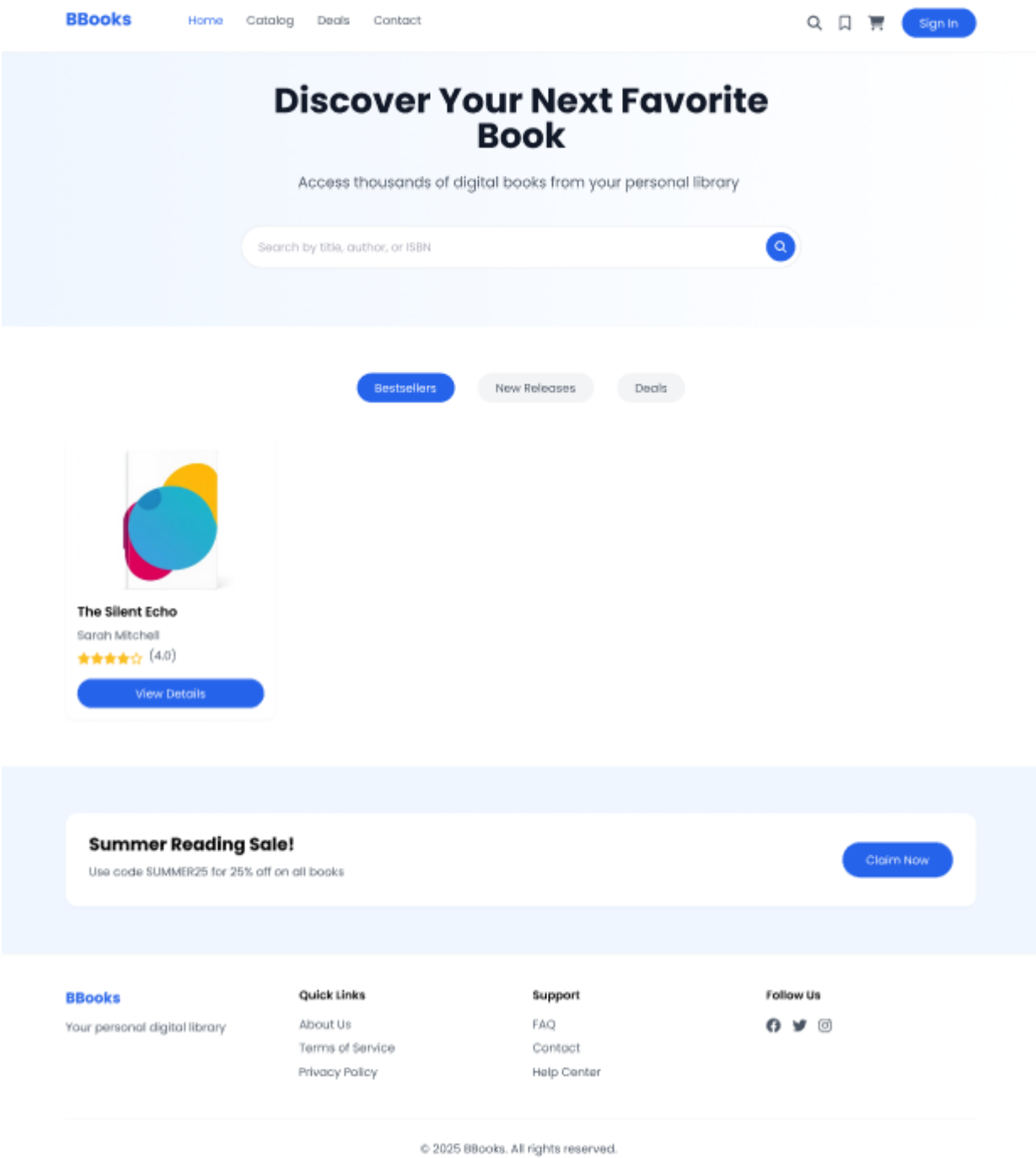
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a. BBooks

Buy Books (BBooks) is an online book retailing system developed to help a private book library store expand its reach beyond its physical location. This C#.NET-based software application provides users with a seamless experience to explore, filter, and purchase a wide variety of books online. The platform includes robust features such as catalog browsing, advanced search and filtering, book categorization (e.g., Bestsellers, Award Winners, New Arrivals, etc.), and a secure in-store pickup ordering system. Members can bookmark books, place cancelable orders, and benefit from a dynamic discount system based on order quantity and loyalty. Post-purchase, users can also rate and review books, enhancing the overall shopping experience.

This project is a group effort by a team of six dedicated members: Karish Khadka, Shreyash Basnet, Kirtan Maharjan, Nirupam Aryal, Sagun Biswokarma, and Rahul.

b. UI wireframe



Genre

☐ Fiction

☐ Non-Fiction

☐ Mystery

☐ Science Fiction

Author

All Authors ▾

Price Range

\$0 \$100

Format



☐ eBook

☐ Paperback

☐ Audiobook

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🔥 Reading Goal: 15/50 books completed this year

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Book Title	Order Date	Total	Status	Action
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1984	Jan 10, 2025	\$19.99	Processing	Cancel Order

Recommended for You



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by Sarah Matthews

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c. API Endpoints

Public Endpoints

Method	Endpoint	Description
GET	/books	Get a list of books that are available
GET	/books/{id}	Get detailed information about the book
GET	/books/category/{category}	Get books by category
GET	/books/search	Search for the specific books required
GET	/announcements	Get active notice provided by the admins

Authentication & Membership

Method	Endpoint	Description
POST	/auth/register	Register as a new member
POST	/auth/login	Login

Member

Method	Endpoint	Description
POST	/bookmark/{bookid}	Add books to the members list
GET	/bookmark	Get all books in members list
POST	/cart/{bookid}	Add book to the cart
GET	/cart	View books in cart
DELETE	/cart/{bookid}	Remove book from the cart

POST	/orders	Place a new order
GET	/orders	View past orders
DELETE	/orders/{orderid}	Cancel an order if it is pending
POST	/reviews/{bookid}	Submit reviews
GET	/discounts/status	Check for eligibility for discounts

Staff

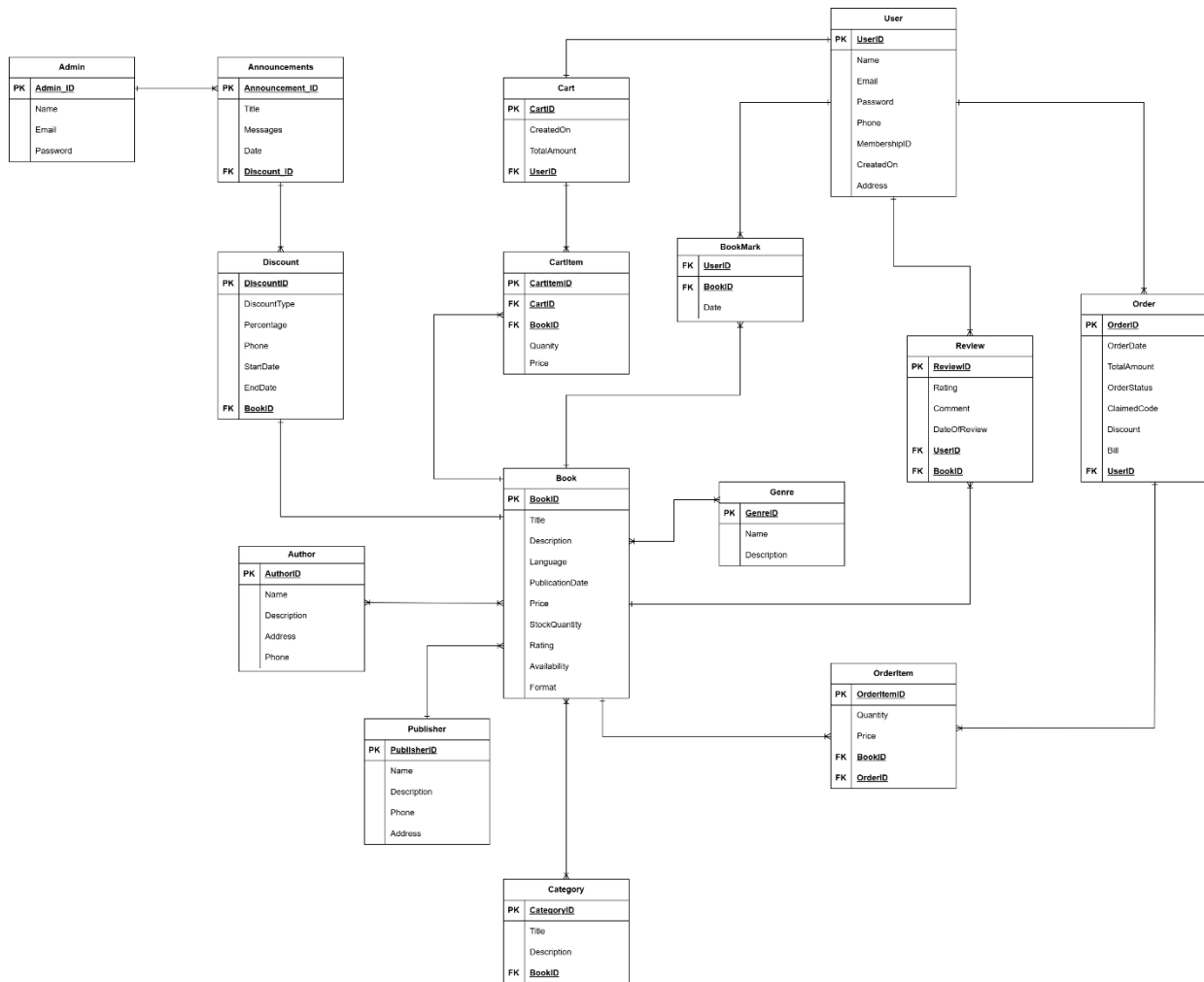
Method	Endpoint	Description
POST	/orders/process	Processing order using the code
GET	/orders/claim/{code}	View orders details using the claim code

Admin

Method	Endpoint	Description
POST	/books	Add a book to the catalog
PUT	/books/{id}	Update the books details
DELETE	/books/{id}	Delete a book
POST	/books/{id}/stock	Update the stock for a book
POST	/books/{id}/discount	Add or update the discount or flag “on sale ”

POST	/announcements	Create timed announcements
GET	/analytics/sales	View popular or most sold books report

d. Entity Relational Diagram



e.Technology Stack

i) Framework

The ASP.NET Core MVC (Model-View-Controller) pattern has been adopted in this project. MVC enables a clean separation of concerns, which makes the application modular, maintainable, and testable. The Model contains the application's core data logic, the View takes care of the UI and presentation, and the Controller processes incoming requests, performs operations on the model, and returns views as responses. This form is ideally suited to creating scalable and structured web applications like the online book shopping system described below.

ii) External Libraries

To enable easy development and improved code quality, certain external libraries and packages have been integrated:

AutoMapper: To ease object-to-object mapping, of particular use in data transfers between Data Transfer Objects (DTOs) and domain models, removing boilerplate code.

(Optional: Your additional stuff here if you're using it, i.e., FluentValidation for model validation, Serilog for structured logging, etc.)

These utilities improve development speed, maintainability, and ensure separation of concerns and single responsibility principles are being practiced.

iii) Database

The application employs PostgreSQL as its relational database management system. PostgreSQL is an open-source, feature-rich, and powerful RDBMS that is famous for its reliability, scalability, and SQL standards compliance.

PostgreSQL supports advanced query features and is best suited to execute complex filtering and ordering operations as described in the book catalog

requirements.

PostgreSQL will store all important data like book information, user accounts, orders, reviews, discounts, and inventory entries.