بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

International Islamic University Chittagong

Department of Computer Science and Engineering

Project Report

COURSE CODE : **CSE -3532**

COURSE TITLE : **TOOLS AND TECHNOLOGIES FOR INTERNET PROGRAMMING**

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Submitted by:

Name: Jannatul Saira
ID: C231473

Name: Jannatun Nur Muskan
ID: C231470

Submitted To:

Sara karim

Adjunct faculty
Department of CSE
International Islamic University Chittagong

Description:

An online bookstore web application was developed using the MERN Stack, aiming to make book shopping easier and more efficient. The system allows users to browse a wide collection of books, add them to a cart, and place orders using a cash-on-delivery method.

The application is divided into two main parts: one for regular users and another for admins. While users can explore books and manage their carts, admins have access to a secure dashboard where they can upload new books, edit existing ones, or remove outdated listings..

Why It's Useful and Real-Life Applications:

An online bookstore saves time and makes book shopping easier. Users can order books from home, and admins manage everything from a single dashboard. It helps both customers and store owners by making the process faster, more organized, and user-friendly.
In real life, many people prefer buying books online instead of visiting physical stores. This system helps make that process easier. It saves time for both customers and bookstore owners.

Customers:

- Able to search and order books from any location.
- Easily add or remove items from the cart.
- Orders are placed using a cash-on-delivery method, no credit card required.

Store Admins:

- Inventory is managed in real time through the admin panel.
- New arrivals are added and outdated stock is removed as needed.
- The entire system is controlled securely through a protected admin dashboard.

Used Tools :

HTML: Builds the basic structure of web pages.

CSS: Styles the content of the website (colors, layout, fonts).

JavaScript: Adds interactivity to web pages and connects frontend to backend.

React.js : Used to build the frontend (user interface) of the web app.

Node.js : Backend runtime environment that executes JavaScript on the server.

Express.js : Web framework for Node.js that helps handle routing and API creation.

MongoDB : NoSQL database to store book and order data.

Tailwind CSS : A modern utility-first CSS framework used for styling.

Redux Toolkit (RTK) : Used for managing global application state (like cart data).

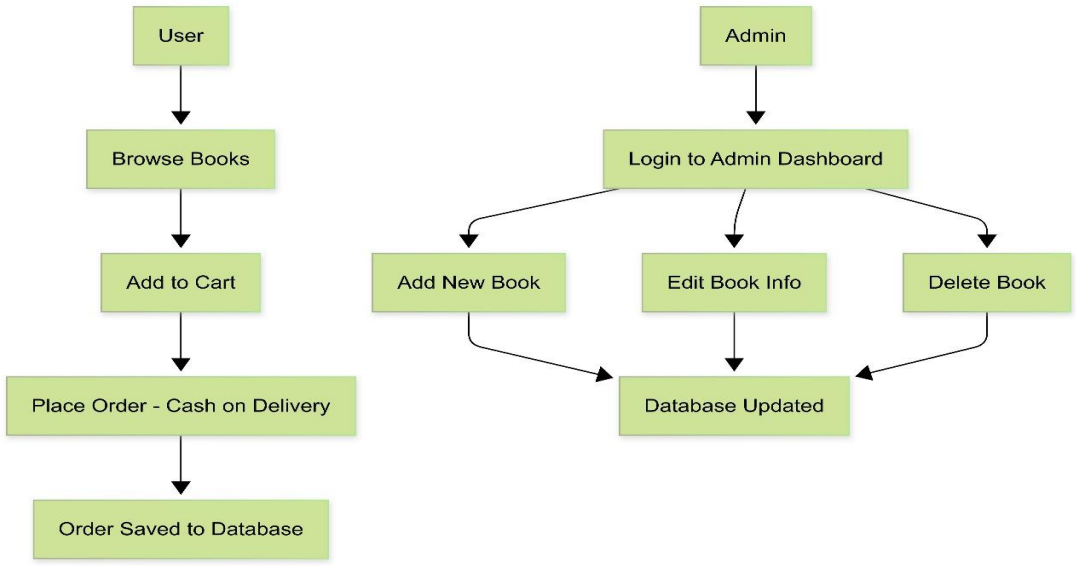
RTK Query : Helps with efficient API calls and data fetching.

Mongoose : ODM (Object Data Modeling) tool for MongoDB in Node.js.

JWT (JSON Web Token) : Used for secure user authentication, especially for admin login.

Firebase: Can be used for authentication, hosting, or real-time database needs if required.

Flow Chart of the Project: Here's a simple flow of how the system works:



Project Page:

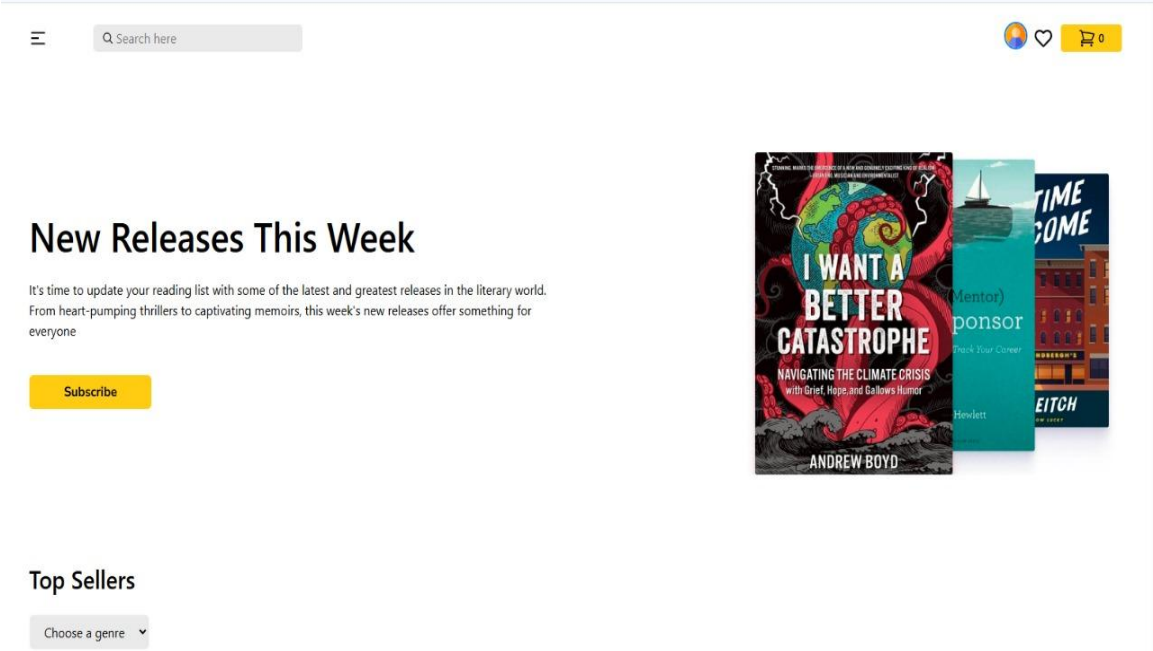


Figure: Home Page

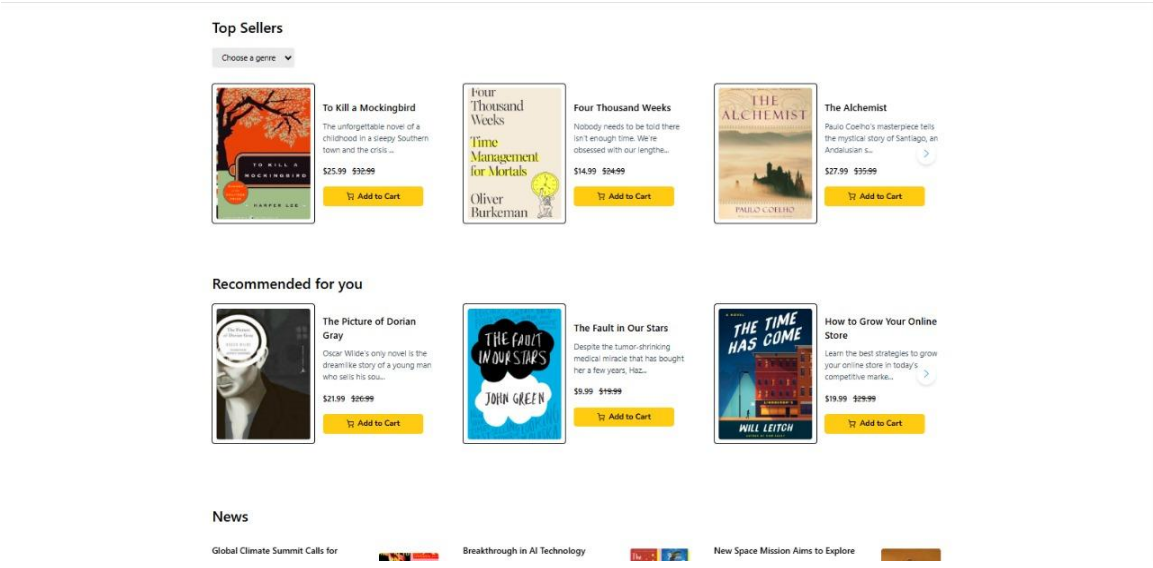


Figure: Home Page(TopSeller)

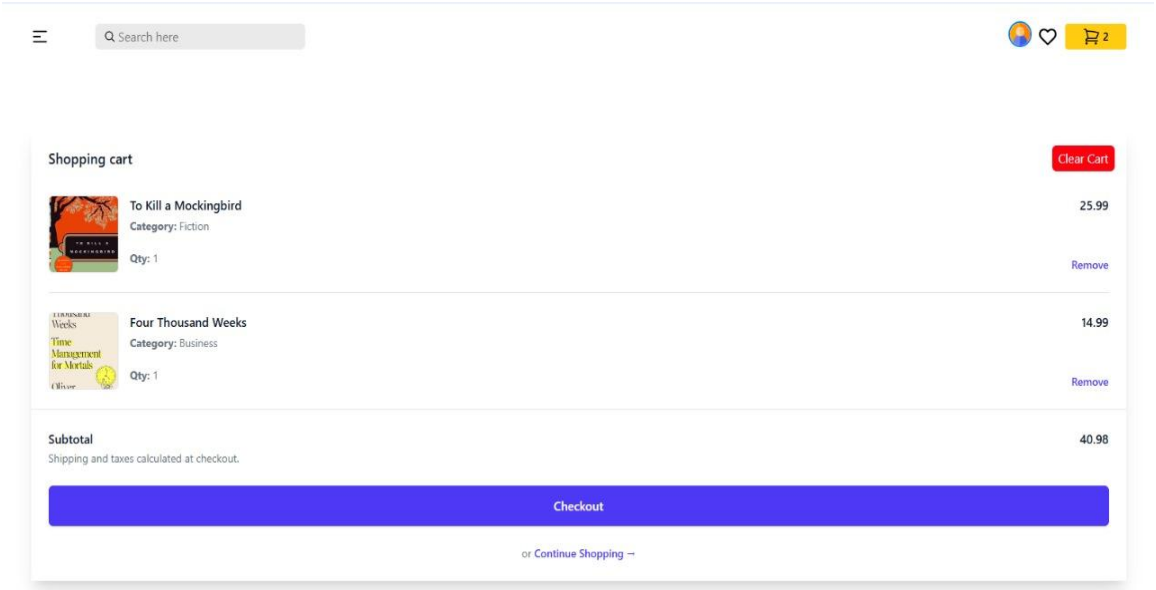


Figure: Cart Page

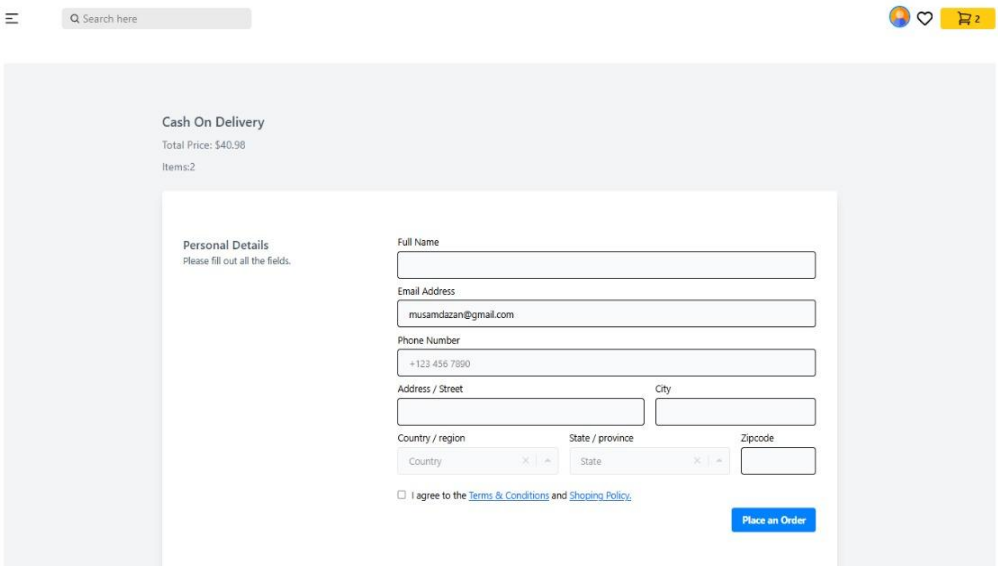


Figure: Checkout Page

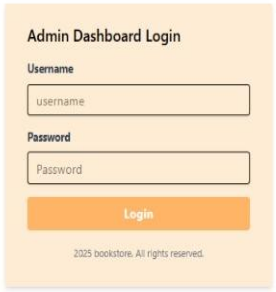


Figure: Admin Login Page

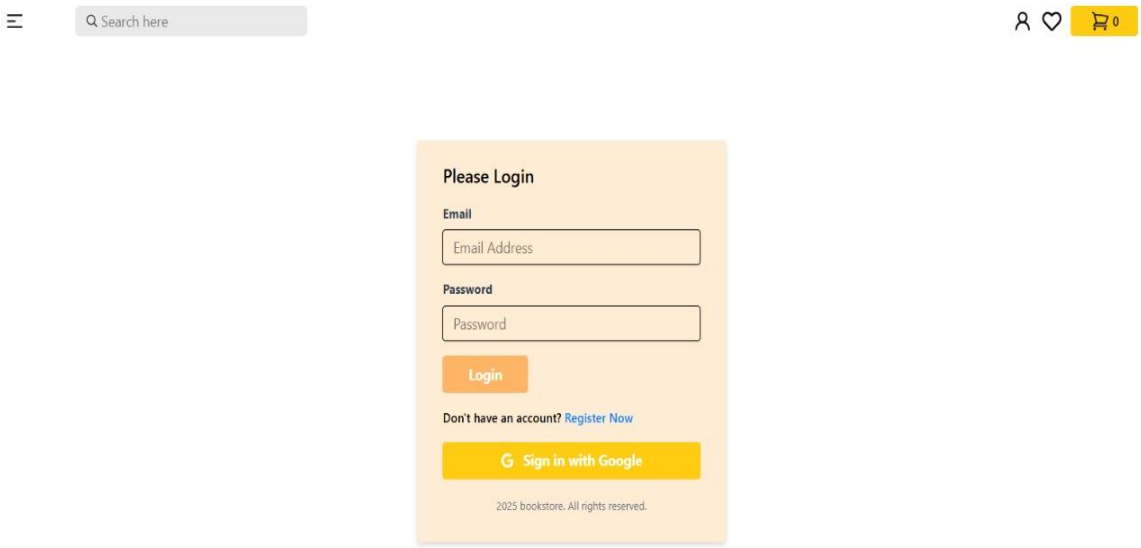


Figure: Customer Login Page

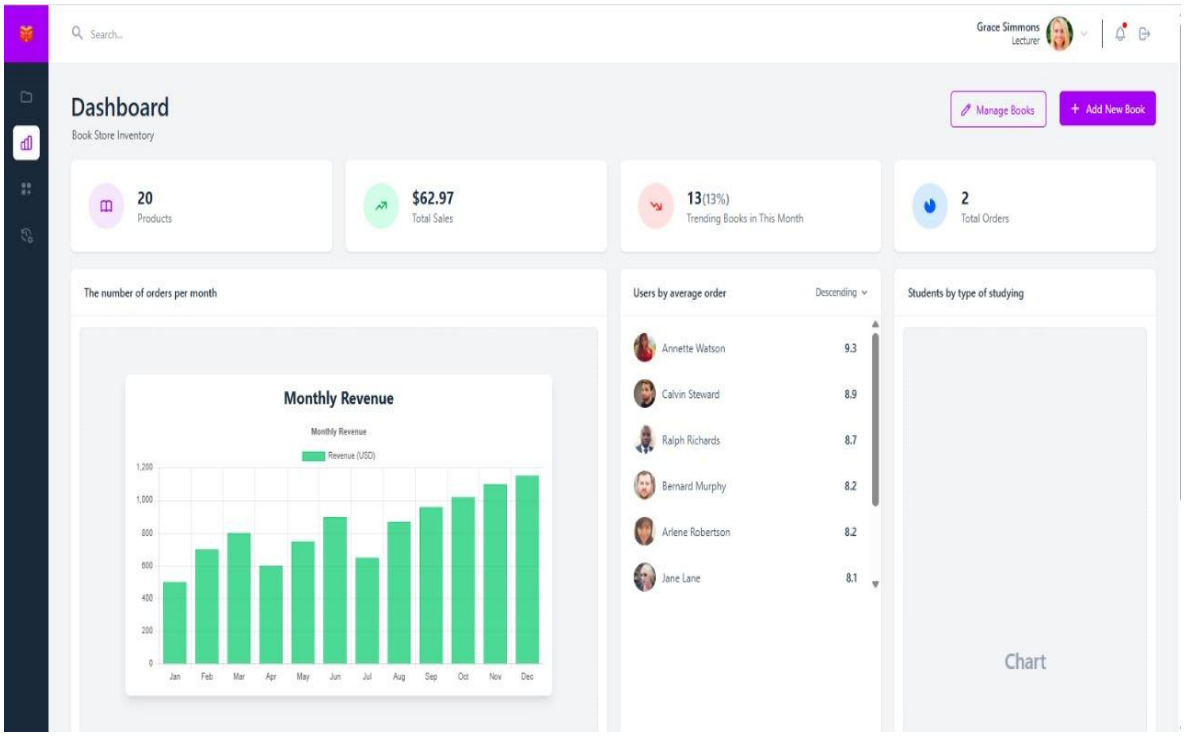


Figure: Admin Dashboard

Conclusion:

The online bookstore project successfully demonstrates how a full-stack web application can be built using the MERN stack. It covers key features like book browsing, cart management, order placement, and admin control, making it practical for real-life use. By combining modern tools such as React, Node.js, Express.js, MongoDB, Tailwind CSS, and Redux, the system provides a smooth experience for both users and admins. Secure login using JWT and real-time data handling further improve the system's reliability.

Overall, the project reflects how technology can simplify online shopping and inventory management. It also opens doors for future improvements like payment gateways, user accounts, and advanced search features.