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PROJECT REPORT

BOOK STORE (MERN)

TEAM MEMBERS

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1. Overview

The Online Bookstore Management System is designed to facilitate seamless interactions between users, books, and administrators. This platform serves as a comprehensive system for users to browse and purchase books, while organizers and administrators can manage book inventories, orders, and analytics. The system is scalable, secure, and provides an intuitive user experience.

Goals:

- **For Users:** Enable efficient book discovery, secure transactions, and personalized user experience.
- **For Organizers:** Provide tools for managing book inventory, orders, and content updates.
- **For Administrators:** Ensure platform integrity, oversee operations, and generate analytical insights.

2. Platform Features

2.1 User Features

- **Registration and Authentication:** Secure user sign-up and login functionality.
- **Book Browsing:** Search and filter books by title, author, genre, and ratings.
- **Cart Management:** Add books to a cart, update quantities, and proceed to secure checkout.
- **Order History:** View current and past purchases with order tracking.
- **Book Reviews and Ratings:** Submit feedback and rate books.

2.2 Organizer Features

- **Inventory Management:** Add, update, and delete book records, including quantities and conditions.
- **Item Creation:** Create and manage book details such as descriptions, genres, and prices.

- **Reporting Tools:** Generate reports on book performance and inventory status.

2.3 Admin Features

- **User Management:** Manage user and organizer accounts, ensuring compliance with policies.
- **Analytics Dashboard:** Gain insights into sales trends, popular genres, and user activity.
- **Order Oversight:** Monitor order statuses and resolve disputes if necessary.

3. User Flow

3.1 User Journey

1. **Registration/Login:** User creates an account or logs in.
2. **Explore Books:** User searches or filters available books.
3. **Add to Cart:** User selects books and proceeds to checkout.
4. **Complete Purchase:** User confirms payment and receives order confirmation.
5. **Post-Purchase Activities:** User can review books, track shipments, or view order history.

3.2 Organizer Journey

1. **Login:** Organizer accesses the platform.
2. **Manage Books:** Adds or updates book inventory and listings.
3. **View Reports:** Checks sales and inventory reports to manage stock effectively.

3.3 Admin Journey

1. **Login:** Admin accesses their dashboard.
2. **Manage Accounts:** Reviews and moderates user and organizer activities.
3. **Oversee Platform:** Monitors transactions, order statuses, and generates analytical insights.

4. Technical Architecture

4.1 System Architecture Overview

- **Frontend:** Built with React.js for dynamic and responsive user interfaces.
- **Backend:** Node.js and Express.js for API management and business logic.
- **Database:** MongoDB to store and manage relational and non-relational data.

4.2 Frontend

- **Frameworks:** React.js with Material UI for design.
- **Features:**
  - Dynamic book listings and cart management.
  - Notifications for order updates.

4.3 Backend

- **Framework:** Express.js for RESTful APIs.
- **Business Logic:**
  - Book-User interactions.
  - Inventory and order management.

4.4 Database

- **Schema Design:**
  - **User Table:** Stores user details, including authentication tokens.
  - **Book Table:** Includes details like title, genre, author, and price.
  - **Order Table:** Tracks user purchases and order statuses.

4.5 Security

- **Authentication:** Secure user sessions with JWT.
- **Encryption:** All sensitive data is encrypted.

5. Scenario-Based Case Study

Scenario: John's Purchase Experience

1. **User Story:** John, an avid reader, searches for a science fiction book.
2. **Interaction:** He logs in, filters books by genre, and finds his choice.
3. **Checkout:** Adds the book to his cart and completes the purchase.
4. **Outcome:** Receives an order confirmation and reviews the book after delivery.

6. Deployment & Maintenance

6.1 Deployment

- **Hosting:** AWS/GCP for cloud deployment.
- **Load Balancing:** NGINX for traffic management.

6.2 Maintenance

- **Database Backups:** Regular automated backups.
- **Monitoring:** Use tools like Grafana for real-time monitoring.

7. Reporting & Analytics

The platform provides insights into:

- **Sales Trends:** Track most popular books and genres.
- **User Activity:** Monitor user demographics and engagement.
- **Inventory Performance:** Evaluate stock levels and reorder needs.