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BOOK EXCHANGE PLATFORM WITH INTEGRATED CHAT SYSTEM

J. Princess Bala
Department of Computer Science and Engineering,
Jayaraj Annapackiam CSI College of Engineering, Nazareth, Chennai, India
jprincessbala@gmail.com

Dharshini A
Department of Computer Science and Engineering,
Jayaraj Annapackiam CSI College of Engineering, Nazareth, Chennai, India
antonyaustin2000@gmail.com

Jenitha R
Department of Computer Science and Engineering,
Jayaraj Annapackiam CSI College of Engineering, Nazareth, Chennai, India
jenitaramesh6@gmail.com

Jency Ruby S
Department of Computer Science and Engineering,
Jayaraj Annapackiam CSI College of Engineering, Nazareth, Chennai, India

***Abstract* - This project presents a Book Exchange Platform with Integrated Chat System that enables users to post, browse, and exchange books efficiently. The system allows users to register, log in, and upload details of books they wish to exchange, including title, category, and location. Users can explore available books and initiate communication with other users through a real-time chat module.**

The backend is developed using Django REST Framework, ensuring secure data handling and authentication, while the frontend is built using Ionic Angular to provide a responsive user interface. The chat functionality enhances user interaction by enabling direct communication between users regarding book exchange.

This system aims to simplify the process of book sharing, reduce costs, and promote reuse of educational resources through a user-friendly and interactive platform.

I. INTRODUCTION

This project presents a Book Exchange Platform with Integrated Chat System that enables users to post, browse, and exchange books efficiently. The system allows users to register, log in, and upload details of books they wish to exchange, including title, category, and location. Users can explore available books and initiate communication with other users through a real-time chat module.

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II. EXISTING SYSTEM

- In the existing system, book exchange is mostly performed through manual or unorganized methods such as social media groups, messaging apps, or direct personal communication. These methods lack a structured platform for managing book listings and user interactions.
- Users often face difficulties such as:
- Lack of a centralized system to manage book listings
- No proper filtering or categorization of books
- Communication delays due to external messaging platforms
- No secure authentication or user verification
- Difficulty in tracking available books and interested users
- As a result, the process becomes inefficient, time-consuming, and unreliable.

III. PROPESED SYSTEM

- The proposed system is a web-based Book Exchange Platform integrated with a chat module to improve user interaction and efficiency. It provides a centralized environment where users can post books, browse available listings, and directly communicate with other users.
- Key features include:
- User registration and login with secure authentication
- Posting book details such as title, category, and location
- Viewing and filtering available books
- Integrated chat system for real-time communication
- Backend API using Django REST Framework
- Responsive frontend using Ionic Angular
- This system improves usability, enhances communication, aensures a structured approach to book exchange.

IV. METHODOLOGY

The development of the system follows a structured approach involving frontend and backend integration.

A. Requirement Analysis

The system requirements were identified, including user authentication, book posting, browsing, and chat functionality.

B. System Design

The architecture consists of:

Frontend: Ionic Angular

Backend: Django REST Framework

Database: MySQL (WAMP Server)

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C. Implementation

Backend APIs were developed for user authentication, book management, and messaging Frontend pages were created for login, signup, home, post book, and chat Token-based authentication was implemented for secure access

D. Chat Integration

A messaging system was implemented to allow communication between users. Messages are stored in the database and retrieved using APIs.

E. Testing

Each module was tested individually, including login, posting books, and chat functionality, to ensure proper working.

F. Deployment & Execution

The system runs locally using Ionic for frontend and Django server for backend

V. SYSTEM ARCHITECHTURE

- The Book Exchange Platform with Chat System successfully provides an efficient and user-friendly solution for sharing and exchanging books. The system overcomes the limitations of traditional methods by offering a centralized platform where users can easily post, browse, and communicate regarding book availability.
- With the integration of secure authentication, structured book management, and a real-time chat feature, the application enhances user interaction and simplifies the exchange process. The use of Django REST Framework for backend development and Ionic Angular for frontend ensures scalability, flexibility, and a responsive user experience.
- Overall, the project demonstrates how modern web technologies can be effectively utilized to build a practical and interactive system that promotes resource sharing, reduces costs, and encourages collaborative learning.

Future enhancements may include real-time notifications, advanced search filters, and deployment to a cloud-based environment for wider accessibility .

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