BookShare

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Submitted in partial fulfilment of the requirements of
the degree of

Bachelor of Engineering

(Information Technology)

By

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Under the guidance of

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VIVEKANAND EDUCATION SOCIETY'S INSTITUTE OF TECHNOLOGY, Chembur, Mumbai 400074

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(Autonomous Institute Affiliated to University of Mumbai, Approved by AICTE & Recognised by Govt. of Maharashtra)
NAAC accredited with 'A' grade

Certificate

This is to certify that project entitled

BookShare

By

Rujuta Medhi

In fulfilment of degree of BE. (Sem. VI) in Information Technology for Project is approved.

Prof. Guide Name
Project Mentor

Dr.(Mrs.)Shalu Chopra
H.O.D

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Principal

Date: / /2024
Place: VESIT, Chembur

College Seal

Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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(Signature)

Rujuta Medhi (27)

Abstract

In an increasingly digital world, access to books and literature remains crucial for knowledge sharing and personal growth. The **BookShare** project addresses the challenge of book accessibility by providing a platform that allows users to easily lend and borrow books within their community. This system leverages simple yet effective features to connect people with the books they need, while ensuring smooth interactions between lenders and borrowers. **BookShare** simplifies the process of discovering, lending, and borrowing books, making it easier for people to share knowledge and encourage reading.

By using a clean and intuitive web interface built with React and Flask, **BookShare** offers a user-friendly experience with real-time updates, allowing users to list and request books effortlessly. This project demonstrates how technology can promote collaboration and foster a culture of learning and book sharing. **BookShare** not only supports individual learning but also nurtures community engagement, making books more accessible to everyone.

Contents

Chapter 1

Introduction

1.1. Introduction

The **BookShare** project aims to create an online platform where users can lend and borrow books within their community. The platform simplifies the process of discovering, lending, and borrowing books, creating a more accessible and sustainable way to share literature. By fostering a community-based book-sharing system, **BookShare** encourages knowledge exchange and helps individuals gain access to books they might not otherwise be able to afford or find..

1.2. Objectives

- Allow users to list books available for lending.
- Enable users to browse and request books for borrowing.
- Provide a user-friendly interface for managing lent and borrowed books.
- Track book status (available, borrowed, returned).
- Build a secure authentication system for users to interact with the platform.

1.3. Motivation

In today's world, access to books can be limited by financial constraints or availability in local bookstores and libraries. **BookShare** addresses this issue by providing a platform for individuals to lend and borrow books within their community. The motivation behind this project is to create a more sustainable and cost-effective way for people to access the literature they need, while also fostering a community of readers who share knowledge and resources.

1.4. Scope of the Work

The **BookShare** project encompasses the following deliverables:

- **Book Lending System:** Users can list books they are willing to lend and manage their available collection.
- **Book Borrowing System:** Users can search for books they want to borrow, send requests, and manage borrowed books.
- **Book Status Management:** Track the status of borrowed and lent books (pending, borrowed, returned).

Chapter 2

Literature Survey

2.1. Review of Literature Survey

1. Library Management Systems: A Review and Future Directions
Authors: S. S. V. R. Reddy, M. A. R. Reddy
Publisher: Springer
Objective/Problem Statement:
The paper discusses the challenges of traditional library management systems, such as maintaining physical records and ensuring the availability of books.
Proposed System:
The authors propose the use of a digital system for managing library book lending, which can also be used to improve the efficiency of personal book-sharing platforms.
Conclusion:
A digital platform that tracks books and their status can streamline lending and borrowing processes, making book sharing more efficient and reliable

2. Book Swap: A Community-based Book Sharing Application.
Authors: Emily West, Anna Cox, Nicholas Moore
Publisher: ACM
Objective/Problem Statement:
This study explores a community-based platform for book swapping, focusing on how users can lend and borrow books in a local network.
Proposed System:
The proposed system allows users to list available books and search for books they want to borrow. It includes features for sending and accepting lending requests.
Conclusion:
The platform promotes sustainable reading habits and community engagement, showing the potential of local book-sharing systems in a digital era.

3. A Book Lending Platform: Design and Development
Authors: John D. Smith, Mary W. Jackson
Publisher: IEEE
Objective/Problem Statement:
The paper aims to develop a user-friendly platform for lending and borrowing books, targeting individual users and libraries.
Proposed System:
The system focuses on providing secure transactions, where users can list their books, request loans, and track the status of borrowed books.
Conclusion:
The platform successfully facilitates secure lending and borrowing, improving the efficiency of local book-sharing networks.

Chapter 3

3.1. Introduction

The design and implementation phase of the **BookShare** project focuses on transforming the conceptual system into a working software solution. The goal is to develop a user-friendly platform for lending and borrowing books within a community. This system allows users to list books they want to lend, search for books they wish to borrow, and manage their book-sharing interactions effectively.

3.2 Technology Stack

Frontend:

- React.js: A JavaScript library for building interactive user interfaces, especially single-page applications.
- CSS: Styles the visual presentation of the website, making it look appealing.
- Axios: A promise-based HTTP client for making requests to the backend and handling responses.

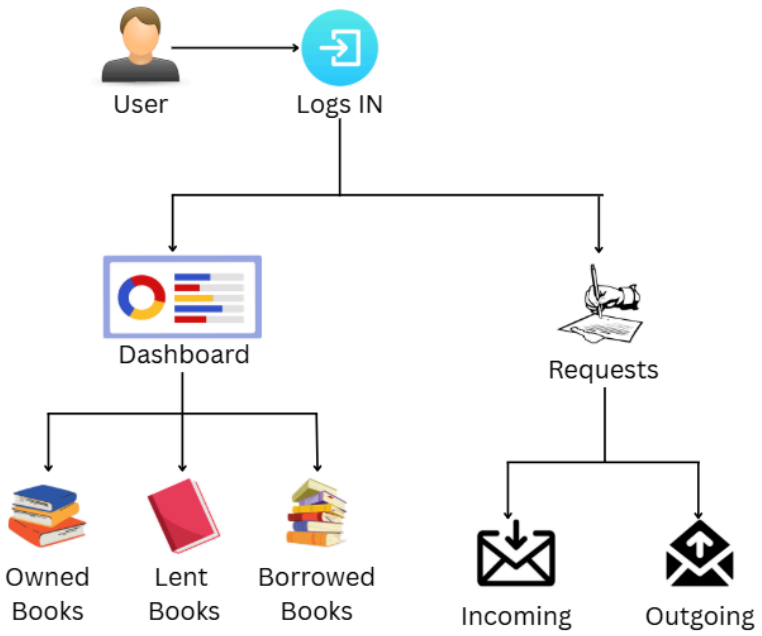
Backend:

- Flask: A lightweight Python web framework for building APIs and web applications.
- Flask-CORS: A Flask extension that handles Cross-Origin Resource Sharing (CORS), allowing your frontend to make requests to the backend from different origins.

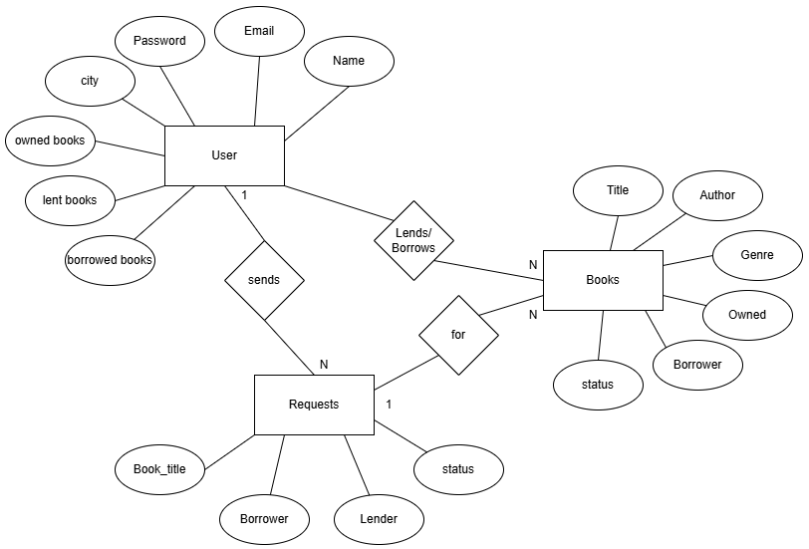
Database:

- MongoDB: A NoSQL database that stores data in flexible, JSON-like format, making it easy to scale and work with unstructured data.

3.3. Flowchart



3.4. ER



3.5. Hardware Requirements

Component	Specification
Processor	Intel i5/i7 or AMD equivalent
RAM	8GB minimum, 16GB preferred
Storage	100GB HDD or SSD
GPU	Optional (for future features)
Internet Connectivity	Required for cloud hosting and API calls

3.7. Software Requirements

Software	Version/Details
Operating System	Windows 10/11, macOS, Linux
Python	3.8 or above
Flask	Flask 2.x
React	18.x
Node.js	16.x or above
Git	Latest
IDE	VS Code, PyCharm, or any preferred editor
Libraries (Python)	NumPy, Pandas, Flask, Django, React

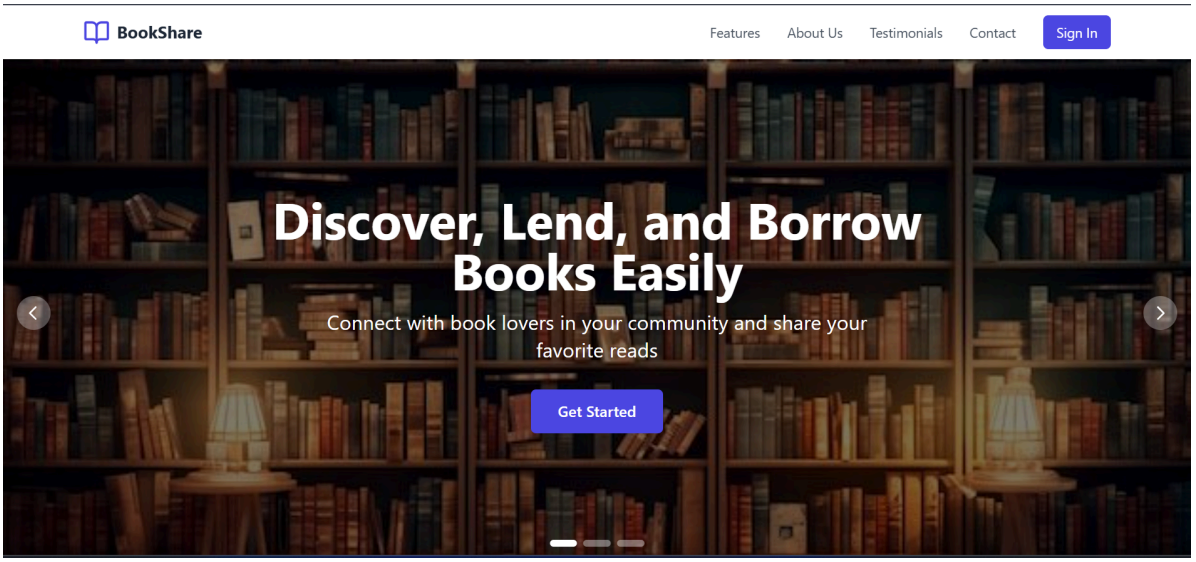
Chapter 4

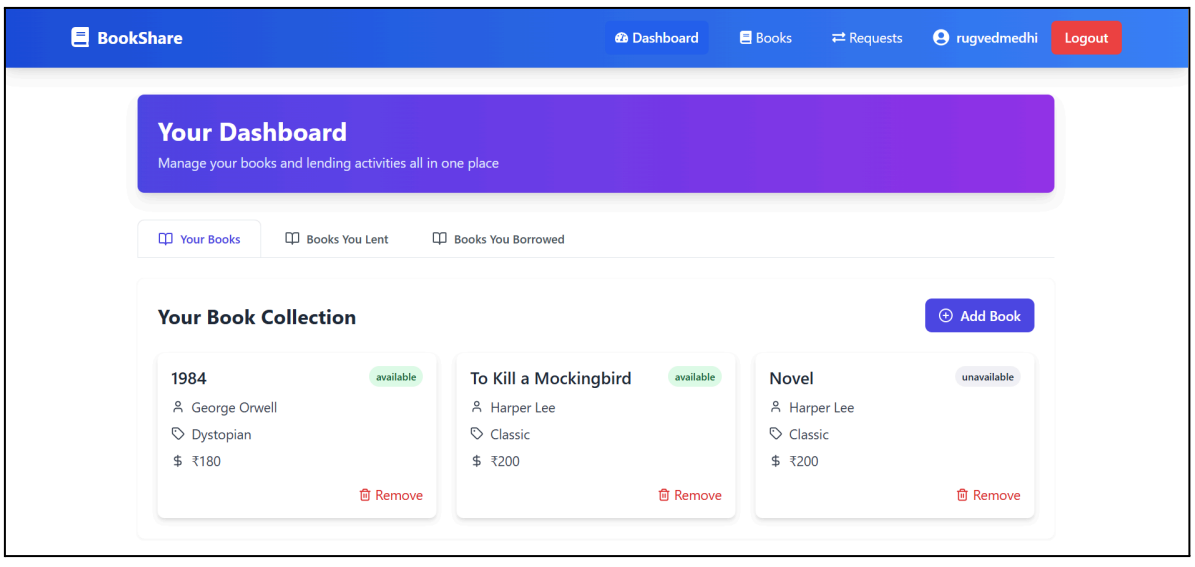
Results and Discussion

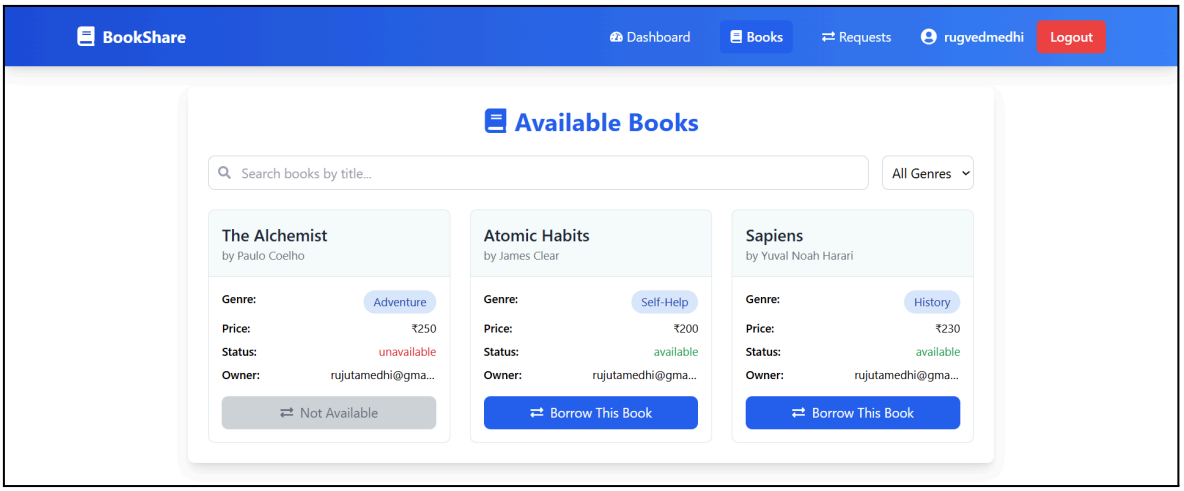
4.1. Results of Implementation

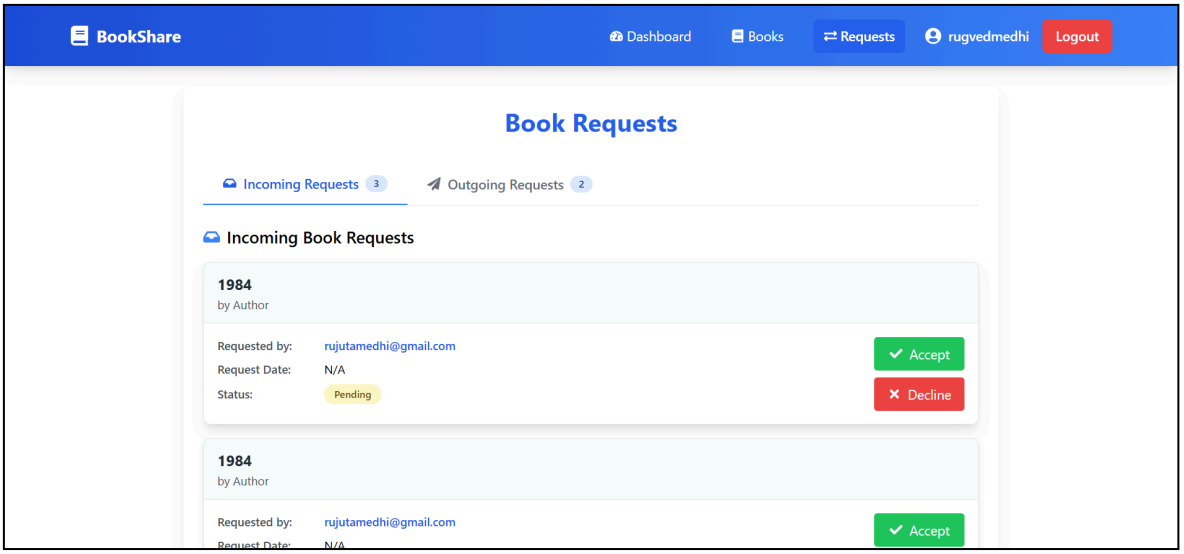
- **Book Listing & Search:** Achieved efficient listing of books with real-time search functionality. Users can easily search by title, author, or category.
- **Lending & Borrowing Request Management:** The system enables users to send and receive requests seamlessly, with real-time status updates.
- **System Integration:** The backend system integrates smoothly with the frontend interface, ensuring smooth communication and real-time data updates.
- **Deployment:** The working prototype has been deployed and tested, with users able to borrow, lend, and track books successfully.

4.2. Implementation Screenshots









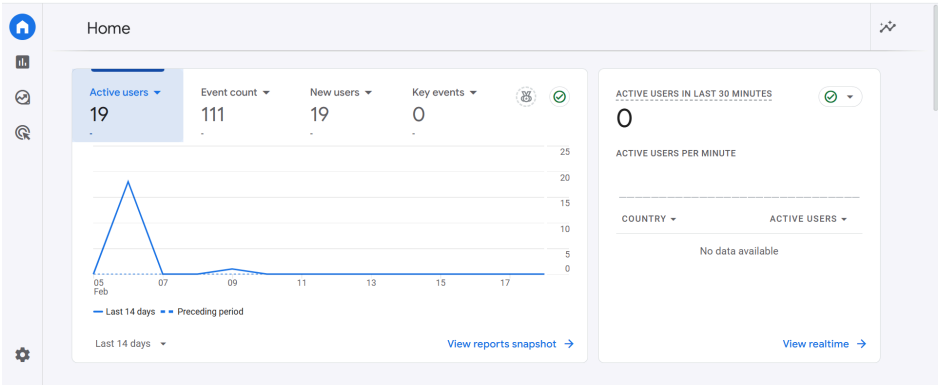
4.3. Result Analysis

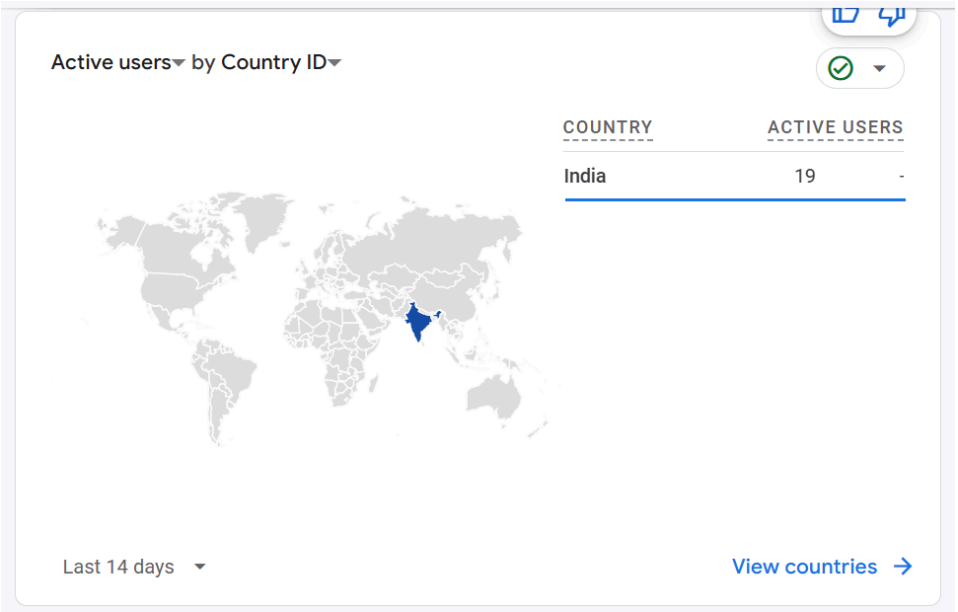
- **Search Accuracy:** The search function accurately retrieves books based on keywords (title, author, category) with minimal delay (~1-2 seconds).
- **Request Management Precision:** The lending and borrowing requests are processed efficiently, with real-time notifications for users about the status of their requests.
- **Average Response Time:** The platform responds within ~2 seconds for lending/borrowing requests and ~1 second for searching.

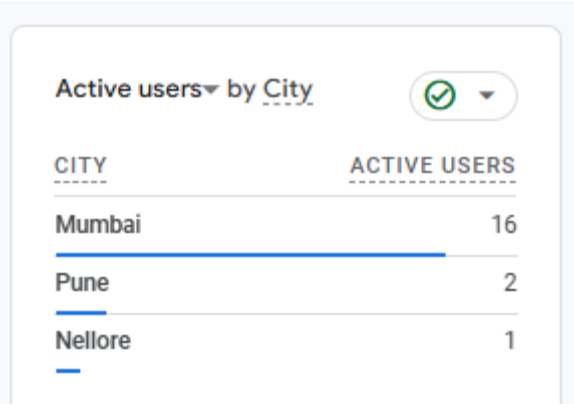
Chapter 5

5.1. Google Analytics

website link: https://webx-proj.vercel.app/







5.2. Conclusion

BookShare successfully creates a platform for users to borrow and lend books within their community. By simplifying the process of searching, listing, and managing book requests, **BookShare** fosters a collaborative environment that promotes knowledge sharing and community engagement. The system ensures real-time updates for lending and borrowing requests, providing an efficient and seamless user experience. The use of Django, Flask, and React ensures a robust and scalable platform, capable of handling multiple users and growing book databases. Ultimately, **BookShare** helps bring people together through literature, promoting reading and sharing.

5.3. Future Scope

- **Mobile Application Development**: A mobile app to extend accessibility, enabling users to borrow and lend books on the go.
- **Barcode/QR Scanner Integration**: Allow users to quickly list or search for books by scanning their ISBN barcode or QR code.
- **Rating and Review System**: Users could leave reviews and ratings for books, improving the borrowing experience and trustworthiness.
- **Advanced Search Filters**: Incorporating additional filters such as book genre, condition, and language to improve search functionality.
- **Social Media Integration**: Enabling users to share book listings on their social media profiles, expanding the platform’s reach.
- **User Profiles with Reading History**: Allow users to track books they've borrowed or lent, as well as create personalized reading lists.
- **Collaborative Book Groups**: Users could form groups to share books among friends or study groups, encouraging social reading.

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3. Raskar, S., Kharche, S., & Gotarane, V. (2020).. IEEE.