Online Second-hand book Buying and Selling

AN INTERNSHIP REPORT

Submitted by

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In partial fulfillment for the award of the degree of

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in

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Gujarat Technological University, Ahmedabad

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L.D. COLLEGE OF ENGINEERING

Navarangpura, Ahmedabad.

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Online second-hand book buying and selling** has been carried out by **Sanjay Sureshbhai Dantani** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Prof. Zishan Noorani	**Dr. Chirag Thaker**
Internal Guide	**Head of Department**
	Computer Engineering

L.D. COLLEGE OF ENGINEERING

Navarangpura, Ahmedabad.

DECLARATION

I hereby declare that the Internship report submitted along with the Internship Project entitled **Online second hand book buying and selling book** submitted in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering to Gujarat Technological University, Ahmedabad, is a Bonafede record of original project work carried out by me at Radixweb under the supervision of Prof. Zishan Noorani and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the student **Sign of the student**

Sanjay Sureshbhai Dantani

ACKNOWLEDGEMENT

The success and final outcomes of this internship required a lot of guidance and assistance from many people, and We are extremely privileged to have got this all along the completion of our internship. All that we have done is only due to such supervision and assistance, and we should not forget to thank them.

We would like to take the opportunity to thank and express our deep sense of gratitude to corporate mentor, **Mrs. Varsha Oberoi**. We are greatly indebted to them for providing their valuable guidance at all stage of the study, their advice, constructive suggestions, positivity and supportive attitude and continuous encouragement, without it would have not been possible to complete the internship.

We heartily thank our faculty mentor of the Computer Science & Engineering, **Prof. Zishan Noorani** Furthermore, we are thankful to and fortunate enough to get constant encouragement, support, and guidance from all teaching staff of the Computer Science & Engineering Department which helped us in successfully completing our internship program. We are thankful to **Radixweb Private Limited** for giving us the opportunity. We owe our wholehearted thanks and appreciation to the entire staff of the company for their cooperation and assistance during our work.

Yours Sincerely,

Sanjay Dantani

ABSTRACT

Students have many course-based literature text books that they have stopped reading and these books are laying on their book shelves unused. These books can be sold and the proceeds can be used to buy another book the student currently needs. These websites will not only serve students but can also serve the entire population or anybody who wants to buy second hand books or wants to empty their book shelves and make financial gain from it. These books can just be simply be uploaded to the website and another student or person can have access to buy the book by just visiting the website. Students also have lesser incomes compared to the rest of the working population. Hence any reasonable resource for getting income is always welcomed.

All these will be achieved by creating a user friendly complete online secondhand book buying and selling portal.

LIST OF FIGURES

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ABBREVIATIONS

JS	**JavaScript**
OSB^{2}S	**Online second-hand book buying and selling**
AJAX	**Asynchronous JavaScript and XML**
API	**Application Programming Interface**

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1. OVERVIEW OF THE COMPANY

1.1 HISTORY

Fig 1.0 radix logo

About Radixweb

As a center of technology revolution, Radixweb helps organizations achieve competitive agility by minimizing complexities and generating new opportunities

Radixweb – A hub for Cutting-edge Software Solutions
A commitment to be a value-driven organization with the highest standards helped Radixweb build long-term, value-centric client relationships and become one of the globally acclaimed software development companies

We help organizations rapidly and conveniently transform businesses with software development solutions that Matters. We partner with a relentless focus on customer relationships and help them generate incremental revenue growth, extend market reach, and enhance offerings. Embedding technical and functional competency into core processes and mindsets, we enable global organizations to thrive in a hyper-competitive market.

With an exceptional team, we combine in-depth experience, technology innovation, time-tested processes, and business insights to help you turn your futuristic goals into reality. Our Vision is to build a culture of innovation at scale, with transparency. We are continually working to help clients reinvent their businesses with scalable software solutions.

1.2 ACHIEVEMENTS

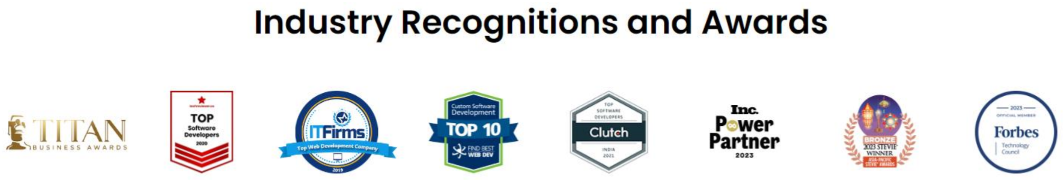
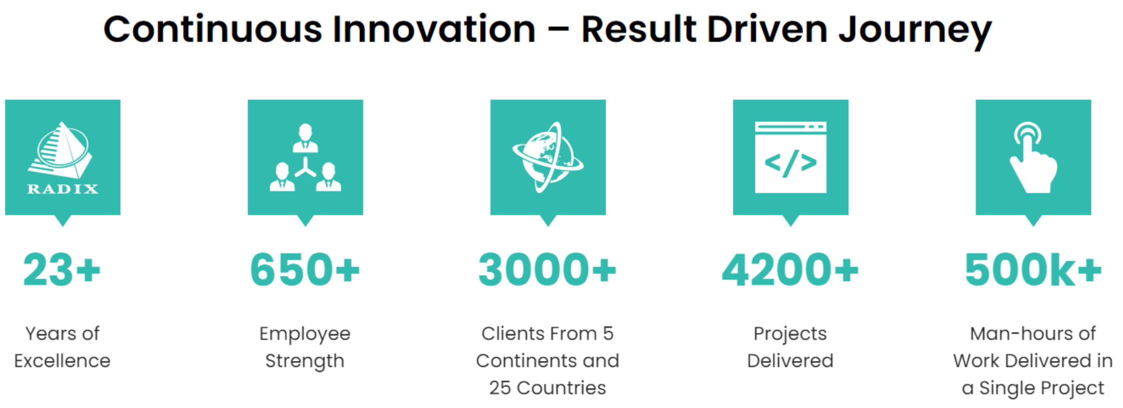

Industry Recognitions and Awards
TITAN BUSINESS AWARDS
TOP Software Developers 2020
ITFirms Top Web Development Company
Custom Software Development TOP 10
Clutch
Inc. Power Partner 2023
BRONZE 2023 STEVIE WINNER
Forbes Technology Council

Fig 1.1 Achievements

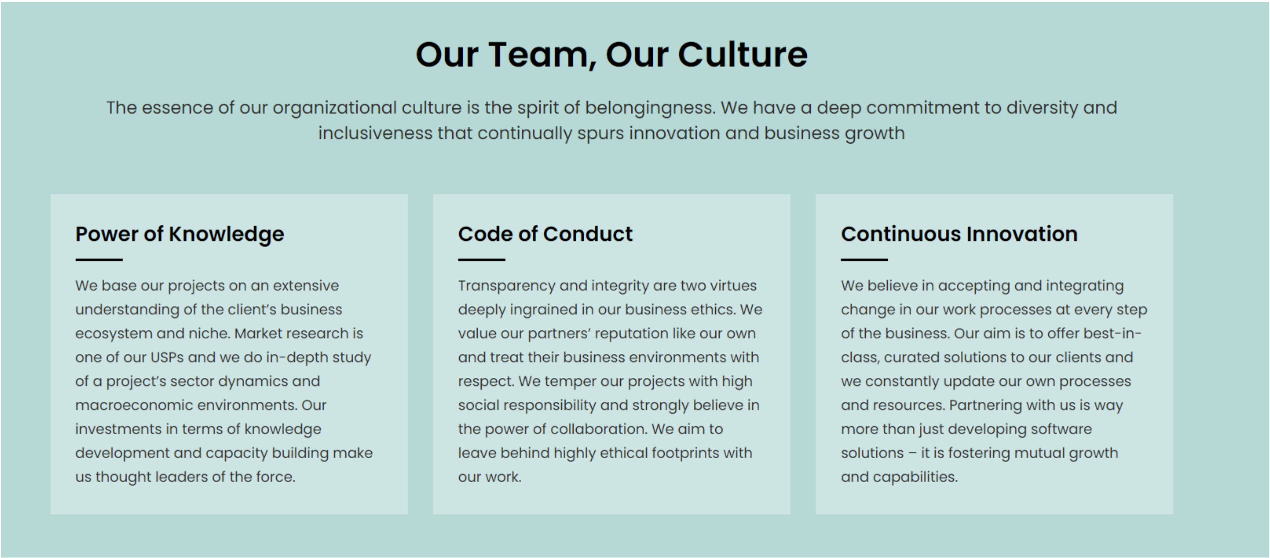


Continuous Innovation – Result Driven Journey

23+	650+	3000+	4200+	500k+
Years of Excellence	Employee Strength	Clients From 5 Continents and 25 Countries	Projects Delivered	Man-hours of Work Delivered in a Single Project

Fig 1.2 Continuous innovation of company

1.3 VALUES AT Radix



Our Team, Our Culture

The essence of our organizational culture is the spirit of belongingness. We have a deep commitment to diversity and inclusiveness that continually spurs innovation and business growth

Power of Knowledge

We base our projects on an extensive understanding of the client's business ecosystem and niche. Market research is one of our USPs and we do in-depth study of a project's sector dynamics and macroeconomic environments. Our investments in terms of knowledge development and capacity building make us thought leaders of the force.

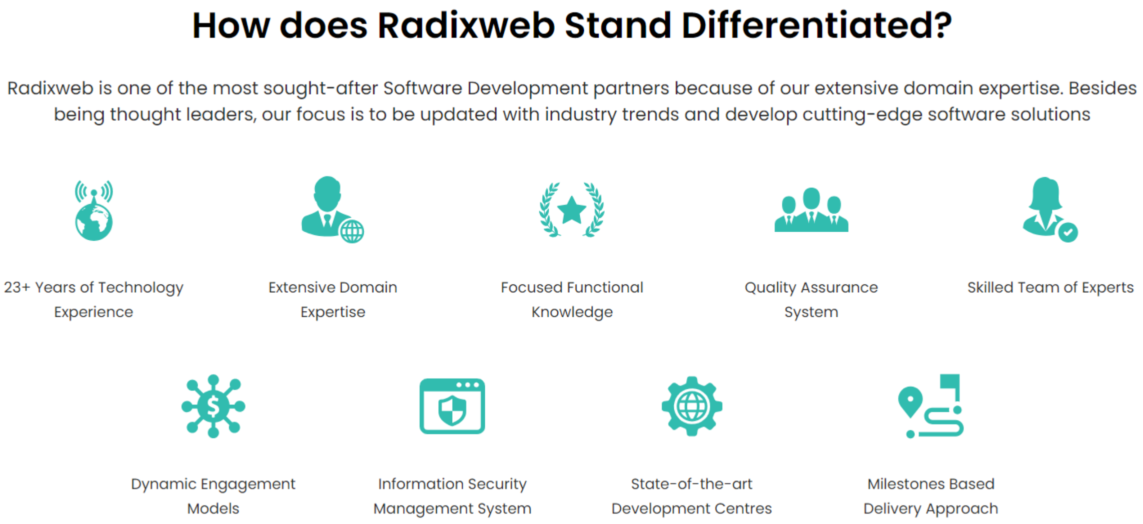
Code of Conduct

Transparency and integrity are two virtues deeply ingrained in our business ethics. We value our partners' reputation like our own and treat their business environments with respect. We temper our projects with high social responsibility and strongly believe in the power of collaboration. We aim to leave behind highly ethical footprints with our work.

Continuous Innovation

We believe in accepting and integrating change in our work processes at every step of the business. Our aim is to offer best-in-class, curated solutions to our clients and we constantly update our own processes and resources. Partnering with us is way more than just developing software solutions – it is fostering mutual growth and capabilities.

Fig 1.3 values at radix



How does Radixweb Stand Differentiated?

Radixweb is one of the most sought-after Software Development partners because of our extensive domain expertise. Besides being thought leaders, our focus is to be updated with industry trends and develop cutting-edge software solutions

- 23+ Years of Technology Experience
- Extensive Domain Expertise
- Focused Functional Knowledge
- Quality Assurance System
- Skilled Team of Experts
- Dynamic Engagement Models
- Information Security Management System
- State-of-the-art Development Centres
- Milestones Based Delivery Approach

Fig 1.4 Differentiation of company

2. OVERVIEW OF TECHNOLOGIES

2.1 TECHNOLOGIES DESCRIPTION

HTML

HTML, or Hypertext Markup Language, is the standard markup language for creating web pages and web applications. It provides the structure and layout for content on the World Wide Web. HTML consists of a series of elements, which are represented by tags enclosed in angle brackets (< >). These tags define the structure of the content, such as headings, paragraphs, links, images, and more.

CSS

"react.module.css" likely refers to a file naming convention used in React applications for styling components using CSS Modules.

CSS Modules is a feature that allows you to write CSS code scoped to a specific component in React applications. Each CSS file becomes a separate module that is scoped locally to the component it's imported into. This helps avoid naming conflicts and ensures that styles only affect the intended components.

When using CSS Modules with React, you typically create CSS files with names ending in “. module.css" to indicate that they are CSS Modules. For example, if you have a React component named "Button", you might have a corresponding CSS file named "Button.module.css".

JavaScript

JavaScript is a versatile programming language and essential for creating dynamic and interactive web pages and applications. Widely used in front-end development, JavaScript enables developers to manipulate HTML and CSS elements, handle user interactions, and communicate asynchronously with web servers. Its lightweight nature and extensive ecosystem of libraries and frameworks make it a preferred choice for building responsive and user-friendly web interfaces. Additionally, JavaScript's adoption in server-side development with platforms like Node.js allows for seamless development across the entire stack, further enhancing its utility and versatility in modern web development projects.

REACT

- React is a JavaScript library for building user interfaces.
- React is used to build single-page applications.
- React allows us to create reusable UI components.

Git

Git serves as a version control system utilized by developers to manage changes made to source code throughout the development process. It provides a structured framework for tracking alterations, enabling users to monitor modifications, their timestamps, and respective authors. Git facilitates collaborative development by allowing multiple individuals to work on the same project concurrently without conflicts. Additionally, it offers mechanisms for error recovery and revision control, empowering developers to revert to previous iterations if necessary. As an integral component of modern software development practices, Git plays a crucial role in maintaining project integrity, fostering efficient collaboration, and ensuring the integrity of codebases.

Restful services

- Rest Stands for Representational state transfer. It is introduced in 2000 by Roy Fielding. In REST architecture, a REST Server simply provides access to resources and the REST client accesses and presents the resources. Here each resource is identified by URIs/ Global IDs.
- REST uses various representations to represent a resource like Text, JSON and XML. JSON is now the most popular format being used in Web Services.

HTTP Methods:

The following HTTP methods are most commonly used in a REST based architecture.

1. GET − Provides a read only access to a resource.
2. PUT − Used to create a new resource.
3. DELETE − Used to remove a resource.
4. POST − Used to update an existing resource or create a new resource.

Virtual DOM:

- Another notable feature is the use of a virtual Document Object Model, or virtual DOM. React creates an in-memory data-structure cache, computes the resulting differences, and then updates the browser's displayed DOM efficiently. This process is called reconciliation.

- This allows the programmer to write code as if the entire page is rendered on each change, while the React libraries only render subcomponents that actually change. This selective rendering provides a major performance boost. It saves the effort of recalculating the CSS style, layout for the page and rendering for the entire page.

2.2 IMPLEMENTATION OF TECHNOLOGIES

HTML

HTML provides the foundational structure and content for web pages, enabling the implementation of web applications by organizing content, integrating with CSS and JavaScript, and ensuring cross-browser compatibility.

CSS

"react.module.css" likely refers to a file naming convention used in React applications for styling components using CSS Modules.

CSS Modules is a feature that allows you to write CSS code scoped to a specific component in React applications. Each CSS file becomes a separate module that is scoped locally to the component it's imported into. This helps avoid naming conflicts and ensures that styles only affect the intended components.

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JavaScript

JavaScript enhances web applications by providing interactivity, dynamic behavior, and client-side processing. It enables developers to create responsive user interfaces, handle user inputs, manipulate HTML and CSS, and interact with server-side resources asynchronously

REACT

1. **Component-Based Architecture**: React encourages a modular approach to building user interfaces. Developers can create encapsulated components that manage their own state, making it easier to reuse code, debug, and maintain applications.
2. **Declarative Syntax**: React uses a declarative programming model, allowing developers to describe the desired UI state, and React takes care of updating the DOM to match that state efficiently. This approach simplifies the development process and reduces the likelihood of bugs.
3. **Virtual DOM**: React utilizes a virtual DOM to optimize DOM manipulation. Instead of directly updating the browser's DOM for every change, React compares the virtual DOM with the actual DOM and only applies the necessary updates, resulting in improved performance.
4. **One-Way Data Binding**: React employs a unidirectional data flow, making it easier to understand how data changes affect the UI. Data flows downward from parent to child components, preventing unexpected side effects and making applications more predictable.
5. **Support for Server-Side Rendering**: React supports server-side rendering (SSR), enabling developers to render React components on the server and send the pre-rendered HTML to the client. This improves performance, SEO, and the initial load time of web applications.
6. **Rich Ecosystem and Community**: React has a vibrant ecosystem with a wide range of tools, libraries, and extensions, such as React Router for routing, Redux for state management, and Material-UI for pre-styled components. Additionally, React has a large and active community, providing support, tutorials, and resources for developers.

Overall, React streamlines application development by promoting code reusability, improving performance, and simplifying state management. Its declarative syntax, virtual DOM, and ecosystem of tools make it a powerful choice for building modern, interactive web applications.

3. INTRODUCTION TO INTERSHIP

3.1 INTERNSHIP SUMMARY

During my internship at Radixweb, I had the opportunity to work on a project called "Book Store," utilizing technologies such as HTML, CSS, JQUERY, TYPESCRIPT and React.js. Throughout the internship, I actively contributed to the development of a modern web application aimed at managing and selling books online. My responsibilities included structuring content with HTML, styling the user interface using CSS, and implementing interactive components with React.js.

Throughout the internship, I immersed myself in the essentials of web development, gaining valuable insights into front-end technologies and best practices. Gaining knowledge with a team of experienced developers, I leveraged my skills to contribute effectively to the project's success. This experience provided me with a solid foundation in web development and enhanced my proficiency in full stack web development.

Overall, my internship at Radixweb is a valuable learning experience, allowing me to apply theoretical knowledge to real-world projects, work in a collaborative environment, and further develop my technical skills in web development. I am grateful for the opportunity and look forward to applying my learnings to future endeavors.

3.2 PURPOSE

The purpose of the internship was to provide practical experience and exposure to real-world web development projects. Through the online second hand buying and selling portal project, interns were tasked with applying their knowledge of HTML, CSS, and React.js to contribute to the creation of a functional and user-friendly web application for managing and selling books online. The internship aimed to enhance interns' technical skills, foster collaboration within a team environment, and prepare them for future careers in web development. Additionally, the internship provided an opportunity for interns to gain insights into industry best practices, refine their problem-solving abilities, and build a portfolio of projects to showcase their capabilities to potential employers.

3.3 OBJECTIVE

The main objective of my internship at radixweb:

1. Enhance Technical Skills: Enable interns to deepen their understanding and proficiency in HTML, CSS, and React.js through practical application and guided projects.
2. Foster Collaboration: Provide interns with opportunities to collaborate with experienced developers and fellow interns, fostering teamwork, communication, and knowledge sharing.
3. Real-world Application: Empower interns to apply theoretical knowledge to real-world scenarios by actively contributing to the development of a functional and user-friendly book-selling platform.
4. Develop Problem-solving Abilities: Challenge interns with diverse tasks and scenarios to develop their problem-solving skills, adaptability, and resourcefulness in resolving technical challenges.
5. Mentorship and Guidance: Offer mentorship and guidance from experienced developers, providing interns with insights into industry best practices, feedback on their work, and support in their learning journey.
6. Career Readiness: Equip interns with the skills, knowledge, and confidence required to pursue entry-level positions in web development upon completion of the internship.
7. Networking Opportunities: Facilitate networking opportunities for interns to connect with industry professionals, expand their professional network, and explore potential career paths within the field of web development.

Overall, the internship aims to provide a structured and supportive environment for interns to gain practical experience, refine their technical skills, and accelerate their career growth in web development."

3.4 PROJECT SCOP

Online secondhand book buying and selling portal is designed to deal with the customer queries regarding information about different types of books. This is an online System that matches the customer queries regarding the author, publishers, title, price, latest updates, storage information, upgrades etc. against the information stored in the centralized database. The main purpose of this project is to create a communication and user- friendly web portal for selling and buying secondhand books online

3.5 INTERNSHIP PLANING

3.5.1 INTERNSHIP DEVELOPMENT APPROACH AND JUSTIFICATION

For the development approach of the "online secondhand book buying and selling" project, we will adopt the Agile methodology to ensure adaptability, collaboration, and iterative progress. Here's how Agile methodology can be applied to our project:

- **Sprint Planning:** At the onset of each sprint, the team will convene to delineate the sprint goals and objectives. We will scrutinize the project requirements and prioritize tasks based on their significance and complexity, ensuring alignment with the overarching project vision.

- **Architecture Design:** During this phase, we will meticulously design the architecture of our event organization web application. Taking into account factors such as performance, scalability, and user experience, we will map out the application's structure using html, css, react, and other pertinent technologies, ensuring coherence with the project's objectives and user requirements.

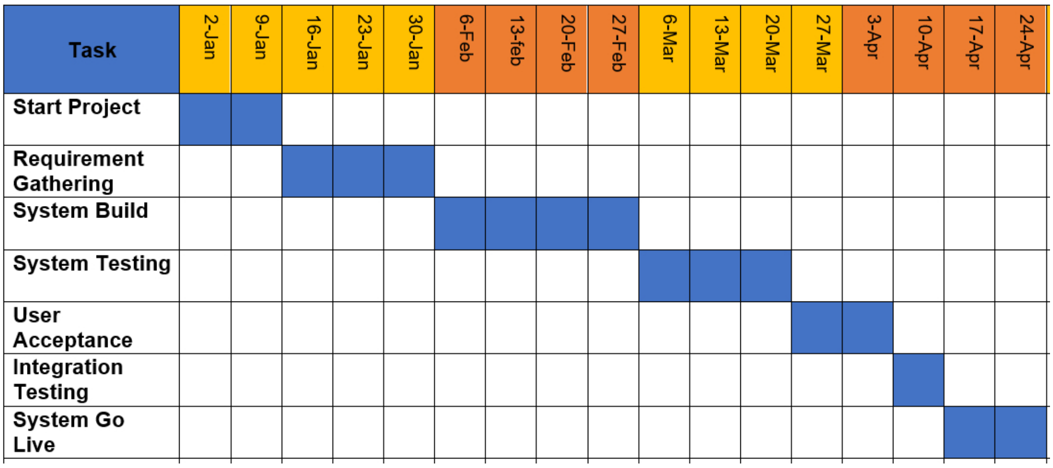
- **Sprint Execution:** Throughout the sprint duration, the team will be engrossed in the development of the " OSB^{2}S " application. Daily stand-ups, sprint demos, and retrospectives will serve as avenues for tracking progress, resolving challenges, and refining strategies. Leveraging HTML, CSS, JS, TYPESCRIPT, among others, we will implement the desired features and functionalities iteratively.

- **Continuous Integration/Continuous Deployment (CI/CD):** I n this phase, we will leverage CI/CD practices to streamline our development pipeline. Utilizing version control systems and automated testing library compatible with react.js. we will ensure the consistency, reliability, and efficiency of our development process.
- **Sprint Review:** At the culmination of each sprint, the team will conduct a comprehensive review to evaluate the sprint outcomes against predefined objectives. We will showcase the "OSB^{2}S" application's progress to stakeholders, solicit feedback, and iterate on the features and functionalities as necessary to align with stakeholder expectations.

- **Sprint Retrospective:** This phase will afford the team the opportunity to reflect on the sprint's successes and areas for improvement. By fostering open dialogue and constructive feedback, we will identify opportunities for enhancement, refine our processes, and fortify our collaborative dynamics, thereby perpetuating a culture of continuous improvement.

By adhering to the Agile methodology, our endeavor is to deliver a resilient, user-centric, and feature-rich " OSB^{2}S " application that embodies our project aspirations, accommodates evolving requirements, and engenders stakeholder satisfaction.

3.5.2 Project scheduling



Task	2-Jan	9-Jan	16-Jan	23-Jan	30-Jan	6-Feb	13-feb	20-Feb	27-Feb	6-Mar	13-Mar	20-Mar	27-Mar	3-Apr	10-Apr	17-Apr	24-Apr
Start Project	■	■															
Requirement Gathering			■	■	■												
System Build						■	■	■	■								
System Testing										■	■	■					
User Acceptance													■	■			
Integration Testing															■		
System Go Live																■	■

Fig 3.1 Gantt Chart

3.5.3 ROLES AND RESPONSIBLITIES

Role			
Architecting	**Coding**	**Unit Testing**	**Documentation (TDD)**
✓	✓	✓	✓

TABLE 3.1 Roles & Responsibility

4. SYSTEM ANALYSIS

4.1 STUDY OF CURRENT SYTEM

The current system in the "OSB^{2}S" project exhibits several limitations that hinder its effectiveness and scalability. Firstly, it supports only one API configuration for data synchronization, severely restricting its ability to integrate with multiple third-party systems concurrently. This limitation poses challenges in scenarios where data exchange needs to occur with diverse external sources simultaneously. Moreover, the system's constraint to accommodate only four label dimensions limitsthe granularity of data organization, potentially leading to difficulties in representing complex data structures. Additionally, the absence of threshold limit checks poses a risk of data overload and performance issues during synchronization processes, further hampering the system's scalability andadaptability to evolving business requirements.

4.1.1 Findings:

Limited API Configuration Support:

- The system's restriction to only one API configuration severely limits its ability to integratewith multiple third-party systems concurrently.
- This limitation may result in inefficiencies and bottlenecks in data synchronization processes, especially in scenarios requiring simultaneous data exchange with multipleexternal sources.

Constraint on Label Dimensions:

- The system's restriction to only four label dimensions imposes limitations on the granularity of data organization and categorization.
- Challenges may arise when attempting to represent complex data structures or hierarchies, potentially leading to data misalignment or inconsistency.

Absence of Threshold Limit Checks:

- The absence of threshold limit checks poses a significant risk of data overload and performance degradation during synchronization processes.
- Without threshold limits, there is a heightened risk of system instability, resource exhaustion, and potential disruptions to ongoing operations.

4.1.2 CONCLUSION:

In conclusion, the findings underscore critical limitations in the current system's data synchronization capabilities within the "OSB^{2}S" project. These limitations hinder the organization's flexibility, scalability, and adaptability to evolving business needs. Addressing these limitations is imperative to enhance synchronization functionality, improve data management practices, and ensure the reliability and efficiency of data exchange processes

4.2 PROBLEM AND WEEKNESS OF CURRENT SYSTEM

4.2.1 PROBLEM:

- Limited API Configuration Support: The system only supports one API configuration,restricting its ability to integrate with multiple third-party systems concurrently.
- Absence of Threshold Limit Checks: The system lacks threshold limit checks, increasing therisk of data overload and performance degradation during synchronization processes.
- Limited Synchronization Functionality: Synchronization functionality is restricted to only oneAPI configuration, limiting simultaneous data exchange with multiple external sources.

4.2.2 WEAKNESSES:

- Potential for Data Integrity Issues: The combination of limited API configuration support, label dimension constraints, and absence of threshold limit checks increases therisk of data discrepancies, inaccuracies, and loss, undermining data integrity and reliability.
- Scalability and Adaptability Concerns: The identified limitations hinder the system's scalability and adaptability to evolving business needs, potentially impeding growth andresponsiveness to changing requirements.

4.3 REQUIREMENTS OF CURRENT SYSTEM

We are developing the project from scratch. Functional and Non-functional requirements of the project are as follows.

4.3.1 FUNCTIONAL REQUIREMENTS

1) Customer

R.1: Customer Registration.

R.1.1: Registration

Input: Name, E-mail, Mobile No, address, pin-code, Date-Of-Birth, Gender, Password. Constraints: All Fields are required. Output: Customer Registered Successfully.

R.2: Customer Profile.

R.2.1: Login

Input: E-mail, Password.

Constraints: Correct E-mail & Password must be valid. Output: User will login to the system and redirects to the Homepage.

R.2.2: Edit profile

Input: Enter appropriate details as need. Constraints: All details should be valid. Output: Profile will be updated and stored in the database.

R.2.3: Forget Password

Input: Enter mobile no for change password. Constraints: mobile no must valid. Output: Password Reset Successfully.

R.3: Buying Book

R.3.1: Book search

Input: Author Name, Category, Title. Constraints: One of the fields is compulsory. Output: Book will be displayed as per customer searched.

R.3.2: Select Book

Input: Customer Select book as per requirements. Output: add to cart page will be displayed.

R.3.3: Buy Book

Input: Customer will increment and decrement the cart item and place order. Output: order place successfully.

R.4: Selling Book

R.4.1: Terms & Condition

Input: User must have to Follow & condition to sell book. Constraints: Terms & Condition must be accepted.

Output: Terms & Condition accepted.

R.4.2: Book information

Input: Title, Author Name, Book Edition, Original price, Image. Constraints: All information must be correct.

Output: Book information uploaded successfully.

R.4.3: Add Book

Input: Add book for sell/rental/both. Constraints: One of the fields is compulsory. Output: Book Added successfully.

R.4.4: Remove Book

Input: Click on remove button.

Constraints: Click on remove button is must. Output: Book removed successfully.

R.5: Log out

2) Admin

R.1: Login.

Input: Username, Password.

Constraints: Username, password must be correct. Output: Admin logged in successfully.

R.2: View User.

Input: Enter valid user's id or user's name. Constraints: One of the fields is compulsory. Output: User Viewed successfully.

R.3: Remove User.

Input: Enter valid user's id. Constraints: u_id must be valid. Output: User removed successfully.

R.4: View Book.

Input: Author Name, Category, Title. Constraints: One of the fields is compulsory. Output: Book Viewed successfully.

R.5: Delete Book.

Input: Enter valid book id. Constraints: Book_id must be valid. Output: Book removes successfully.

R.6: Log out

Input:

Constraints: Admin must be logged in. Output: Admin Log out successfully.

4.3.2 FUNCTIONAL REQUIREMENTS

- **Performance:** Ensure that the OSB2S web application delivers optimal performance, with fast loading times and responsive user interactions, even under heavy traffic loads.
- **Scalability:** Design the application to be scalable, capable of handling an increasing number of users, events, and transactions without compromising performance or reliability.
- **Reliability:** Build the application with robust error-handling mechanisms and data validationchecks to ensure high reliability and minimize system downtime or failures.
- **Security:** Implement stringent security measures to protect user data, payment information, and sensitive event details from unauthorized access, breaches, and cyber threats.
- **Accessibility:** Ensure that the OSB2S application is accessible to users with disabilities, complying with accessibility standards and guidelines to provide an inclusive user experience.
- **Compatibility:** Design the application to be compatible with a wide range of devices, browsers, and operating systems, ensuring seamless functionality across different platforms and environments.
- **Usability:** Prioritize user experience by designing an intuitive and user-friendly interface, with clear navigation, consistent layout, and intuitive controls to enhance usability and user satisfaction.
- **Maintainability:** Develop the application with clean, modular code and well-documented architecture to facilitate ease of maintenance, updates, and future enhancements by developers.

4.4 FEASIBILITY STUDY

4.4.1 Does the system contribute to the overall objectives of the organization?

Yes, the proposed OSB2S system architecture aligns with the overarching objectives of the organization. The architecture has been thoroughly reviewed and approved, ensuring that it fulfills the organization's goals and requirements related to event organization and management.

4.4.2 Can the system be implemented using the current technology and within the given cost and schedule constraints?

Affirmatively, the proposed system can be implemented within the given time frame and budget constraints. The technology stack selected for the OSB2S project, including, REACT JS, CSS, HTML, REST API, is well-suited for developing a robust and feature-rich event organization web application. Additionally, the allocated time is sufficient to meet the project deadline, and thebudget is within the approved limits.

4.4.3 Can the system be integrated with other systems which are already in place?

Absolutely, the OSB2S system is designed to seamlessly integrate with other systems that are already in place within the organization's infrastructure. This integration includes existing applications, databases, APIs, and third-party systems. Furthermore, the system architecture incorporates configurable integration settings, allowing users to easily configure connections with other systems and customize data mappings, transformations, and synchronization rulesas per the organization's requirements. This flexibility ensures smooth interoperability and data exchange between OSB2S and existing systems, enhancing overall efficiency and workflow integration.

5. SYSTEM DESIGN

5.1 USECASE DIAGRAM

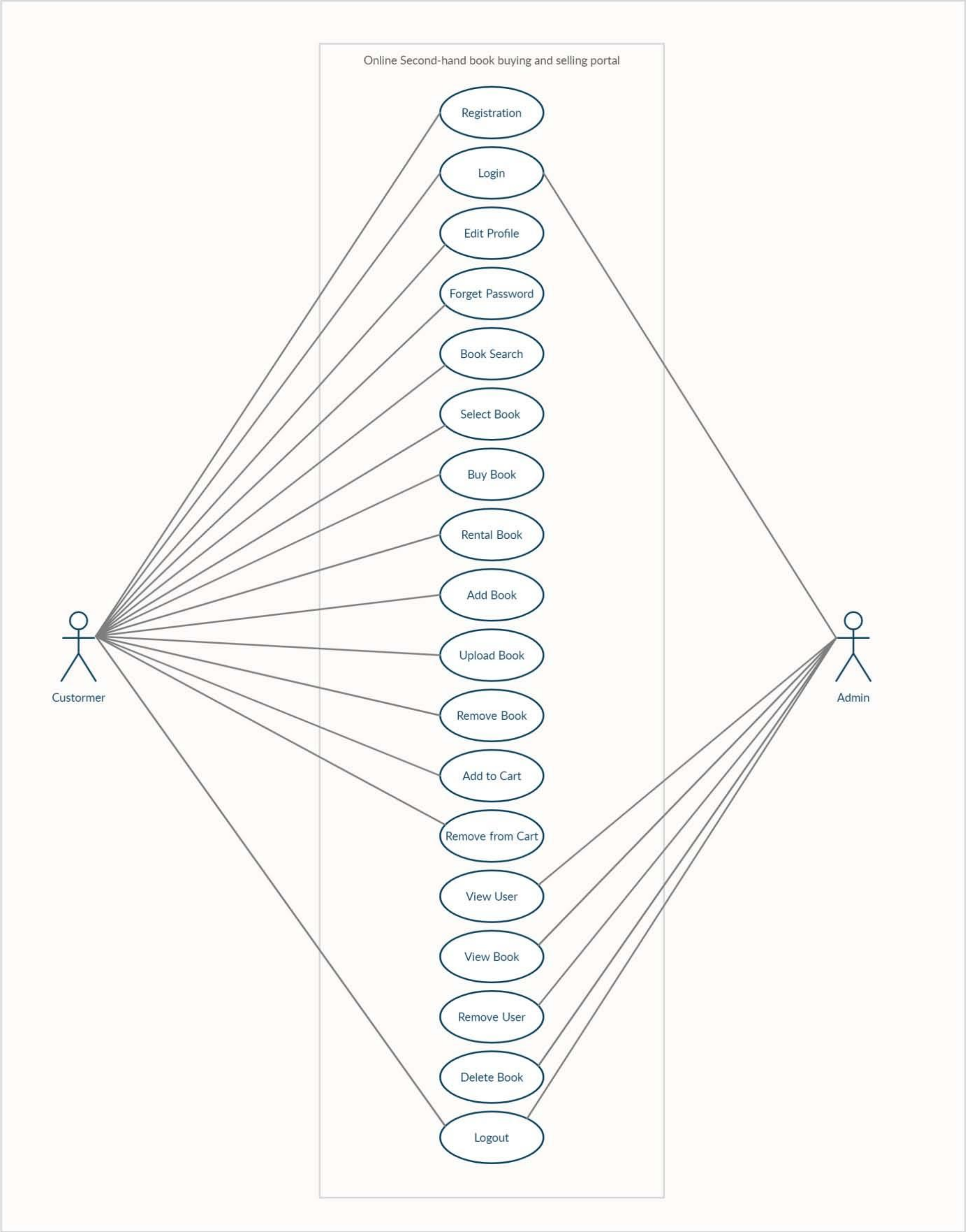


Fig 5.1.1 Use case diagram of system

5.2 ACTIVITY DIAGRAM

Customer buy book: -

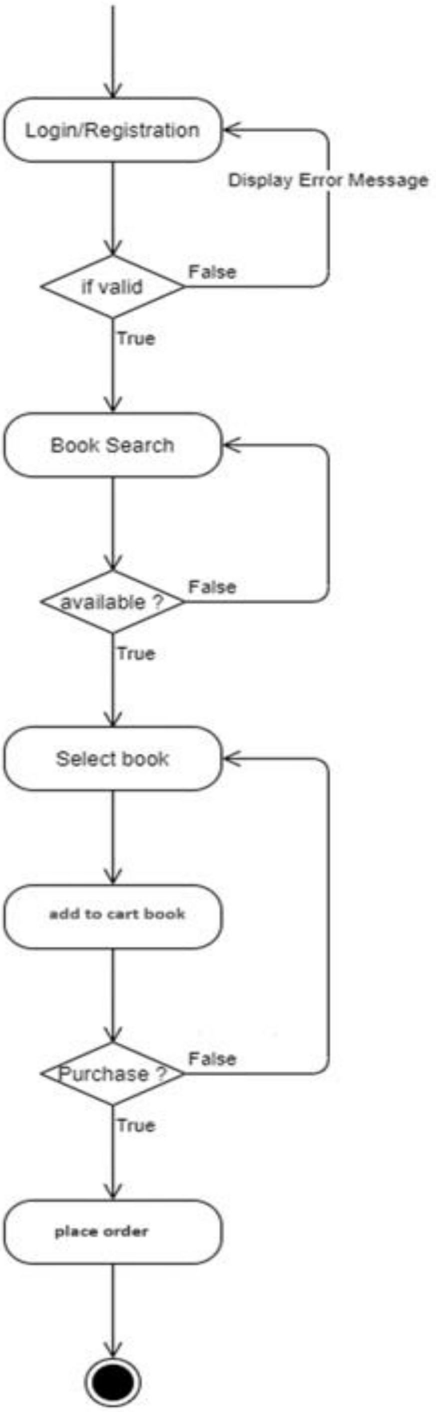


Fig 5.2.1 User buy book Activity diagram

Customer sell book: -

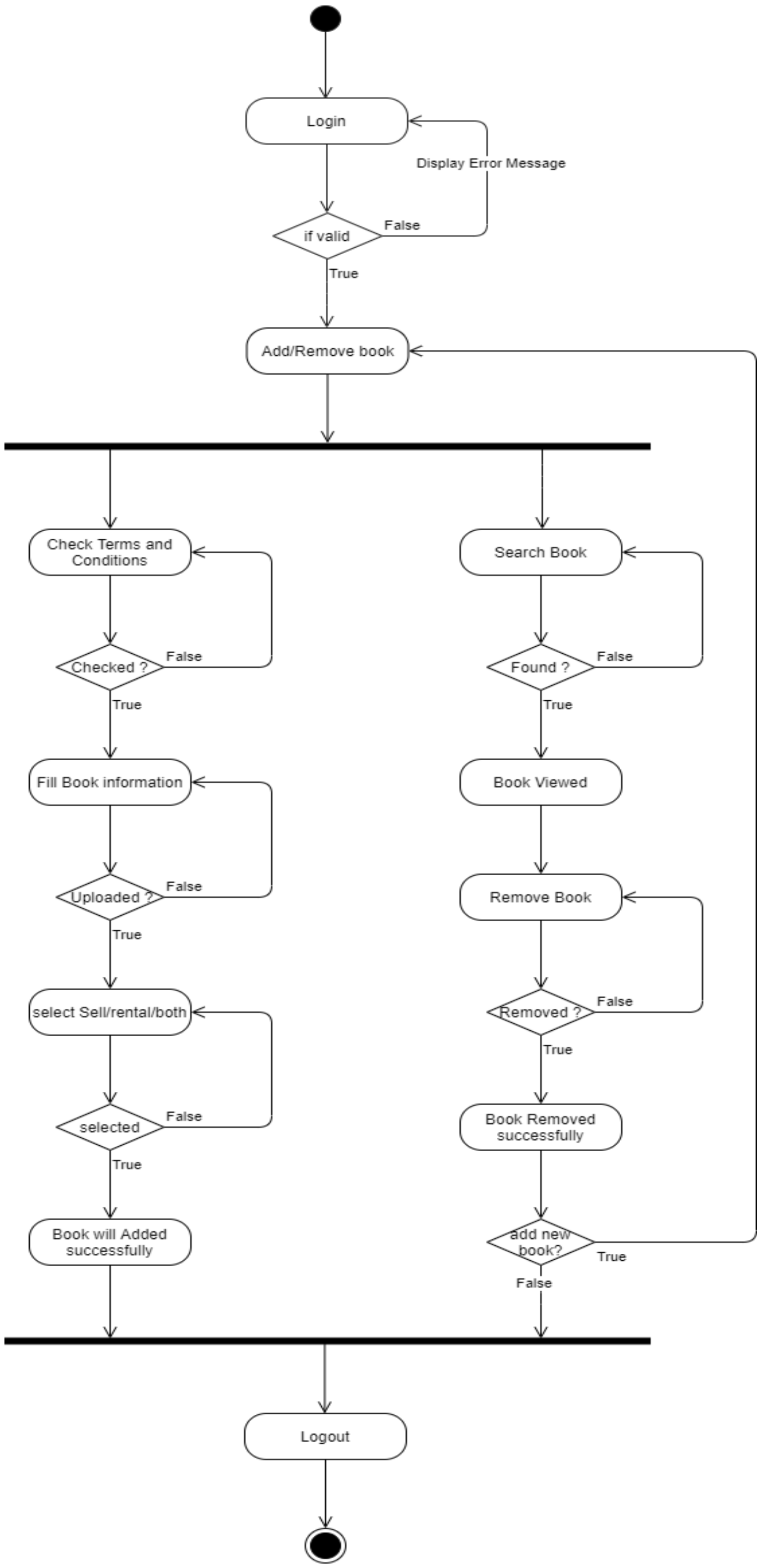


Fig 5.2.2 User sell book activity diagram

Admin: remove book and remove user

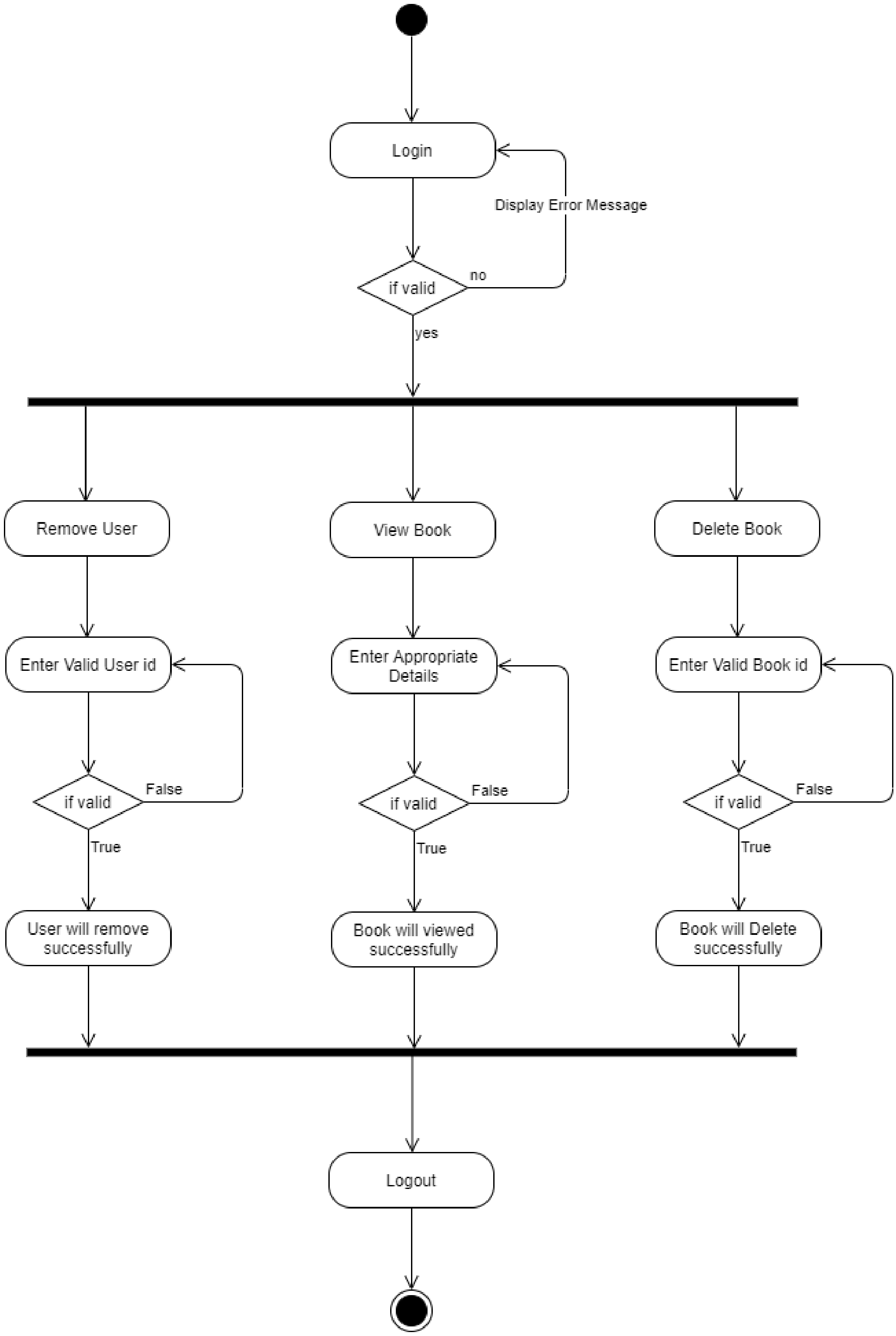


Fig 5.2.3 Admin activity diagram

5.3 SEQUENCE DIAGRAM

Admin

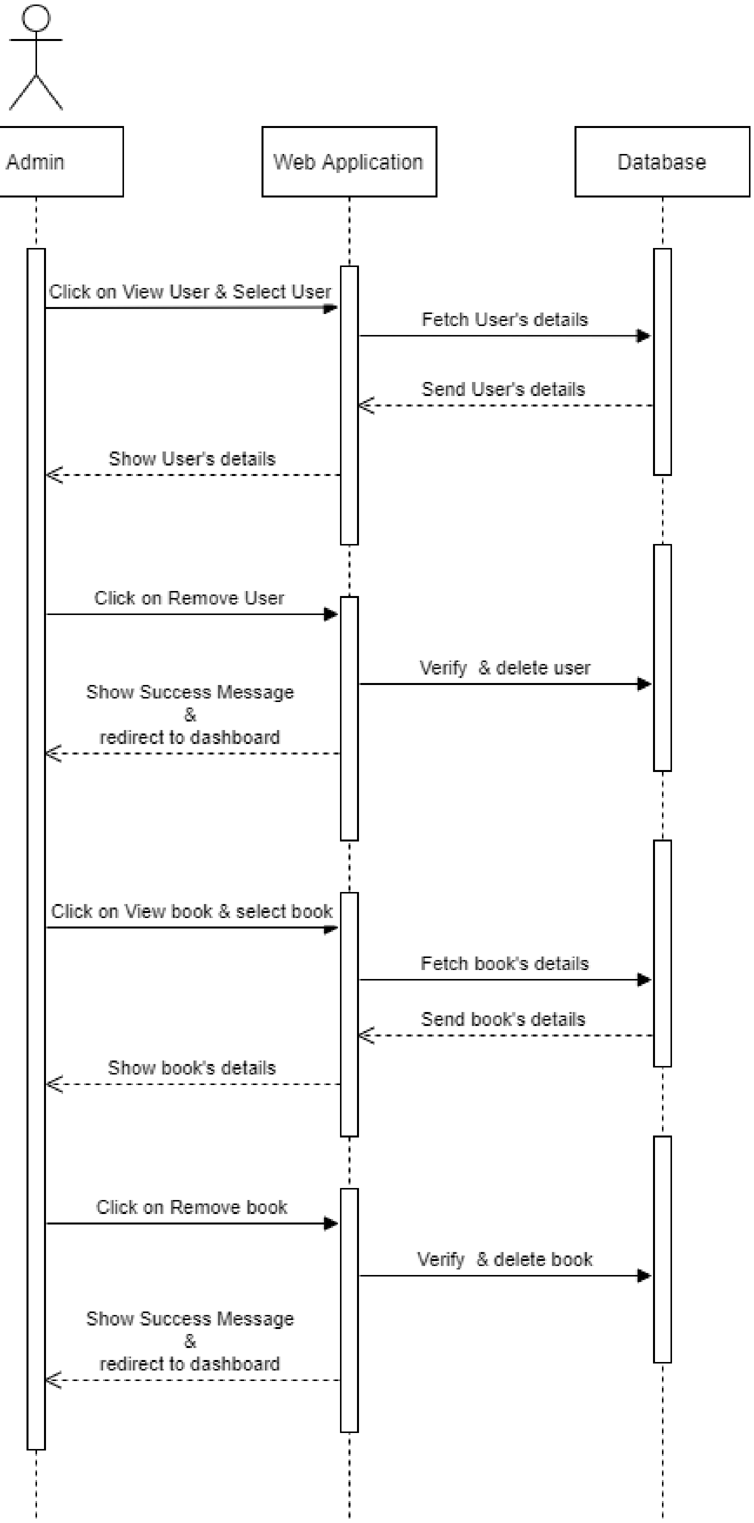


Fig 5.3.1 sequence diagram of admin

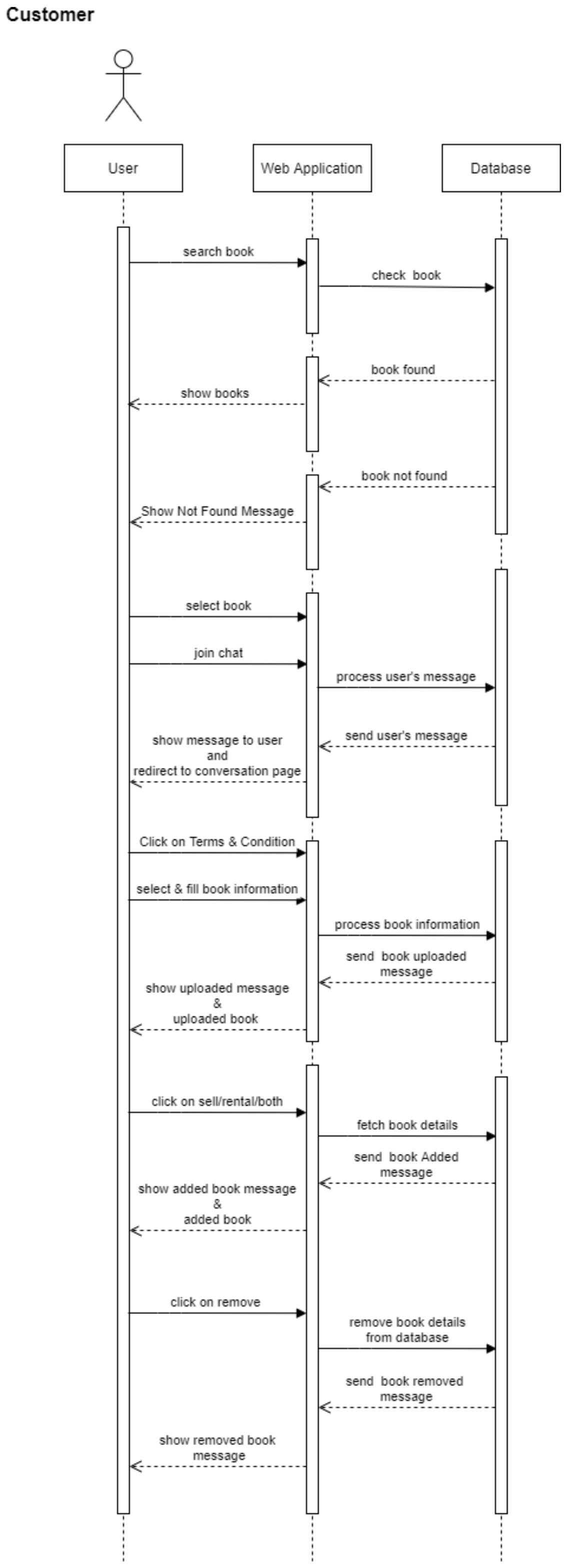


Fig 5.3.2 sequence diagram of admin

5.4 STATE DIAGRAM

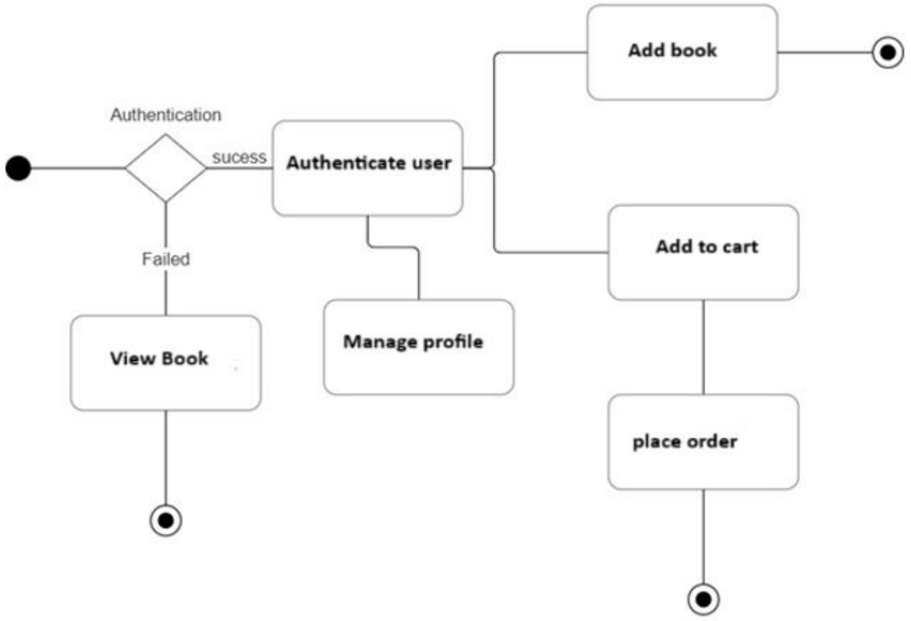


Fig 5.4.1 state diagram of system

5.5 DATA FLOW DIAGRAM

LEVEL 0 DFD

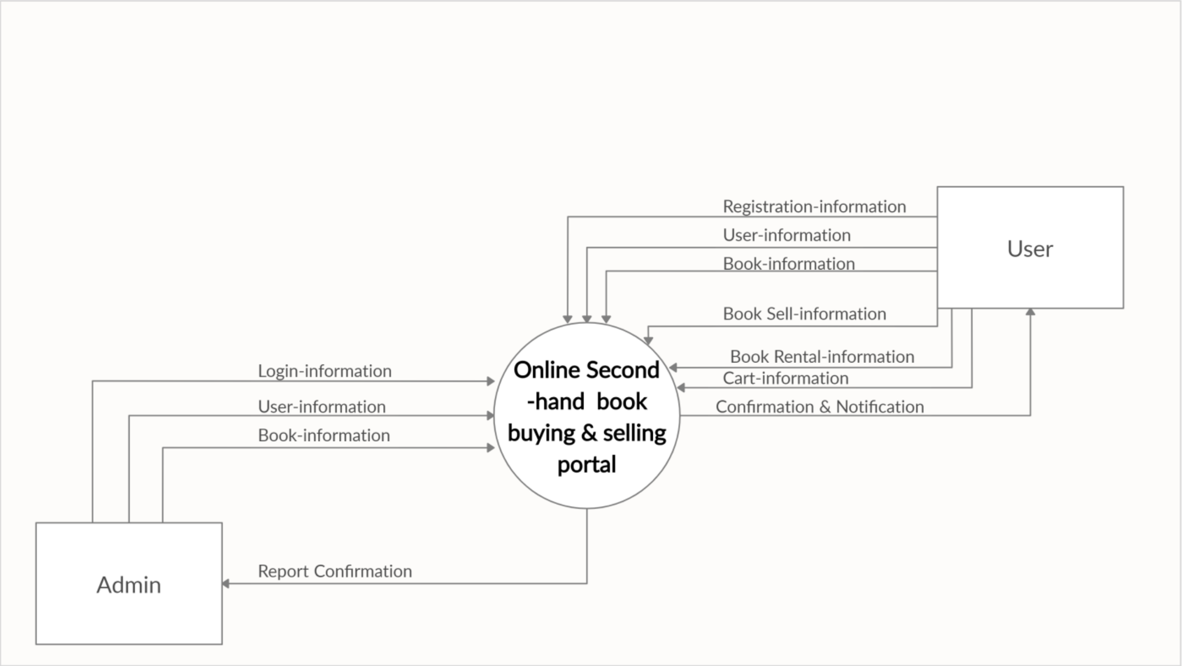


Fig 5.5.1 DFD level 0

LEVEL 1 DFD

CUSTOMER

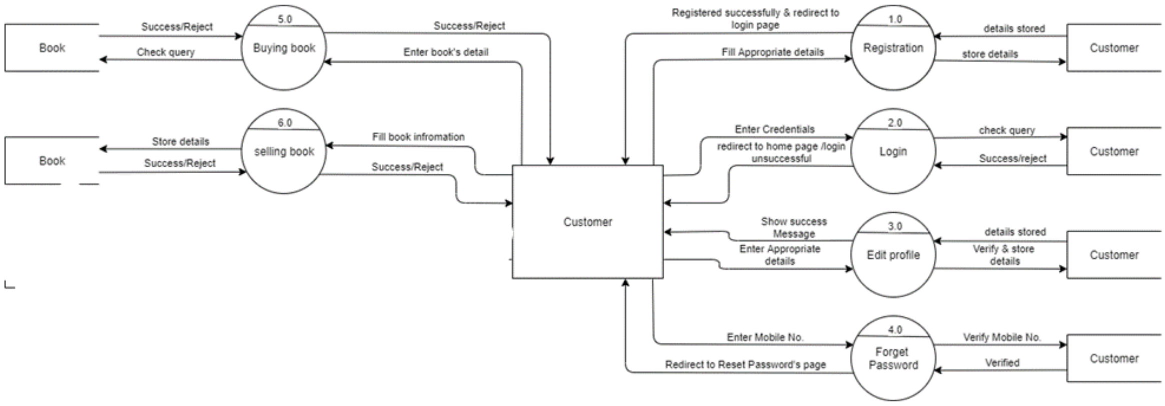


Fig 5.5.2 DFD level 1 customer

ADMIN

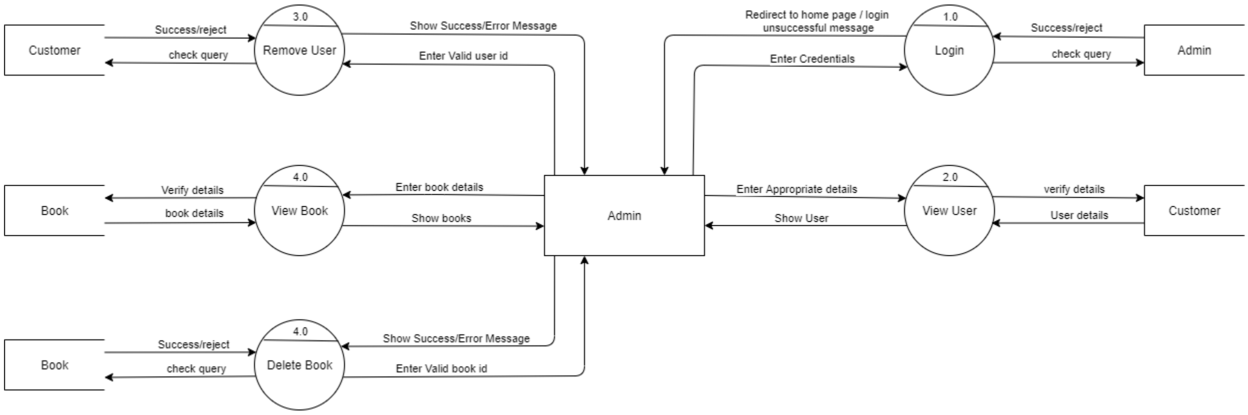


Fig 5.5.3 DFD level 1 admin

6. IMPLEMENTATION PLANING

6.1 IMPLEMENTATION PLATFORM

For the OSBS project, the implementation platform will primarily leverage HTML CSS JS TS AND REACT JS FOR THE MAIN LOGIC. Here's howthe implementation platform can be tailored to accommodate the unique requirements and capabilities of the selected technologies:

REACT.js:

1. **Component-Based Architecture**: React encourages a modular approach to building user interfaces. Developers can create encapsulated components that manage their own state, making it easier to reuse code, debug, and maintain applications.
2. **Declarative Syntax**: React uses a declarative programming model, allowing developers to describe the desired UI state, and React takes care of updating the DOM to match that state efficiently. This approach simplifies the development process and reduces the likelihood of bugs.
3. **Virtual DOM**: React utilizes a virtual DOM to optimize DOM manipulation. Instead of directly updating the browser's DOM for every change, React compares the virtual DOM with the actual DOM and only applies the necessary updates, resulting in improved performance.
4. **One-Way Data Binding**: React employs a unidirectional data flow, making it easier to understand how data changes affect the UI. Data flows downward from parent to child components, preventing unexpected side effects and making applications more predictable.
5. **Support for Server-Side Rendering**: React supports server-side rendering (SSR), enabling developers to render React components on the server and send the pre-rendered HTML to the client. This improves performance, SEO, and the initial load time of web applications.
6. **Rich Ecosystem and Community**: React has a vibrant ecosystem with a wide range of tools, libraries, and extensions, such as React Router for routing, Redux for state management, and Material-UI for pre-styled components. Additionally, React has a large and active community, providing support, tutorials, and resources for developers.

Restful services

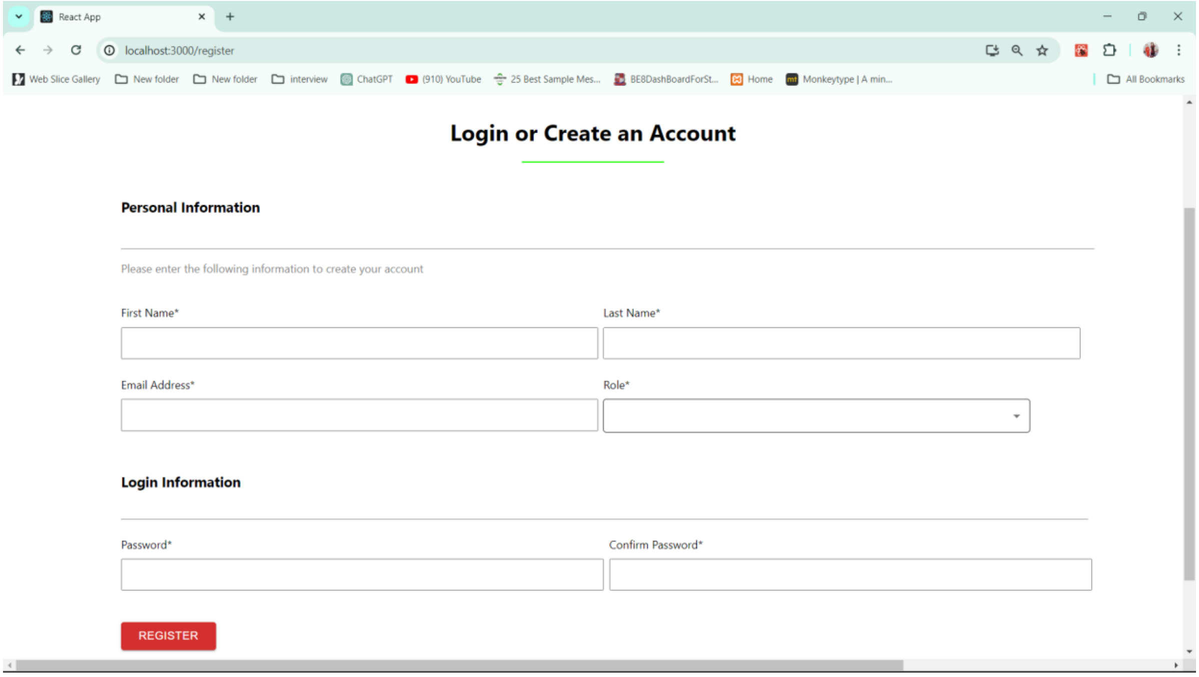
- Rest Stands for Representational state transfer. It is introduced in 2000 by Roy Fielding. In REST architecture, a REST Server simply provides access to resources and the REST client accesses and presents the resources. Here each resource is identified by URIs/ Global IDs.
- REST uses various representations to represent a resource like Text, JSON and XML. JSON is now the most popular format being used in Web Services.

HTTP Methods:

The following HTTP methods are most commonly used in a REST based architecture.

1. GET – Provides a read only access to a resource.
2. PUT – Used to create a new resource.
3. DELETE – Used to remove a resource.
4. POST – Used to update an existing resource or create a new resource.

6.2. IMPLIMENTATION SNAPSHOT



Login or Create an Account

Personal Information

Please enter the following information to create your account

First Name*

Last Name*

Email Address*

Role*

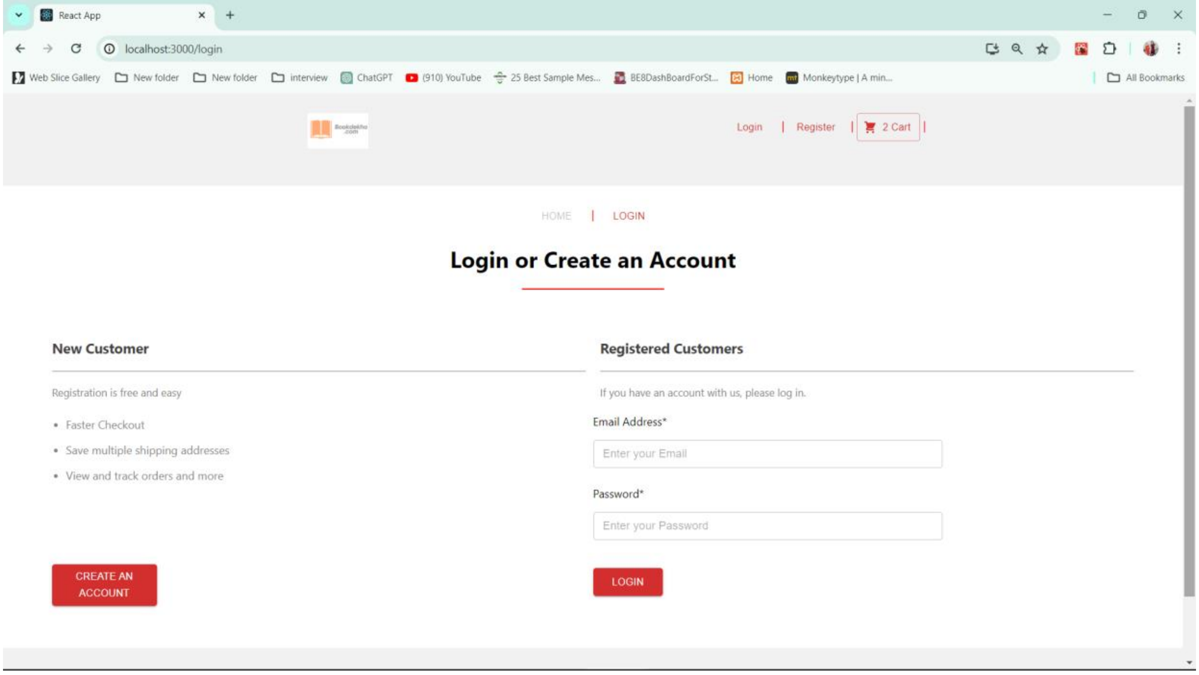
Login Information

Password*

Confirm Password*

REGISTER

Fig 6.6.1 Registration Page



Login or Create an Account

New Customer

Registration is free and easy

- Faster Checkout
- Save multiple shipping addresses
- View and track orders and more

CREATE AN ACCOUNT

Registered Customers

If you have an account with us, please log in.

Email Address*

Enter your Email

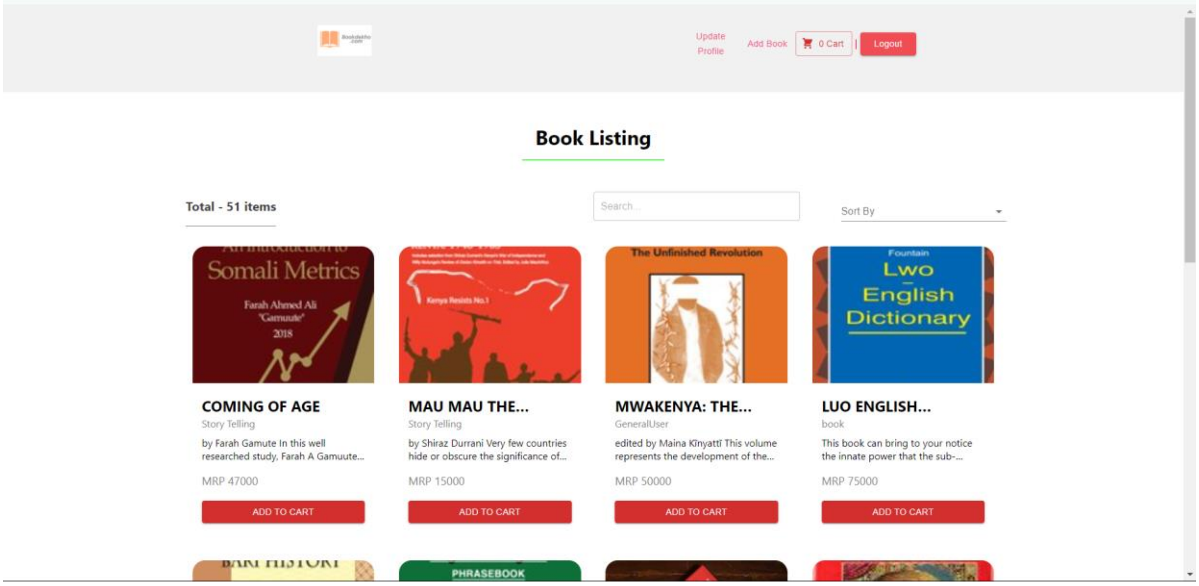
Password*

Enter your Password

LOGIN

Fig 6.6.2 Login Page

Home Page (user and admin)



Book Listing

Total - 51 items

COMING OF AGE
Story Telling
by Farah Gamute In this well researched study, Farah A Gamuute...
MRP 47000
ADD TO CART

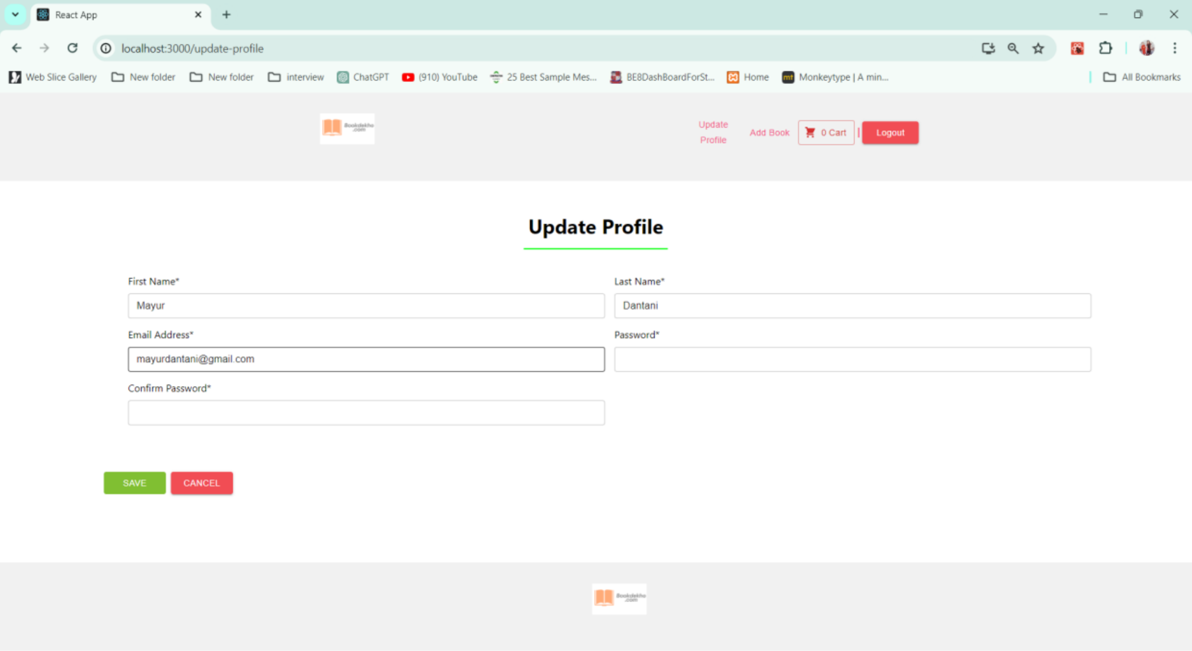
MAU MAU THE...
Story Telling
by Shiraz Durrani Very few countries hide or obscure the significance of...
MRP 15000
ADD TO CART

MWAKENYA: THE...
GeneralUser
edited by Maina Kĩnyattĩ This volume represents the development of the...
MRP 50000
ADD TO CART

LUO ENGLISH...
book
This book can bring to your notice the innate power that the sub-...
MRP 75000
ADD TO CART

Fig 6.6.3 Home Page (user and admin)

Update profile (user)



localhost:3000/update-profile

Update Profile

First Name* Mayur

Last Name* Dantani

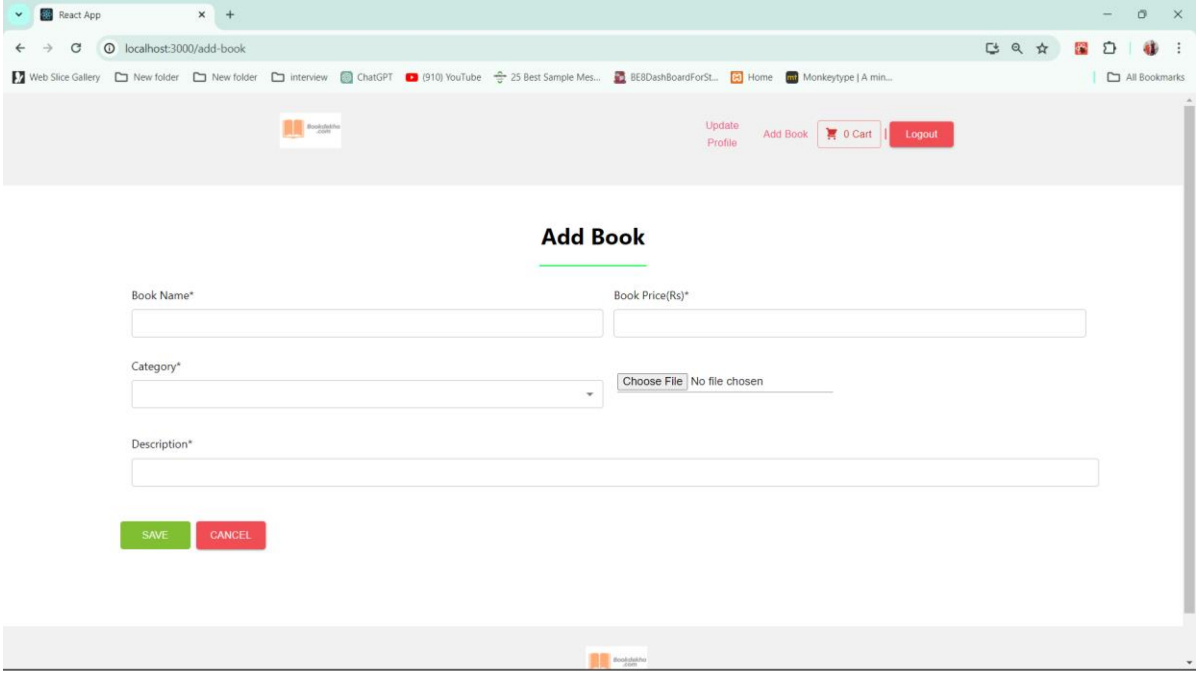
Email Address* mayurdantani@gmail.com

Password*

Confirm Password*

Fig 6.6.4 Update profile Page (user)

Add Book (admin & user)



localhost:3000/add-book

Add Book

Book Name*

Book Price(Rs)*

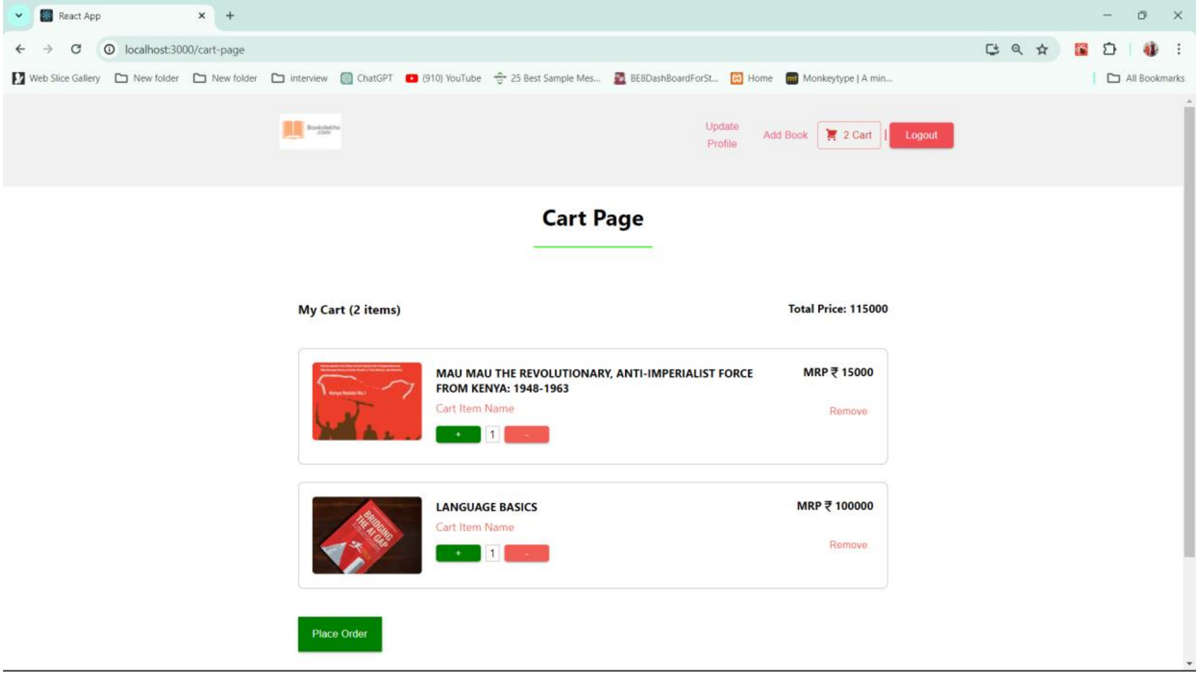
Category*

Choose File No file chosen

Description*

Fig 6.6.5 Add Book (admin & user)

My Cart



Cart Page

My Cart (2 items) Total Price: 115000

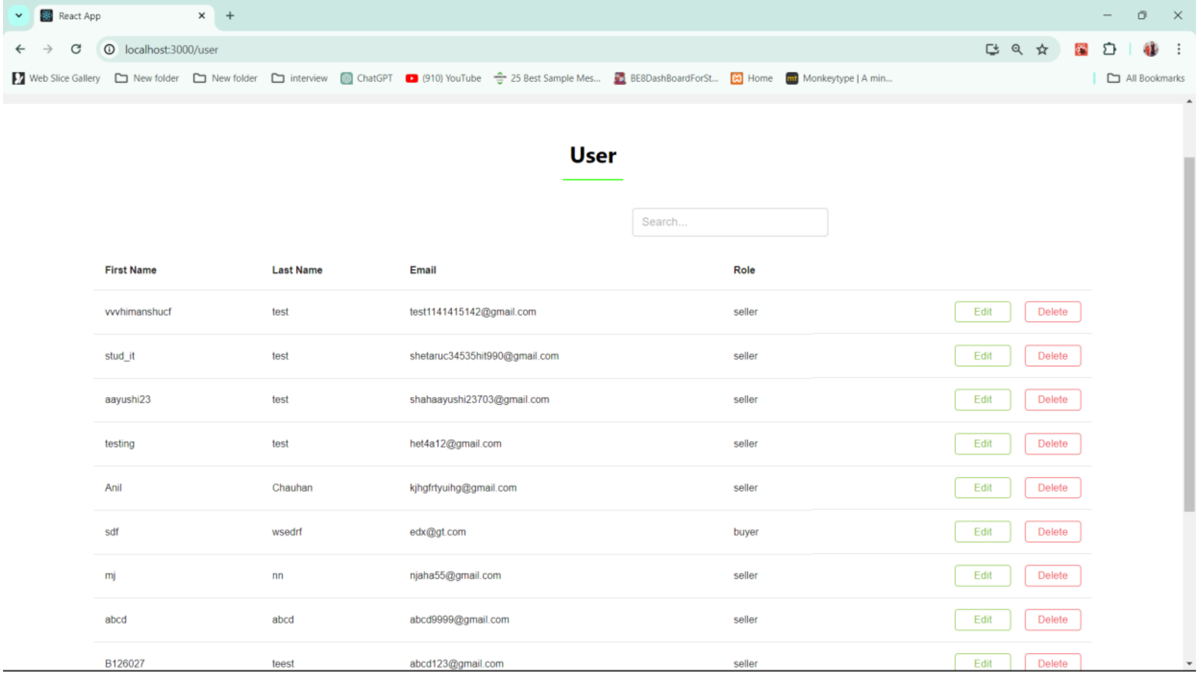
MAU MAU THE REVOLUTIONARY, ANTI-IMPERIALIST FORCE FROM KENYA: 1948-1963 — MRP ₹ 15000
Cart Item Name
+ 1 - Remove

LANGUAGE BASICS — MRP ₹ 100000
Cart Item Name
+ 1 - Remove

Place Order

Fig 6.6.6 cart page (user)

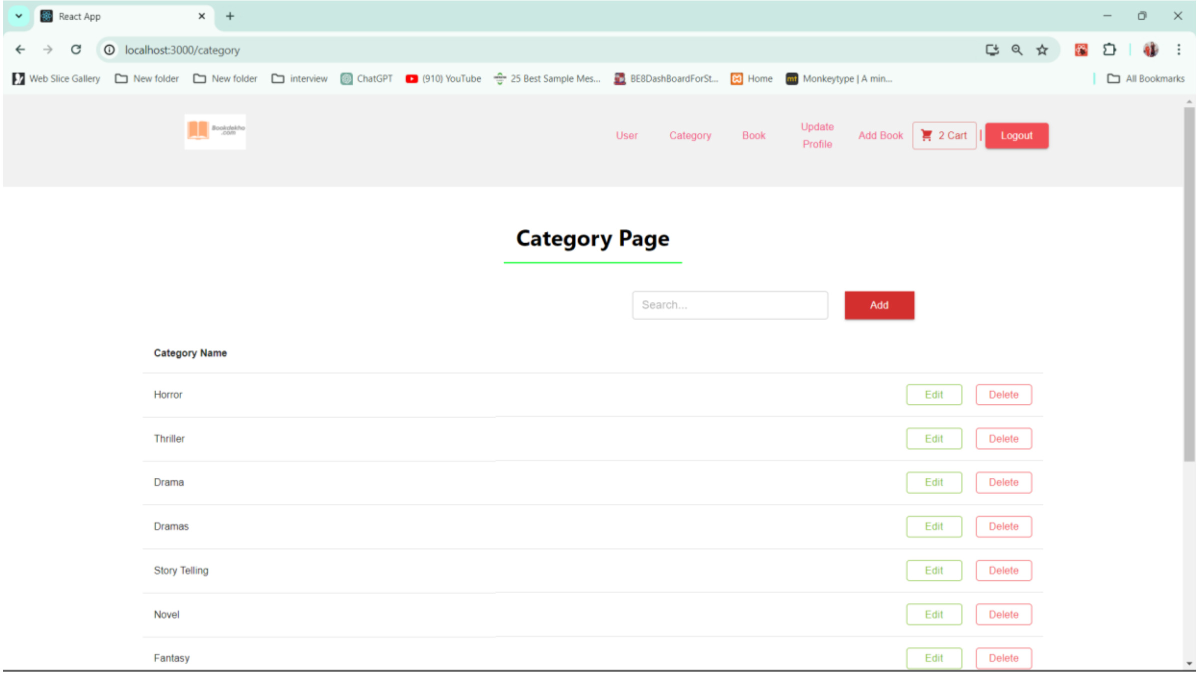
Admin pages: -



User

First Name	Last Name	Email	Role		
vvhimanshucf	test	test1141415142@gmail.com	seller	Edit	Delete
stud_it	test	shetaruc34535hit990@gmail.com	seller	Edit	Delete
aayushi23	test	shahaayushi23703@gmail.com	seller	Edit	Delete
testing	test	het4a12@gmail.com	seller	Edit	Delete
Anil	Chauhan	kjhgfrtyuihg@gmail.com	seller	Edit	Delete
sdf	wsedrf	edx@gt.com	buyer	Edit	Delete
mj	nn	njaha55@gmail.com	seller	Edit	Delete
abcd	abcd	abcd9999@gmail.com	seller	Edit	Delete
B126027	teest	abcd123@gmail.com	seller	Edit	Delete

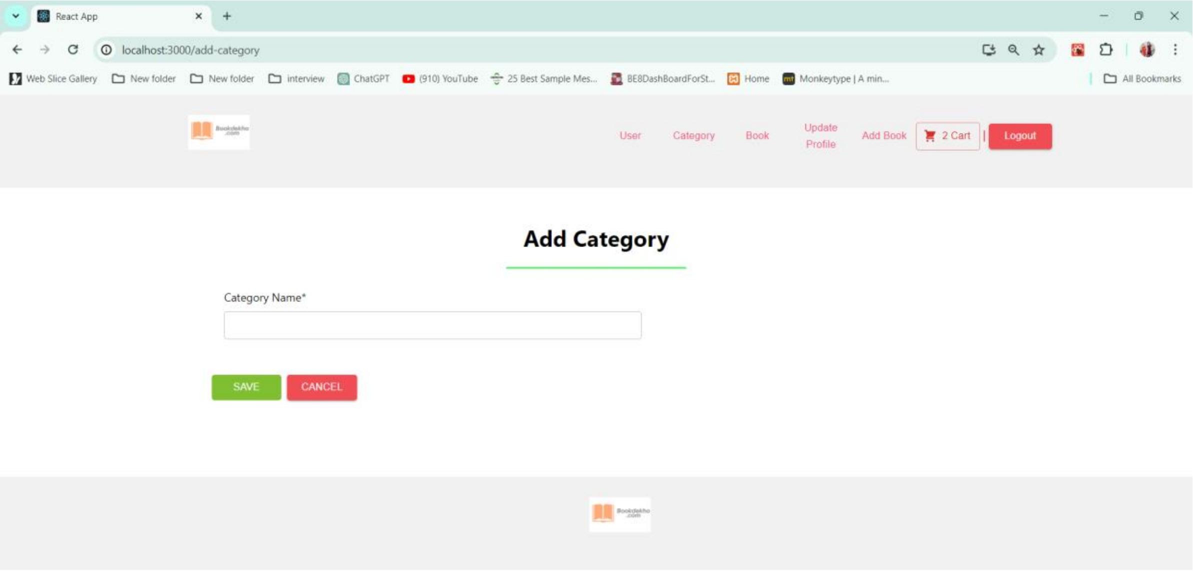
Fig 6.6.7 view user (admin)



Category Page

Category Name		
Horror	Edit	Delete
Thriller	Edit	Delete
Drama	Edit	Delete
Dramas	Edit	Delete
Story Telling	Edit	Delete
Novel	Edit	Delete
Fantasy	Edit	Delete

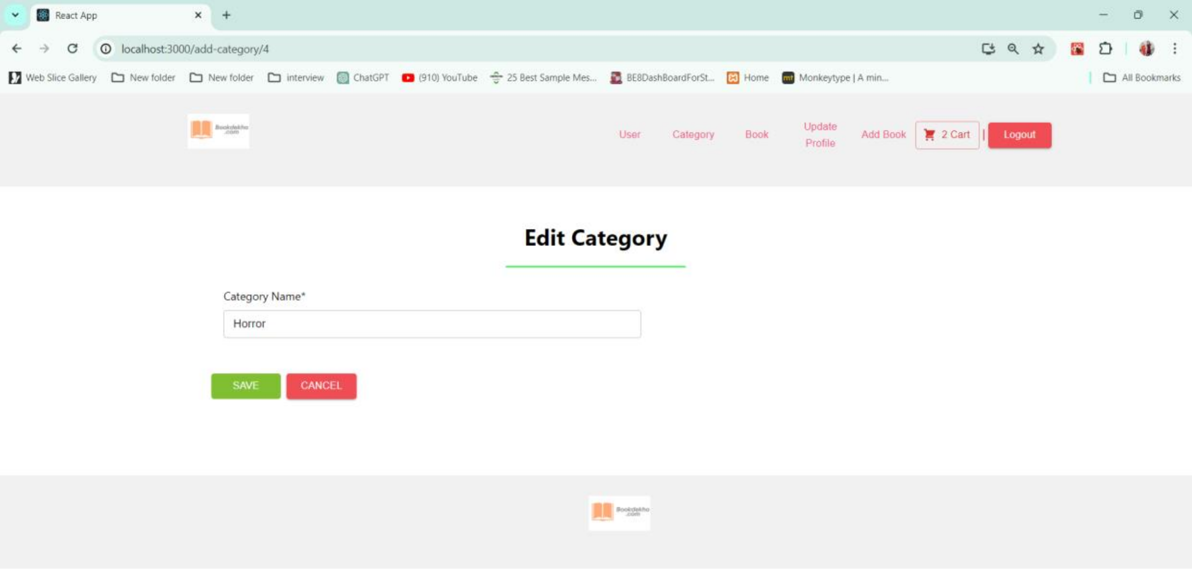
Fig 6.6.8 view category (admin)



Add Category

Category Name*

Fig 6.6.9 Add Category (admin)

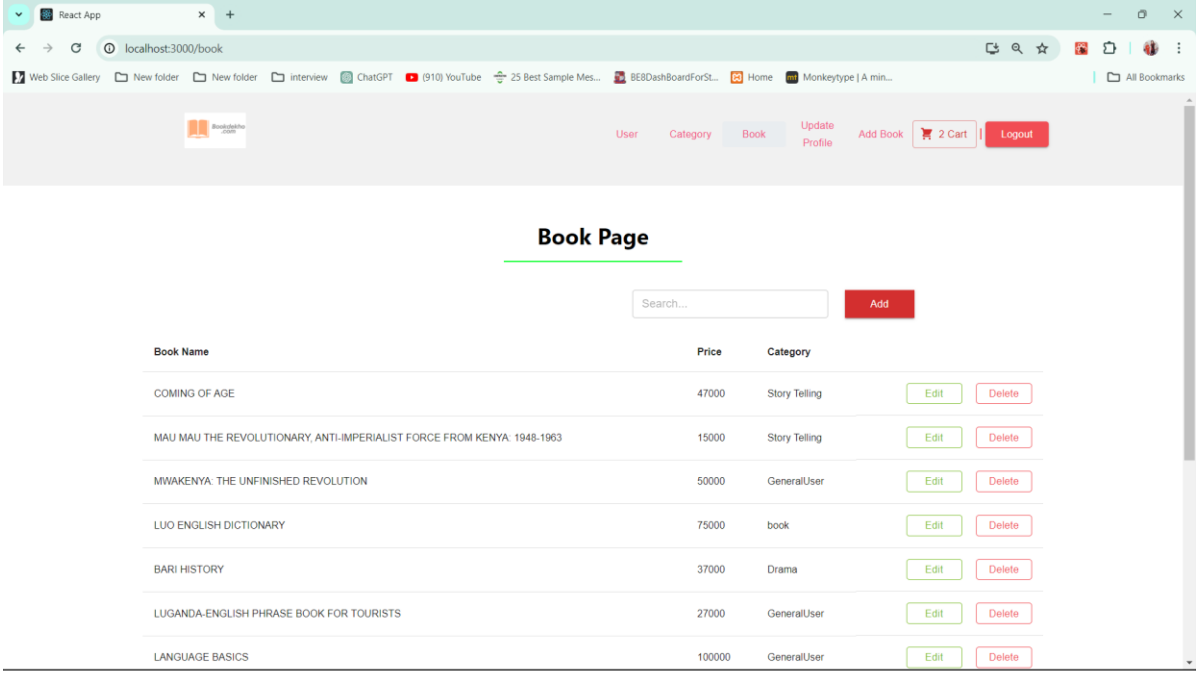


Edit Category

Category Name*

Horror

Fig 6.6.10 Edit Category (admin)



Book Page

Book Name	Price	Category		
COMING OF AGE	47000	Story Telling	Edit	Delete
MAU MAU THE REVOLUTIONARY, ANTI-IMPERIALIST FORCE FROM KENYA: 1948-1963	15000	Story Telling	Edit	Delete
MWAKENYA: THE UNFINISHED REVOLUTION	50000	GeneralUser	Edit	Delete
LUO ENGLISH DICTIONARY	75000	book	Edit	Delete
BARI HISTORY	37000	Drama	Edit	Delete
LUGANDA-ENGLISH PHRASE BOOK FOR TOURISTS	27000	GeneralUser	Edit	Delete
LANGUAGE BASICS	100000	GeneralUser	Edit	Delete

Fig 6.6.11 View Book (admin)

7. TESTING

Unit Testing: Unit Testing is a type of software testing where individual software components are tested. Unit Testing of the software product is carried out during the development of an application. An individual component may be either an individual function or a procedure. Unit Testing is typically performed by the developer. It is a testing method using which every independent module is tested to determine if there is any issue by the developer himself.

Integration Testing: Integration testing is the process of testing the interface between two software units or modules. Its focus is on determining the correctness of the interface. Integration testing aims to expose faults in the interaction between integrated units. Once all the modules have been unit tested, integration testing is performed.

Background / Preparation:

Understanding the process of system then we listed some specific major tasks.

Then applying test condition to checking the task completed with expected result or not.

Tools / Material Needed:

o Hardware: Computer, Paper, Pen

o Software: MS office, OSB^{2}S application

Procedure

Apply or create test suite for your system then check every possible or expected output that has been generated or not.

7.1. TESTING PLAN

The testing technique that is going to be used in the project is black box testing, that is expected inputs to the system are applied and only the outputs are checked.

7.2. TESTING PLAN

7.2.1. Test Cases

The testing technique that is going to be used in the project is black box testing, that is expected inputs to the system are applied and only the outputs are checked.

Test Case ID	**Req. ID**	**Test Steps**	**Expected Output**	**Actual Output**	**Remark**
T1	R1	Install OSBS Application	Install the OSBS application on the designated server following the provided installation instructions	As Expected,	Pass
T2	R2	API Connection	Connect with API	As Expected,	Pass
T3	R3	CUSTOMER Authentication Services	User can Login And Signup	As Expected,	Pass
T4	R4	Adding book	Store the user's uploaded book at api location	As Expected,	Pass
T5	R5	Buy Book or add to cart	User can view the book in cart page and successfully place the order.	As Expected,	Pass

Table 7.2.1. Test Cases

8. CONCLUSION AND DISCUSSION

8.1 OVERALL ANALYSIS OF INTERNSHIP

8.1.1 Effectiveness

The OSB^{2}S application has demonstrated remarkable effectiveness in facilitating seamless data synchronization between ServiceNow CMDB and third-party cloud or on-premises servers. By fulfilling the project objectives of providing robust synchronization capabilities and user-friendly features, OSB^{2}S enhances operational efficiency and productivity. Its automation of data management processes ensures data consistency and accuracy, contributing significantly to organizational workflows.

8.1.1 Timeliness

Adhering to project timelines is crucial for maintaining project viability. Our project plan, divided into four distinct sections focusing on N-data sources, N-label dimensions, Synchronization Implementation, and Threshold Job, was executed concurrently over a two-month period during our internship at Radix web. Successfully completing the project within the allotted time frame underscores its timeliness and viability.

8.1.1 Task Allocation

Effective task allocation is essential for project success. By assigning designated team members to specific tasks, we ensured proper tracking of deliverables and milestone achievements. My contributions to the project included working on Modularization of ServiceNow Spoke, implementing the Cancelled Scheduled Job functionality, and refining the incident functionality. Additionally, I played a role in identifying behaviors for sync selected server to cloud, enhancing the application's flexibility and usability.

8.1.1 Quality

The developed OSB2S application maintains a high standard of quality, meeting all specifiedrequirements and functionalities. Rigorous testing procedures were employed to identify and address any defects or issues, resulting in a reliable and stable application. The adherence to best practices and industry standards during development significantly contributed to the overallquality and success of the solution

8.1.1 Acceptance

The OSB2S project has received positive acceptance from stakeholders, including users, management, and other relevant parties. Stakeholder involvement throughout the development process ensured that the application aligned with their expectations and requirements. User acceptance testing (UAT) further validated the functionality and usability of the application, resulting in favorable feedback and overall satisfaction.

8.2 DATES OF CONTINUOUS EVALUATION (CE-I AND CE-II)

- Continuous Evaluation – I was done on 3 February 2024 by internal guide. At the first presentation we had a conversation about what is core web fundamentals and lattest industry tech trends and how it works and what type of the projects can be built with it.
- Continuous Evaluation – II was done on 2 March 2024 by internal guide. In this review, I have presented my internship project overview about what it does and the functionality that will be built with it.
- Continuous Evaluation-III was done on 6 April 2024 by internal guide. In this review I have shown various diagrams of my internship project that showcase the application flow.

8.3 PROBLEM ANCOUNTERED AND POSSIBLE SOLUTIONS

The problems encountered during development of this project and measures taken to resolve them are as follows:

- One of the challenges faced during the project was ensuring seamless connectivity between API and our app
- To address this challenge like our API call is going to right place or not data is being store or not we address this issue using the postman application it gives beautiful UI to send different types of API call on our API so that we can test it.

8.4 INTERSHIP SUMMARY

During my internship at Radixweb, I had the opportunity to work on a project called "Book Store," utilizing technologies such as HTML, CSS, JQUERY, TYPESCRIPT and React.js. Throughout the internship, I actively contributed to the development of a modern web application aimed at managing and selling books online. My responsibilities included structuring content with HTML, styling the user interface using CSS, and implementing interactive components with React.js.

Throughout the internship, I immersed myself in the essentials of web development, gaining valuable insights into front-end technologies and best practices. Gaining knowledge with a team of experienced developers, I leveraged my skills to contribute effectively to the project's success.

Overall, my internship at Radixweb is a valuable learning experience, allowing me to apply theoretical knowledge to real-world projects, work in a collaborative environment, and further develop my technical skills in web development. I am grateful for the opportunity and look forward to applying my learnings to future endeavors.

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» https://react.dev/