RentALL - One place to rent all

DSN4096-CAPSTONE PROJECT PHASE-II

Phase – II Report

Submitted by

20BCE10874 Yash Yadav

20BCE10929 Pulkit Grover

20BCE10964 Nikhil Sharma

20BCE11077 Hare Krishana Mishra

in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

in

COMPUTER SCIENCE AND ENGINEERING

SCHOOL OF COMPUTING SCIENCE AND ENGINEERING

VIT BHOPAL UNIVERSITY

SEHORE, MADHYA PRADESH - 466114

MAY 2024

VIT BHOPAL UNIVERSITY, KOTHRIKALAN, SEHORE MADHYA PRADESH – 466114

BONAFIDE CERTIFICATE

Certified that this project report titled **"RentALL - ONE PLACE TO RENT ALL"** is the bonafide work of " **Yash Yadav (20BCE10874), Pulkit Grover (20BCE10929), Nikhil Sharma (20BCE10964), Hare Krishana Mishra (20BCE11077)"** who carried out the project work (DSN4096- Capstone Project phase-II) under my supervision. Certified further that to the best of my knowledge the work reported at this time does not form part of any other project/research work based on which a degree or award was conferred on an earlier occasion on this or any other candidate.

PROGRAM CHAIR
Dr J. Manikandan,
Senior Assistant Professor (Gr-2),
School of Computing Science and Engineering,
VIT BHOPAL UNIVERSITY.

PROJECT GUIDE
Dr. Shahab Saquib Sohail,
Assistant Professor Grade 2,
SCSE
VIT BHOPAL UNIVERSITY.

The DSN4096-Capstone Project phase-II Viva-Voce Examination is held on _____

ACKNOWLEDGEMENT

First and foremost, we would like to thank the Lord Almighty for His presence and immense blessings throughout the project work.

We would like to thank my internal guide Dr. Shahab Saquib Sohail, for continually guiding and actively participating in our project, and giving valuable suggestions to complete the project works.

We wish to express our heartfelt gratitude to Dr. J. Manikandan, Head of the Department, School of Computing Science and Engineering for much of his valuable support and encouragement in carrying out this work.

We wish to express our heartfelt gratitude to Dr. S. Poonkuntran, Professor and Dean, School of Computing Science and Engineering for much of his valuable support and encouragement in carrying out this work.

We would like to thank all the technical and teaching staff of the School of Computing Science and Engineering, who extended directly or indirectly all support.

Last, but not least, We are deeply indebted to our parents who have been the greatest support while we worked day and night for the project to make it a success.

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE NO.
1.0	Fat Llama	15
2.0	Rentit4me	16
3.0	Architecture Design	28
4.0	Basic Architecture	29
5.0	Screenshot of Home Page	31
6.0	Screenshot of Cart	32
7.0	Screenshot of items listed	39

ABSTRACT

RentALL is a complete online platform created to make renting and leasing easy and comfortable for customers all over India. RentALL strives to meet the various demands of customers looking for flexible and reasonably priced solutions by offering a wide selection of products for long-term leasing or short-term rental periods. Customers may browse through a large range of products across categories like electronics, appliances, furniture, cars, and more thanks to the platform's user-friendly layout. With the use of simple search and filtering options, users may quickly locate the products that match their unique needs. RentALL simplifies the renting and leasing procedure in order to put the convenience and happiness of its customers first.

Customers can easily examine product information, verify availability, and select rental or lease terms that suit their demands and financial constraints. The user experience is further improved by transparent pricing and various payment choices, which guarantee affordability and clarity at every turn.

Furthermore, RentALL builds community trust and dependability by facilitating smooth transactions between providers and renters. Strong security protocols and thorough verification processes protect user data and transactions, giving both parties involved peace of mind.

Apart from its user-focused methodology, RentALL is dedicated to advocating for sustainability and conscientious consumption. The platform supports the circular

economy's tenants by promoting product sharing and reuse, which helps to minimize waste and its negative effects on the environment.

All things considered, RentALL's creative renting and leasing options transform how Indian consumers obtain and use a variety of goods. RentALL is the go-to place in the Indian market for all rental and leasing needs because of its dedication to sustainability, affordability, and ease of use.

TABLE OF CONTENTS

CHAPTER NO.	TITLE	PAGE NO.
0	List of Figures Abstract	3 4 - 5
1	**CHAPTER-1:** **PROJECT DESCRIPTION AND OUTLINE** 1.1 Introduction 1.2 Motivation for the work 1.3 Problem Statement 1.4 Objective of the work 1.5 Summary	9 9 10 11 11-12 13
2	**CHAPTER-2: RELATED WORK INVESTIGATION** 2.1 Existing Approaches/Methods 2.2 Pros and cons of the stated Approaches/Methods	14 14-15 16-18

3	**CHAPTER-3: REQUIREMENT ARTIFACTS**	19
	3.1 Introduction	19
	3.2 Hardware and Software requirements	19-21
	3.3 Specific Project requirements	21-23
	3.3.1 Data requirement	21
	3.3.2 Functions requirement	22
	3.3.3 Performance requirement	22
	3.3.4 Security Requirements	22
	3.3.5 Look and Feel Requirements	22
	3.4 Summary	23
4	**CHAPTER-4: DESIGN METHODOLOGY AND ITS NOVELTY**	24
	4.1 Methodology and goal	24
	4.2 Functional modules design and analysis	25-27
	4.3 Software Architectural designs	
	4.4 User Interface designs	27-30
	Summary	30-32
		32
5	**CHAPTER-5: TECHNICAL IMPLEMENTATION & ANALYSIS**	33
	5.1 Outline	33-34
	5.2 Technical coding and code solutions	35-37
	5.3 Prototype submission	38
	5.4 Summary	39-40

6	**CHAPTER-6: PROJECT OUTCOME AND APPLICABILITY**	41
	6.1 key implementations outline of the System	41-42
	6.2 Significant project outcomes	43
	6.3 Project applicability on Real-world applications	44-45
	6.4 Inference	46
7	**CHAPTER-7: CONCLUSIONS AND RECOMMENDATION**	47
	7.1 Outline	47-48
	7.2 Limitation/Constraints of the System	49
	7.3 Future Enhancements	50
	7.4 Inference	51
	APPENDIX A – Screen Shots	52-55
	APPENDIX B – Coding	56-77
	REFERENCES	78

CHAPTER 1
PROJECT DESCRIPTION AND OUTLINE

1.1 INTRODUCTION

In the dynamic landscape of modern living, the demand for flexible and convenient solutions has given rise to a digital era where access often triumphs over ownership. Recognizing this shift, we present **RentALL**—a versatile web platform designed to cater to the diverse needs of users seeking temporary access to an array of products ranging from cameras and books to watches and furniture.

In a world that values experiences over possessions, our application aims to empower users with a seamless and user-friendly interface, allowing them to effortlessly browse, select, and rent a myriad of items for various purposes.

Developed using a robust combination of HTML, CSS, JavaScript, React JS, and Database through WordPress, our application not only embraces the latest in web technologies but also prioritizes the creation of an engaging and responsive environment.

The Online Rental Application is a direct response to the evolving consumer mindset, where the emphasis is placed on access rather than ownership. Whether for a special event, a temporary project, or the desire to try out different products before making a purchase decision, our platform provides a one-stop solution for users seeking temporary access to a diverse range of items.

1.2 MOTIVATION FOR WORK

The motivation behind developing an online product renting system stemmed from the recognition of several key societal and economic trends reflecting the evolving landscape of consumer behavior and the increasing demand for flexible and sustainable consumption models. Firstly, there's a growing emphasis on sustainability and responsible consumption, with consumers increasingly seeking alternatives to traditional ownership models that contribute to overconsumption and waste.

Secondly, there's a rising demand for affordable and flexible access to a wide range of products, particularly among urban dwellers and younger generations who prioritize experiences over ownership and seek temporary access to a variety of products for specific needs or occasions.

Additionally, the cost-effectiveness of renting products online presents an attractive alternative to purchasing items outright, particularly for those needed for short periods or occasional use. This approach not only saves money for users but also contributes to environmental sustainability by reducing waste and resource consumption, aligning with the principles of sustainable living and conservation.

Lastly, the proliferation of digital technology has facilitated the emergence of sharing economies, where peer-to-peer transactions and collaborative consumption thrive. By harnessing these trends, the development of an online product renting system aims to address these evolving consumer needs while promoting a more sustainable and resource-efficient approach to consumption.

1.3 PROBLEM STATEMENT

The old ownership patterns in today's consumer culture are under threat from changing attitudes regarding access-based consumption. But even with the increasing need for adaptable and environmentally friendly rental options, there is still a noticeable lack of extensive web portals that make it easy to rent a wide variety of goods. Current rental services frequently have poor user interfaces, incomplete product catalogs, and opaque pricing schemes, which irritates users and makes them reluctant to interact with rental possibilities. Furthermore, problems with product availability, quality, and dependability make it harder for online rental services to become widely used. Consequently, there is a pressing need for an online product rental system that addresses these shortcomings, providing users with a convenient, cost-effective, and reliable platform for accessing a wide variety of products for short-term use. This system must prioritize user experience, transparency, and sustainability while offering a comprehensive catalog, secure transactions, and efficient logistics to meet the diverse needs of today's consumers.

1.4 OBJECTIVE OF THE WORK

The Online Rental Application aims to redefine product access by prioritizing flexible and sustainable temporary usage over traditional ownership. This system's development is to cater to the evolving demands and inclinations of consumers in the contemporary dynamic marketplace, while simultaneously promoting a more sustainable and resource-efficient economy. A number of specific objectives, each with the purpose of accomplishing

important results and adding value for users, businesses, and society at large, complement this overarching goal.

1. **Improve Access and Convenience:** By removing obstacles related to conventional ownership models, the system seeks to give people easy access to a large range of things for temporary usage.
2. **Promote Sustainability:** One of the system's main goals is to encourage a move toward access-based consumption models in order to enhance environmental sustainability.
3. **Ensure Transparency and Trust:** The online product rental system's performance depends critically on transparency and trust. As a result, the system seeks to give users dependable customer ratings, thorough product information, and transparent and understandable price structures.
4. **Optimize Resource consumption:** Extending product life and usage to maximize resource consumption is another important goal of the system. The system relieves the burden on limited resources, minimizes overconsumption, and lowers the demand for new manufacturing by enabling the sharing and reuse of things among different users.
5. **Ensure Security and Reliability:** In every online transactional platform, security and dependability are critical factors. As a result, the system attempts to put strong security measures in place to safeguard user information and financial activities.
6. **Promote business Growth and Innovation:** The system encourages innovation in product offers, rental models, and customer experiences while supporting the expansion of rental enterprises by giving users a platform to exhibit their goods and reach a wider audience.

In summary, the objective of developing the online product rental system is to provide users with convenient access to a diverse range of products while promoting sustainability, transparency, and trust. By optimizing resource utilization, ensuring security and reliability, and facilitating business growth and innovation, the system aims to deliver tangible benefits to users, businesses, and society as a whole.

1.5 SUMMARY

The online product rental system is a transformative approach to consumption, answering today's consumers' changing demands and tastes while encouraging sustainability and efficiency. With the primary goal of improving access and convenience, the system offers customers a unified platform to browse, choose, and rent a wide range of products for short-term use. By encouraging access-based consumption models, the system helps to ensure environmental sustainability by reducing waste and maximizing resource usage. Transparency and trust are important values built into the system, assuring transparent price structures, extensive product information, and trustworthy consumer feedback. Furthermore, the system prioritizes security and dependability, incorporating strong safeguards to secure user data and maintain the quality of rented products. In essence, the online product rental system embodies a paradigm shift towards more sustainable, efficient, and user-centric consumption practices, delivering tangible benefits to users, businesses, and society as a whole.

CHAPTER 2
RELATED WORK INVESTIGATION

2.1 EXISTING PROJECTS / WORKS

In the landscape of online rental platforms, several existing services have set notable benchmarks, contributing to the evolution of the sharing economy. Platforms such as 'Fat Llama', 'RentIt4Me', and 'Rentomojo' have emerged as prominent players in the space, each offering unique features and addressing specific user needs.

'Fat Llama' distinguishes itself by facilitating the rental of a wide array of items, from cameras to electronics, encouraging a collaborative approach to shared ownership. 'RentIt4Me' focuses on providing solutions for event-centric rentals, offering a specialized platform for renting party and event-related items.

On the other hand, 'Rentomojo' specializes in furniture and appliance rentals, targeting users seeking temporary access to household essentials.

These platforms collectively underscore the growing demand for convenient, on-demand access to a variety of products, contributing significantly to the reshaping of traditional ownership models. As we embark on developing our Online Rental Application, an examination of these existing platforms provides valuable insights into user expectations, business models, and potential areas for innovation and improvement.

A. <u>Fat Llama</u> -

Fat Llama is a leading online rental platform championing the sharing economy, offering a diverse marketplace for temporary access to a wide range of items, from

electronics to party equipment. In essence, Fat Llama provides a collaborative space for users to share possessions but requires consideration of these factors for an optimal experience.

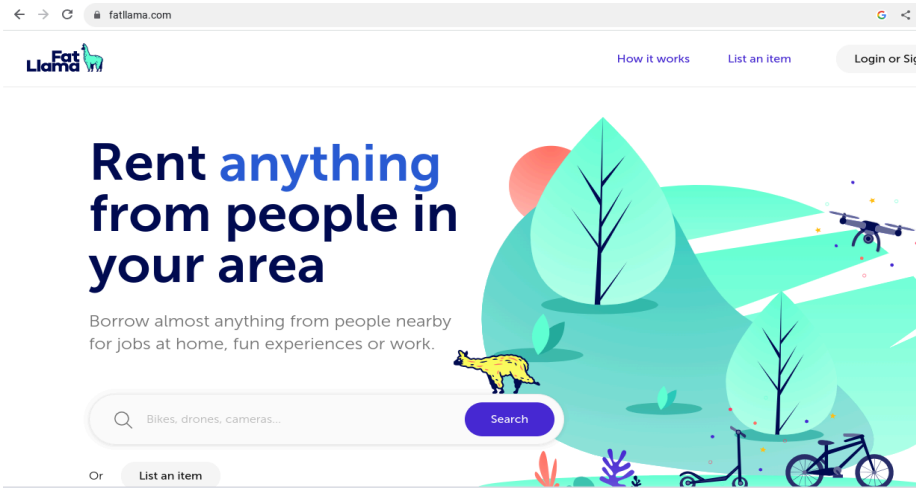


Fig 1.0

B. Rentit4me -

RentIt4Me is a specialized platform offering convenient event-centric rentals, presenting a tailored solution for users planning parties and gatherings.While its focused approach provides clear benefits for event planners, potential users should consider its niche focus, geographic constraints, and potential seasonal demand fluctuations when engaging with the platform.

Fig 2.0

2.2 PROS AND CONS OF THE STATED PROJECTS / WORKS

A. <u>Fat Llama</u>

Pros:

- **Diverse Catalog:** Fat Llama boasts an extensive catalog, spanning various categories, ensuring users can find and rent a wide array of items for different purposes.
- **Community-Centric:** The platform fosters a sense of community, encouraging users to share their possessions and contribute to a more sustainable model of consumption.
- **Flexible Rental Terms:** Fat Llama allows users to set their rental terms, providing flexibility in pricing, duration, and pickup/delivery arrangements.

- **User Reviews:** The inclusion of user reviews and ratings helps establish trust within the community, allowing individuals to make informed decisions based on the experiences of others.

Cons:

- **Regional Availability:** Availability of items for rent may vary depending on the user's location, limiting the platform's reach in certain regions.
- **Transaction Fees:** While Fat Llama provides a platform for transactions, it does charge fees, which may impact the overall cost-effectiveness for both renters and those listing their items.
- **Security Concerns:** As with any peer-to-peer marketplace, there may be inherent security concerns related to the condition of rented items and potential disputes between renters and owners.
- **Limited to Physical Items:** Fat Llama primarily focuses on physical goods, and as such, services or experiences are not part of its offerings, limiting the scope of the platform.

B. <u>RentIt4me</u>

Pros:

- **Event-Focused Catalog:** RentIt4Me caters specifically to users planning events, providing a tailored catalog of party-related items, including decorations, equipment, and accessories.
- **Convenient Solutions:** The platform simplifies the process of event planning by

offering convenient and temporary access to items that may only be needed for a specific occasion.

- **User-Friendly Interface:** RentIt4Me features an intuitive and user-friendly interface, ensuring a straightforward experience for users searching for event-specific rentals.
- **Specialized Community:** By focusing on event rentals, RentIt4Me fosters a specialized community, allowing users to connect over shared interests and needs related to party planning.

Cons:

- **Niche Focus:** The platform's specialization in event rentals may limit its appeal to users seeking a broader range of items for different purposes.
- **Limited Scope:** RentIt4Me may not cater to users looking for items beyond the realm of event planning, potentially excluding those seeking more diverse rental options.
- **Geographic Constraints:** Availability of items for rent and the platform's services may be limited to specific regions, impacting its accessibility for users in other areas.
- **Potential for Seasonal Demand:** The platform's emphasis on event rentals may lead to fluctuations in demand, with certain items experiencing higher demand during specific seasons or occasions.

It is important to assess these pros and cons based on the specific context of the Online product renting and consider the needs and preferences of the users or customers when deciding on the approach/method for the online product rental system.

CHAPTER-3
REQUIREMENT ARTIFACTS

3.1 INTRODUCTION

The requirements for RentALL - online product rental system are essential in ensuring that the website is functional, secure, and user-friendly. These requirements are necessary to provide customers with a convenient and reliable way to rent and lease products online, and to streamline the process of product renting all over the nation. The requirements for this online product rental system can be divided into three categories: functional, non-functional, and usability requirements. Functional requirements define the features and functionality of the website, such as the ability to browse menus, place orders, and pay online. Non-functional requirements define the performance, security, and scalability of the website, while usability requirements define the ease of use and user experience of the website.

Meeting these requirements is crucial in creating a successful online platform for RentALL. By doing so, RentALL can improve the customer experience, increase efficiency, and expand their reach to a wider audience.

3.2 HARDWARE AND SOFTWARE REQUIREMENTS

The hardware requirements for RentALL's website are:

- Server: The website will require a server to host the website and manage incoming requests from users.

- Storage: The website will require a database to store user information, order history, and menu data.
- Network: The website will require a stable and reliable network connection to ensure quick response times and prevent downtime.
- Load balancer: If the website experiences high traffic, a load balancer may be necessary to distribute incoming requests across multiple servers.

These hardware requirements are essential in ensuring the website's performance, stability, and security. By meeting these requirements, RentALL can provide a seamless and secure online product renting experience for its customers. Additionally, scalability is an important consideration for hardware requirements. As the website grows and experiences more traffic, additional servers and hardware may be necessary to maintain performance and prevent downtime.

The software requirements for RentALL's online product rental system are:

- ReactJS
- Material UI
- FirestoreDB
- VScode
- Figma
- Programming languages like: JavaScript, CSS, HTML.

These software requirements are essential in building a functional and secure online rental platform for RentALL. By meeting these requirements, the website can provide a seamless and secure experience for its customers, while also allowing for easy management and maintenance of the website's data and functionality.

3.3 SPECIFIC PROJECT REQUIREMENTS

3.3.1 Data Requirements:

- The website must store customer profiles, including name, phone no., email, and delivery address.
- The website must store a list of menu items, along with their descriptions and prices.
- The website must store order history for each customer, including order details and payment information.

3.3.2 Functionality Requirements:

- The website must allow customers to create an account and log in to view their order history and payment information.
- The website must allow customers to browse the menu and add items to their cart.
- The website must allow customers to check out and pay for their orders.
- The website must provide an order confirmation page and email receipt.

3.3.3 Performance Requirements:

- The website must be responsive and load quickly on both desktop and mobile devices.
- The website must be able to handle multiple concurrent users without slowing down.
- The website must be able to handle a high volume of orders during peak hours.

3.3.4 Security Requirements:

- The website must use secure authentication protocols to prevent unauthorized access to customer accounts.
- The website must use measures to prevent SQL injection attacks and other common security threats.

3.3.5 Looks and Feel Requirements:

- The website must have a clean and modern design that is visually appealing.
- The website must be easy to navigate and use, with clear labels and instructions.
- The website must be customizable to reflect RentALL's brand and identity.

These requirements are important to ensure that RentALL's website is functional, reliable, and user-friendly, while also maintaining security and performance standards. By meeting these requirements, the website can provide a positive experience for customers and help to build a strong brand reputation for RentALL.

SUMMARY

By creating and adhering to the mentioned requirement artifacts, we ensure that our website “RentALL” is designed and implemented to meet the business and user needs, while also delivering high performance, security, and usability. By addressing these requirements effectively, the development team can create a robust and user-friendly online product rental platform that meets the needs and expectations of both users and stakeholders.

CHAPTER-4
DESIGN METHODOLOGY AND ITS NOVELTY

4.1 METHODOLOGY AND GOAL

The design methodology used for the RentALL project is User-Centered Design (UCD). UCD is a design approach that puts the needs and preferences of users at the centre of the design process, with the goal of creating products and services that are intuitive, efficient, and enjoyable to use.

The goal of using UCD for this project is to create a website that meets the needs of its target audience, which mostly includes people of age group 17 to 28 years who want a convenient and easy-to-use platform to rent and lease items. By following the UCD process, we were able to gather user feedback and insights throughout the design process and incorporate them into the final product.

The UCD process involves several key steps, including user research, persona development, prototyping, and usability testing. Through user research, we gather information about the target audience's needs, preferences, and pain points related to product renting.Overall, the goal of using UCD is to create a website that meets the needs of its users and provides a positive user experience, which will help to ensure the success of the project.

The technical methodology used in the RentALL project is an agile software development approach. This methodology emphasizes on iterative development and continuous improvement, and involves frequent feedback and collaboration between the development team and target audience.

This methodology was chosen for the RentALL project because it allows for a flexible and adaptive approach to software development, which is particularly important for a project of this scope and complexity. It also promotes frequent communication and collaboration

between the development team and audience, which helps to ensure that the final product meets the needs and requirements of all parties involved.

4.2 FUNCTIONAL MODULES DESIGN AND ANALYSIS

Functional Modules for this project are:

- Registration Module:

  This module allows new users to register with the website by providing their basic information like personal email address or phone number. The module includes a form for users to fill in their information, and a verification process to ensure that the user's information is accurate.

- Cart & About us Module:

  The Cart module allows users to add items to their cart and place orders. It includes a shopping cart interface, checkout process, and delivery information. The About Us module provides insights about the food venture and its developers.

- Login Page Module:

  This module allows registered users to log in to the website and access their account information, order history, and other features. The login page includes a form for users to enter their email and password, and authentication processes to ensure that only registered users can access their accounts.

- Home Page Module:

  This module serves as the main interface for the website, providing users with a view of all available items for rent, promotional offers, and other relevant information. It includes a search bar, featured items section, and filter options.

- Navbar & Side Panel Module:

  This module provides easy navigation for users to move between different pages and sections of the website. It includes a navigation bar and side panel with links to different pages and features.

- Contact Page & My Orders Module:

  The Contact page module allows users to contact customer service with any queries or complaints. The My Orders module provides users with access to their order history, reviewing their orders and the ability to cancel orders.

- Admin Module (Optional):

  This module provides administrators with access to the backend of the website, where they can manage orders, update inventory, and monitor website activity. It includes a dashboard with statistics, order management tools, and user management functionality.

Design:

The website design for RentALL website is modern and user-friendly, with a clean and simple layout. The color scheme is primarily black and white, with highlights of sky-blue and grey for emphasis. The website is fully responsive, meaning it is optimized for use on both desktop and mobile devices.

The website is built using HTML, CSS, and JavaScript, with the backend powered by React.js, Express and FirestoreDB. The design incorporate a modular approach, with each functional module designed as a separate component that can be easily integrated into the overall system. The design will also incorporate security features like SSL encryption and secure user authentication to ensure the safety of user data and transactions.

4.3 SOFTWARE ARCHITECTURAL DESIGNS

The architecture for the project would involve a server-side component built with Node.js and Express, which would handle incoming requests from the client-side. The client-side would be built with React and Material UI, providing a modern and intuitive user interface. The application's data would be stored and retrieved from FirestoreDB, with a driver being used to communicate with the database from the server-side. The application would be built using modern programming languages like JavaScript, CSS, and HTML.

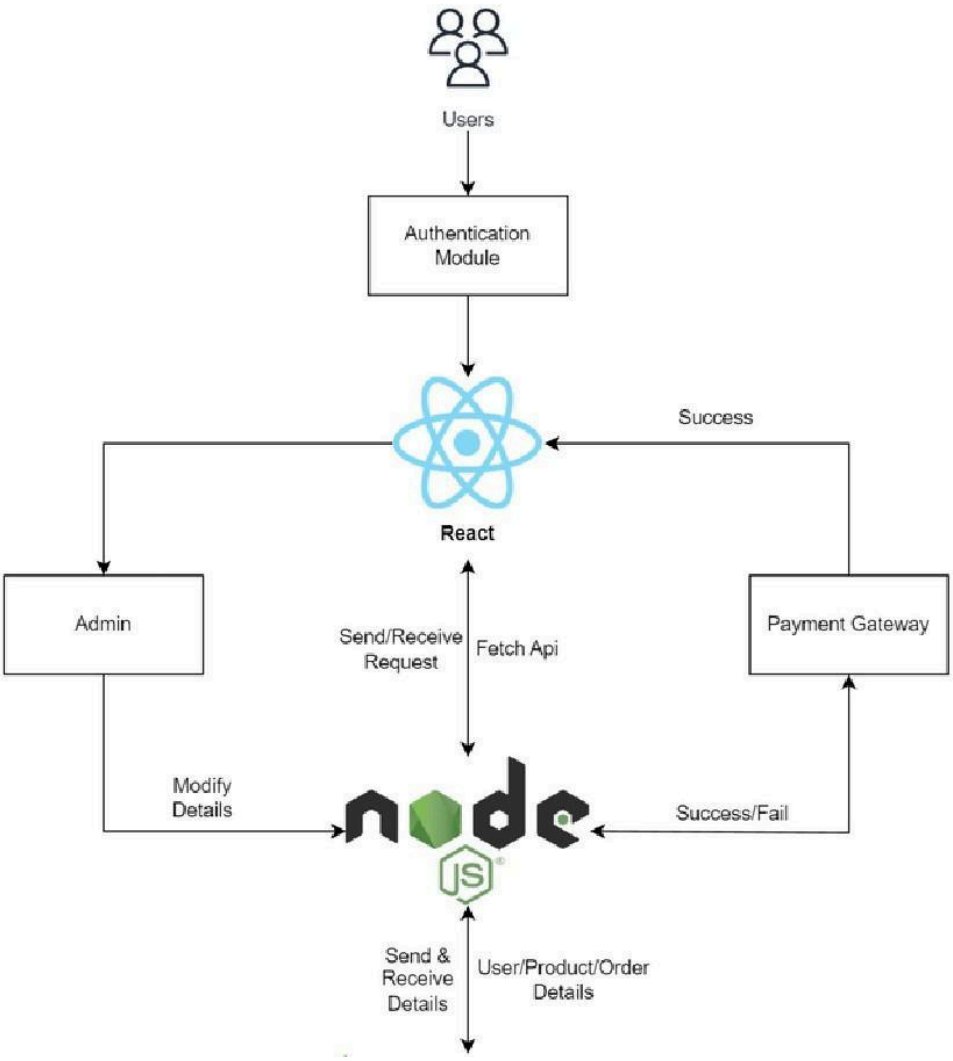

Users
Authentication Module
Success
React
Admin
Payment Gateway
Send/Receive Request
Fetch Api
Modify Details
Success/Fail
Send & Receive Details
User/Product/Order Details
FirestoreDB

Fig 3.0

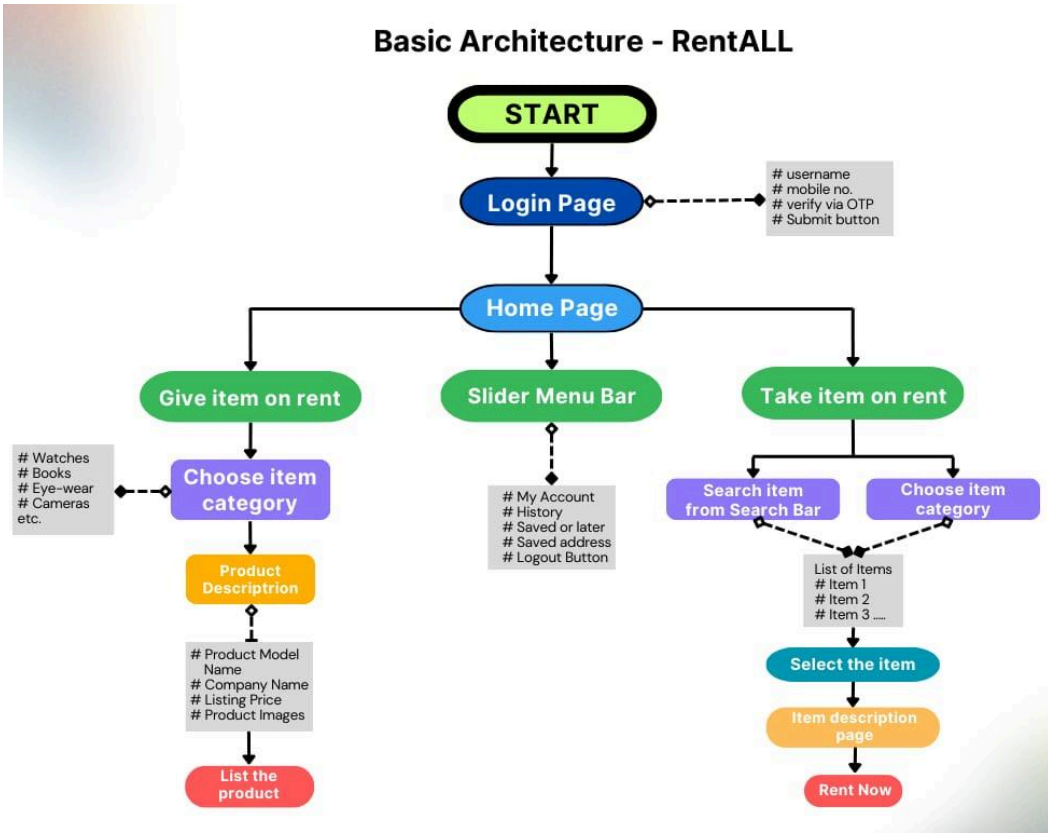


Fig- 4.0

The architectural design includes the following components:

- Client-Side:
    1. React Components: Each of the pages in the website are divided into reusable components built with React.
    2. Material UI: Components from Material UI are used to build the user interface, providing a clean and modern look and feel.
    3. State Management: State is managed with the React Context API, allowing for the passing of data between components.
    4. Routing: The React Router library is used to handle client-side routing, enabling smooth navigation between pages.

- Server-Side:
    1. Node.js and Express: The server-side component is built with Node.js and the Express framework.
    2. API Endpoints: The server-side provides API endpoints that are accessed from the client-side, allowing for the retrieval and storage of data.
    3. FirestoreDB: The database component is built with FirestoreDB, with its driver used to communicate with the database from the server-side.
    4. Authentication: The server-side handles authentication, allowing users to securely log in and access protected resources.
- Development Tools:
    1. Vscode: A popular code editor that is used for development.
    2. Figma: A design tool that is used to create mockups and wireframes of the website.
    3. Wordpress: A content management system (CMS) that allows you to host and build websites.

This architecture provides a scalable and modular framework for the website, allowing for easy maintenance and future expansion.

4.4 USER-INTERFACE DESIGNS

The user interface design for the RentALL website aims to provide a seamless and intuitive experience for users. The design incorporates a modern and sleek look, with easy-to-use

navigation and clear calls-to-action. The use of Material UI and React allows for the creation of responsive and dynamic user interfaces.

The homepage includes a search bar to quickly find specific items along with the different item categories banner. The main navigation menu includes links to the different sections of the website, such as the menu, cart, lease and contact page.

The menu page would display the different items and categories available, with the option to filter and sort by price, rating, or other requirements. Each item would have a clear description, image, and price.

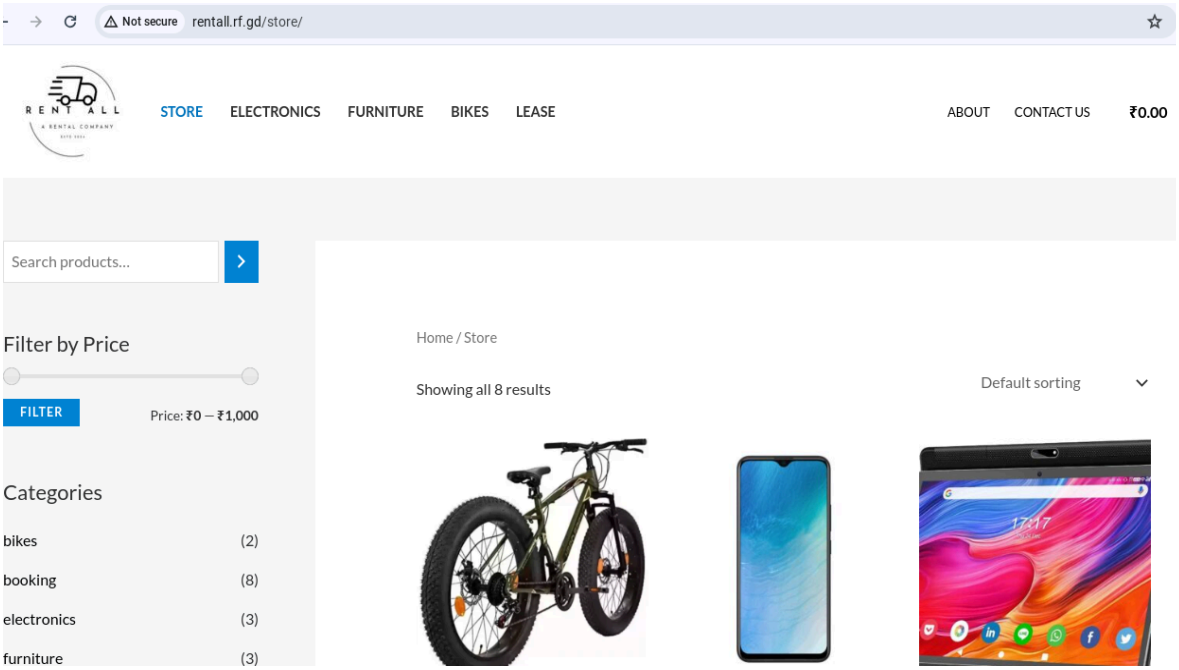


Fig 5.0

The cart page would show the items that the user has added to their cart, with the option to increase or decrease the quantity, as well as remove items. The checkout process would be straightforward, with options for delivery or pickup and a clear breakdown of the total cost.

The contact page would include a form for users to submit any queries or feedback, as well as the contact information for the restaurant and developers of the website. The About us Page gives insights about the venture as well as many other details.

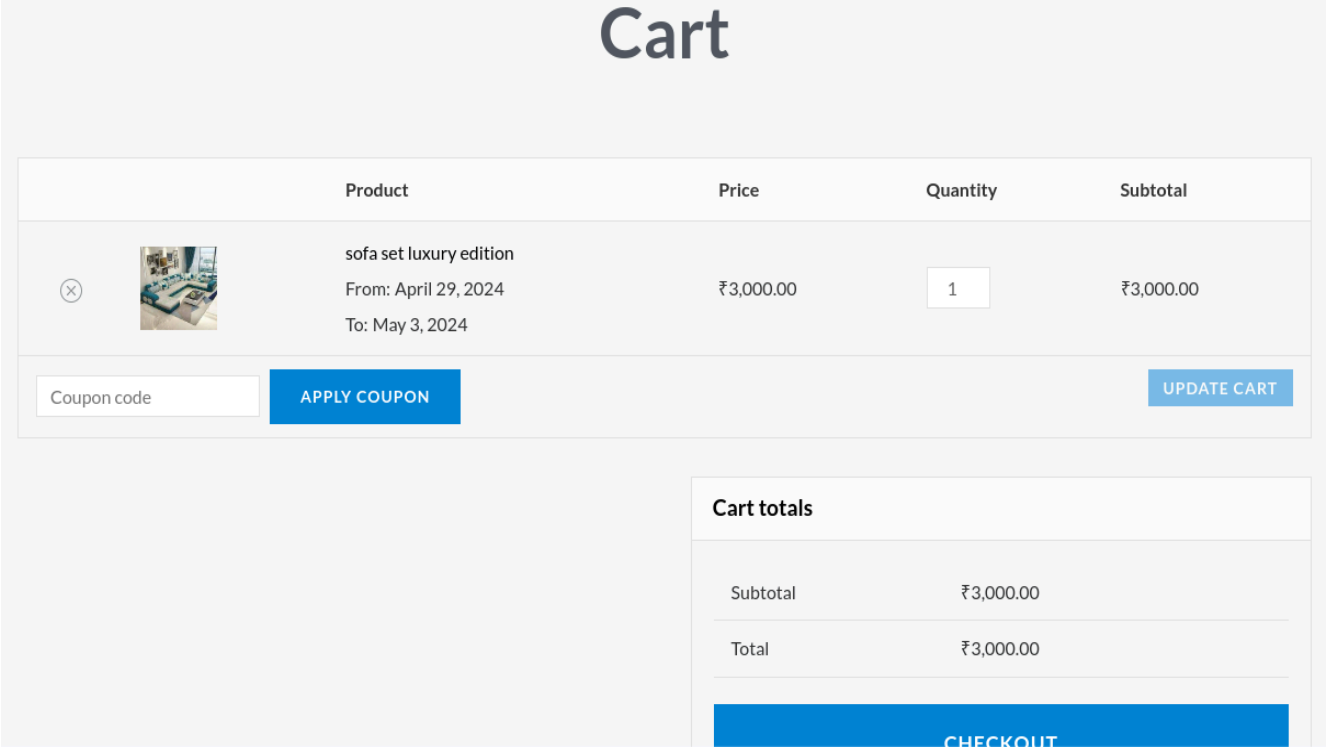


Fig. 6.0

Overall, the user interface design prioritizes usability and ease-of-use, while also incorporating a modern and visually appealing aesthetic.

SUMMARY

The project follows a waterfall methodology and involves various requirements artifacts and software architectural designs. The proposed website for the online rental system is a novel approach to improving the renting experience for the people. The website allows users to rent anything easily from anywhere, reducing the time and effort required to visit the product owner physically. The project's novelty lies in its focus on user's experience and functionality for the first time in the rental market.

CHAPTER-5
TECHNICAL IMPLEMENTATION & ANALYSIS

5.1 OUTLINE

I. Front-End Implementation

A. UI Design

1. Use NicePage to design UI
2. Create high-fidelity wireframes
3. Implement Material UI for consistent design and styling

B. React Implementation

1. Set up React project using create-react-app
2. Implement Redux for state management
3. Implement React Router for navigation
4. Create components for each UI element
5. Implement React hooks to manage component state

II. Back-End Implementation

A. Node.js and Express Implementation

1. Set up Node.js and Express server
2. Implement FirestoreDB for data storage
3. Set up database modeling
4. Create API endpoints for data retrieval and manipulation

B. Authentication

1. Create endpoints for user registration and login

C. Database

1. Design database schema

2. Create database models

3. Implement CRUD operations for database manipulation

III. Testing and Validation

A. Unit Testing

1. Use Jest and Enzyme for unit testing React components.

IV. Deployment

1. Set up deployment environment

2. Ensure proper scaling and performance of the application.

5.2 TECHNICAL CODING AND CODE SOLUTIONS

1. Setting up the Development Environment:
    - Install Node.js: This provided us with the runtime environment for executing JavaScript code on the server-side.
    - Setup FirestoreDB: Used to set up the database for our project.
    - Install Vscode: Used this as your code editor for writing the project code.
    - Set up Wordpress: Used this as a CMS to host and build the website.
    - Set up React: This gave us a basic project structure to start with.
2. Front-end Development:
    - Create React Components: We built reusable and modular React components for different sections of our application's user interface.
    - Use Material UI: We utilized the Material UI component library to design and style our application's user interface elements.
    - Implement Routing: We set up client-side routing using React Router to enable navigation between different pages of our application.
    - Fetch Data from APIs: We used built-in Fetch API to make HTTP requests to our server-side APIs and retrieve data.
3. Back-end Development:
    - Create Express Server: We set up an Express server to handle incoming requests from the client-side and provide the appropriate responses.
    - Define API Endpoints: We designed and implemented RESTful API endpoints in

Express to handle various operations such as user authentication, data retrieval, data creation, and data deletion.

- Connect to FirestoreDB: We used a driver to establish a connection between our RentALL server and the FirestoreDB.
- Implement Data Models: We defined data models to structure the data and interact with the FirestoreDB database.

4. Database Management:
    - Create FirestoreDB Collections: We design and create FirestoreDB collections to store data related to different entities in your application.
    - Implement CRUD Operations: We implement Create, Read, Update, and Delete operations to interact with the database collections.
5. Deployment:
    - Set up Hosting: We chose hosting provider InfinityFree to deploy our application and make it accessible over the internet.
    - Configure Environment Variables: We set up environment variables for sensitive information like database connection strings or API keys.
6. Plugins:
    - Razorpay: A robust payment gateway plugin that securely processes online transactions, accepting various payment methods such as credit/debit cards, net banking, UPI, and wallets. It ensures smooth and secure checkout experiences for customers, seamlessly integrating with WooCommerce to handle order payments and processing.

- Bookings For WooCommerce: This plugin extends WooCommerce's functionality by enabling businesses to offer booking and reservation services directly from their WordPress website. It allows businesses to set up customizable booking calendars, manage availability, accept reservations for appointments or services, and handle booking-related communications efficiently.
- CartFlows: It provides customizable sales funnel templates, one-click upsells, order bumps, and integration with popular payment gateways to streamline the purchasing process and boost revenue.
- Contact Form 7: A versatile form builder plugin that allows website owners to create and manage multiple contact forms effortlessly. In this case, it's specifically utilized to craft a lease form.
- Customer Email Verification for WooCommerce: Enhances security by implementing email verification for customer accounts during registration or checkout processes. It ensures that only legitimate email addresses are used, reducing the risk of fraudulent activities such as fake registrations or unauthorized purchases.
- SMS Verification / Mobile Verification: Implemented to strengthen account security by requiring users to verify their mobile numbers via SMS authentication. This additional layer of verification helps prevent unauthorized access and account misuse, enhancing trust and confidence among users.
- Mailchimp for WooCommerce: The plugin syncs customer data, purchase history, and subscriber information between WooCommerce and Mailchimp, allowing businesses to create targeted email campaigns, automate customer communications, and drive engagement and sales.

These detailed descriptions highlight how each plugin contributes to the website's functionality, security, user experience, and marketing efforts, collectively enhancing its overall performance and effectiveness in achieving business objectives.

5.3 PROTOTYPE SUBMISSION

The prototype for the project is a web-based application built using Wordpress , Node.js, Express, Material UI, React, and FirestoreDB. The application allows users to create an account and log in to access a variety of features.

Once logged in, users can create and edit their profiles, view a dashboard displaying important information related to their account, and manage their orders. They can also browse through a catalog of products, add items to their cart, and checkout with a secure payment system.

The application includes a search function and filters to help users find the products they are looking for quickly and easily. It also includes an order history page that allows users to view their past orders and track their current ones. The prototype has been designed with a clean, modern interface using Material UI components and responsive design to ensure it works seamlessly across different devices. It also includes form validation and error handling to ensure a smooth user experience.

Overall, the prototype provides a user-friendly and intuitive interface that allows users to easily navigate the application and complete tasks efficiently.

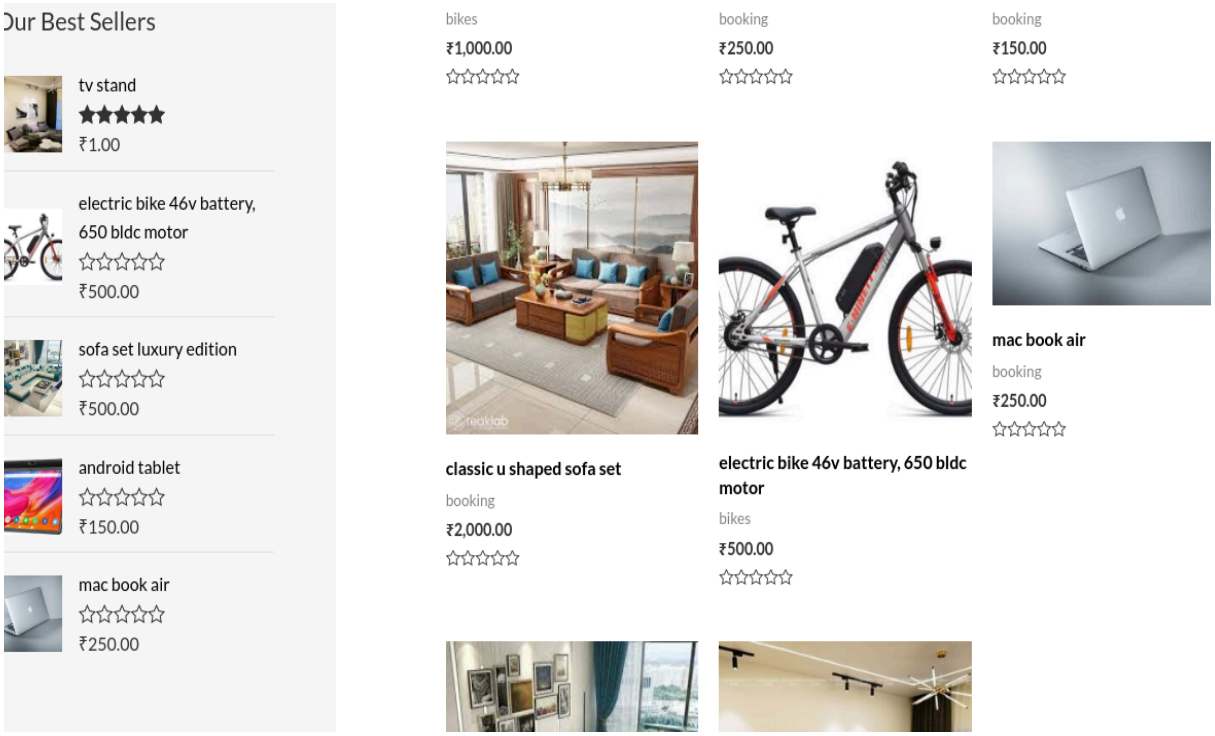


Fig 7.0

SUMMARY

The technical implementations and code solutions for RentALL can be summarized as below:

- Backend Development: Node.js and Express were used for backend development. Node.js provides a runtime environment for executing JavaScript code on the server-side, while Express is a web application framework that simplifies the development of APIs and web services. These technologies were used to handle HTTP requests, implement routing, and interact with the FirestoreDB database.
- Frontend Development: React, JavaScript, CSS, and HTML were used for frontend development. React is a popular JavaScript library for building user interfaces, and it enables the creation of reusable UI components. JavaScript, CSS, and HTML were used to enhance the functionality and style the user interface of the application.

- Database: FirestoreDB was used as the database for this project. It was used to store and retrieve data related to the application's features and functionalities.
- IDE: Visual Studio Code (VS Code) was used as the integrated development environment (IDE) for writing and editing code. VS Code provides a range of features and extensions that enhance the development experience, such as syntax highlighting, debugging tools, and source control integration.
- Design and Prototyping: Nicepage was used for designing and prototyping the user interface of the application. Nicepage is a collaborative design tool that allows designers to create interactive prototypes and share them with stakeholders for feedback and review.

The technical implementation of this project involved utilizing these technologies and tools to develop the backend functionality, frontend user interface, and the database integration. The use of these technologies enabled efficient development, code reusability, and the creation of a responsive and interactive web application.

CHAPTER-6
PROJECT OUTCOME AND APPLICABILITY

6.1 KEY IMPLEMENTATION OUTLINES OF THE SYSTEM

- User Management:

  A. Implement user registration and authentication using Node.js, Express.js, and MongoDB.

  B. Create user profiles and manage user data.

  C. Enable password hashing and encryption for secure storage.

- Product Catalog:

  A. Develop a product catalog to showcase available items.

  B. Implement product listing, search, and filtering functionalities.

  C. Include features like product details, images, pricing, and reviews.

- Shopping Cart:

  A. Design and implement a shopping cart functionality.

  B. Allow users to add products to the cart, update quantities, and remove items.

  C. Calculate and display the total cost of items in the cart.

- Order Processing:

  A. Enable users to place orders for selected items.

  B. Implement an order processing system that handles order creation, payment

processing, and order fulfillment.

- Admin Dashboard:

  A. Create an admin dashboard for managing products, orders, and users.

  B. Implement functionalities like adding new products, editing existing products, and viewing order details.

  C. Implement role-based access control to restrict admin features to authorized users.

- Reviews and Ratings:

  A. Allow users to submit reviews and ratings for products.

  B. Display average ratings and user reviews on product pages.

- Performance Optimization:

  A. Optimize the system for performance and scalability.

  B. Implement caching mechanisms to improve response times.

  C. Optimize database queries and indexes for efficient data retrieval.

- Security Measures:

  A. Implement security measures like input validation, protection against cross-site scripting (XSS) attacks, and cross-site request forgery (CSRF) protection.

  B. Follow best practices for secure coding and handling of sensitive data.

These key implementations will form the core functionalities of the system, providing a robust and user-friendly online product renting platform.

6.2 SIGNIFICANT PROJECT OUTCOMES

- **Enhanced User Access:** The online product rental website provides users with convenient access to a wide variety of products for short-term use, catering to their diverse needs and preferences.
- **Promotion of Sustainability:** By promoting access-based consumption models, the website contributes to environmental sustainability by minimizing waste, reducing resource consumption, and encouraging a more circular economy.
- **Improved Cost-effectiveness:** Users benefit from cost-effective rental options, saving money compared to purchasing items outright, especially for products needed for short periods or occasional use.
- **Transparent and Trustworthy Transactions:** The website fosters transparency and trust by providing clear pricing structures, comprehensive product information, and reliable customer reviews, enhancing user confidence in rental transactions.
- **Optimized Resource Utilization:** Through the sharing and reuse of items among multiple users, the website optimizes resource utilization, maximizing the lifespan and usage of products and minimizing overconsumption.
- **Seamless User Experience:** With an intuitive and user-friendly interface, the website ensures a seamless user experience, allowing users to easily browse, select, and rent products, thereby enhancing user satisfaction and engagement.
- **Secure Transactions:** The website implements robust security measures to protect user data and financial transactions, ensuring the integrity and confidentiality of transactions and safeguarding user information from unauthorized access.
- **Community Building:** By fostering a sense of community among users, the website encourages collaboration and sharing, enabling users to connect over shared interests

and needs related to product rental and consumption.

- **Contribution to the Sharing Economy:** As part of the sharing economy, the website promotes the principles of collaborative consumption, sharing resources, and reducing the overall environmental impact of consumption, thereby contributing to a more sustainable and equitable society.

6.3 PROJECT APPLICABILITY ON REAL-WORLD APPLICATIONS

The online product rental system website has several real-world applications beyond the general usage. Some of the project's applicability in real-world scenarios include:

- **E-commerce Platforms:** The project's online product rental model can be integrated into existing e-commerce platforms, allowing users to rent items alongside traditional purchasing options. This expands the platform's offerings, catering to users who prefer temporary access to products rather than ownership.
- **Event Planning Services:** Event planning services can leverage the online product rental system to offer a comprehensive solution for organizing events. Users can rent party equipment, decorations, and other event-related items, streamlining the event planning process and reducing costs.
- **Travel and Tourism Industry:** The project's online product rental system can be adapted for the travel and tourism industry, allowing travelers to rent equipment such as camping gear, outdoor gear, and travel accessories. This provides travelers with a convenient and cost-effective solution for accessing necessary items during their trips.
- **Education and Learning Platforms:** Educational institutions and learning platforms can utilize the online product rental system to offer textbooks, study materials, and other

educational resources on a rental basis. This makes educational resources more accessible and affordable for students, especially for courses with high-cost textbooks.

- **Subscription Services:** Subscription-based businesses can incorporate the online product rental system into their offerings, allowing subscribers to access a rotating selection of products on a monthly basis. This provides subscribers with variety and flexibility while also reducing the environmental impact of consumption through shared access.
- **Corporate Events and Team Building Activities:** Companies organizing corporate events or team-building activities can utilize the online product rental system to rent equipment and supplies needed for the event. This eliminates the need for companies to purchase and store event-related items, reducing costs and waste.
- **Hospitality Industry:** Hotels and resorts can offer rental services for amenities such as sports equipment, beach gear, and recreational items through the online product rental system. This enhances the guest experience by providing convenient access to desired amenities without the need for ownership.
- **Healthcare Sector:** Healthcare facilities can utilize the online product rental system to offer medical equipment and supplies on a rental basis to patients and caregivers. This provides patients with access to necessary equipment without the burden of purchasing expensive medical devices outright.
- **Consumer Electronics Industry:** Consumer electronics retailers can incorporate the online product rental system into their business models, allowing customers to rent electronics such as cameras, drones, and audiovisual equipment. This provides customers with access to the latest technology without the upfront cost of purchasing.
- **Sustainability Initiatives:** Organizations and initiatives focused on promoting sustainability and reducing consumption can partner with the online product rental

system to encourage shared access to resources and reduce overall environmental impact. This aligns with sustainability goals and promotes responsible consumption practices.

These are just a few examples of how the project's concept can be applied in various real-world settings. The core idea of providing an online platform for product renting has broad applicability and can be customized to meet the specific needs of different industries and establishments.

INFERENCE

Based on the technical requirements, key implementations, and significant outcomes, it can be inferred that the online product rental system can greatly enhance the user experience by providing a seamless and efficient way of renting items. The concept encourages cost-effectiveness, environmental sustainability, and access-based consumption paradigms by giving consumers a platform to rent a wide range of products. The system cultivates user confidence and involvement by means of transparent and trustworthy transactions, smooth user experiences, and strong security measures. The system's adaptability and potential for broad adoption across numerous industries and sectors are further demonstrated by its applicability in a variety of real-world applications. All things considered, the online product rental system provides a workable and novel method to consume, opening the door to a future that is more efficient, equitable, and sustainable.

CHAPTER-7
CONCLUSIONS AND RECOMMENDATION

7.1 OUTLINE

The online product rental system website project has successfully achieved its objectives of providing a convenient and efficient platform for users to rent and lease products online. The key outcomes and achievements of this project include:

- Development of a fully functional web application that enables users to rent and lease products online.
- Implementation of user-friendly features such as menu categories, search functionality, and cart management for easy navigation and ordering.
- Integration with online payment gateways for secure and hassle-free transactions.
- Design and development of an attractive and responsive user interface using Material UI and React.
- Implementation of an admin panel for managing orders, menus, and user accounts.
- Deployment of the web application on a reliable hosting platform.
- Throughout the course of this project, we learned several important lessons, including:
- Planning and organization are key to project success. We found that breaking down the project into manageable tasks and setting clear timelines helped us to stay on track and meet our goals.
- Communication is critical. Effective communication among team members ensured that everyone was on the same page and that issues were resolved quickly.

- Thorough testing is necessary to ensure the functionality and reliability of the web application.
- Areas for improvement for this project include:
- Integration with additional payment gateways to provide users with more payment options.
- Optimization of the web application's performance to reduce page loading times and improve user experience.
- Expand the range of products available for rental to cater to a broader audience and meet diverse user needs and preferences.
- Strengthen customer support services to address user inquiries, resolve issues, and provide assistance throughout the rental process.
- Utilize data analytics and machine learning algorithms to personalize product recommendations based on user preferences, past rental history, and browsing behavior.

Overall, this project was a valuable learning experience that enabled us to develop our technical skills and gain experience working on a real-world web application. We are proud of the outcomes and achievements of this project and look forward to implementing improvements in the future.

7.2 LIMITATIONS/ CONSTRAINTS OF THE SYSTEM

Some of the limitations and constraints for our online product rental website could include:

- Limited Product Availability: The system's effectiveness may be limited by the availability of rental products.
- Geographical Constraints: The system's reach may be restricted by geographical constraints, with certain areas having limited access to rental products or facing higher shipping costs and longer delivery times.
- Quality Control: The system may face limitations in maintaining consistent product quality and reliability over time.
- Logistics and Transportation Challenges: Managing the logistics and transportation of rental products, including shipping, handling, and returns, can pose logistical challenges and incur additional costs.
- Risk of Damage or Loss: Rental products are susceptible to damage, loss, or theft during the rental period, leading to potential disputes, liabilities, and financial losses for both users and the rental service provider.
- Dependence on User Compliance: The success of the system relies on user compliance with rental terms and conditions, including return deadlines, usage guidelines, and damage policies.
- Security and Privacy Concerns: The system may face security and privacy concerns related to the collection, storage, and handling of sensitive user data, including personal information and payment details.
- Financial Viability: Establishing and maintaining a profitable business model for the online product rental system can be challenging, considering factors like inventory costs, operational expenses, and competition from traditional retail channels.

- Regulatory Compliance: Compliance with regulatory requirements and legal obligations, including consumer protection laws, tax regulations, and liability issues, adds complexity and potential constraints to the operation of the system.
- User Adoption and Behavior: The success of the system depends on user adoption and behavior, including awareness, acceptance, and willingness to use rental services over traditional ownership models.

7.3 FUTURE ENHANCEMENTS

There are several possible future enhancements for our online product rental system website, such as:

- Mobile application: Creating a mobile application that allows users to order from their phones would be a significant improvement. It would provide users with more convenience and flexibility.
- Real-time tracking: Providing real-time tracking of orders would allow users to know exactly when their item will be delivered, giving them more control over their time.
- Integration with social media: Integrating the website with social media platforms would make it easier for users to share information about the online rental system and its services, which could increase the website's visibility and attract more users.
- Multi-language support: Providing support for multiple languages would cater to nationwide users and improve their experience using the website.
- Integration with Sustainability Initiatives: Partner with sustainability initiatives and organizations to promote eco-friendly practices and encourage users to make environmentally conscious rental choices.
- Integration of IoT Devices: Implement Internet of Things (IoT) technology to track the location, usage, and condition of rental products in real-time.

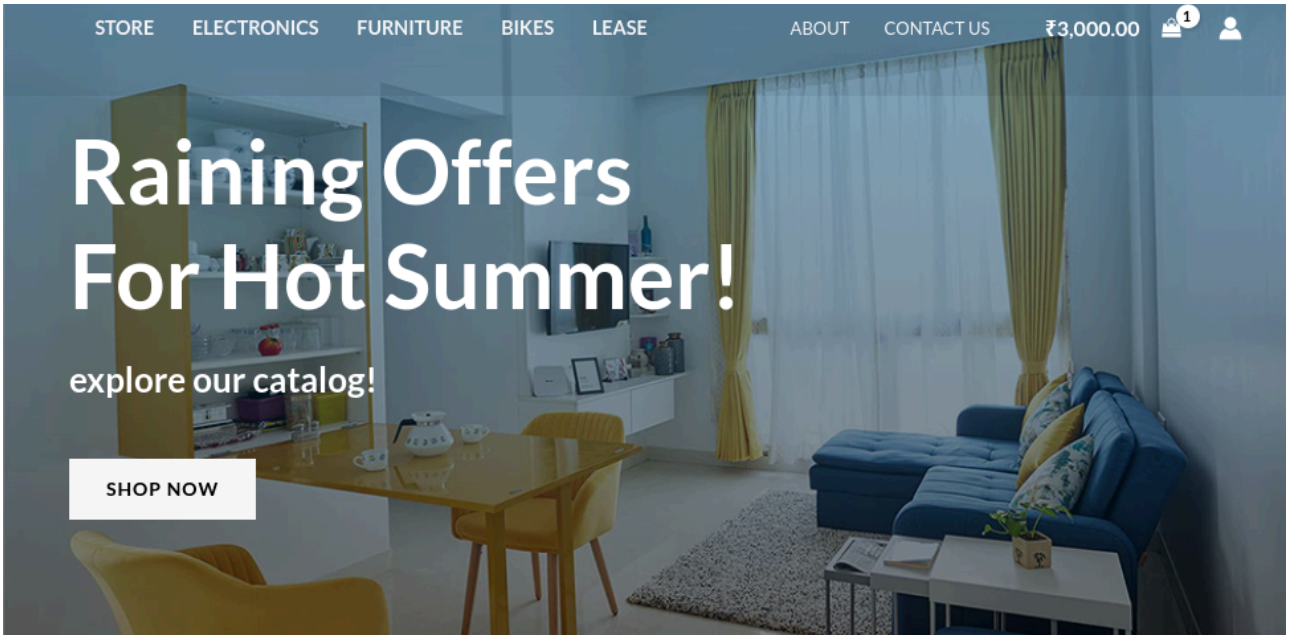
INFERENCE

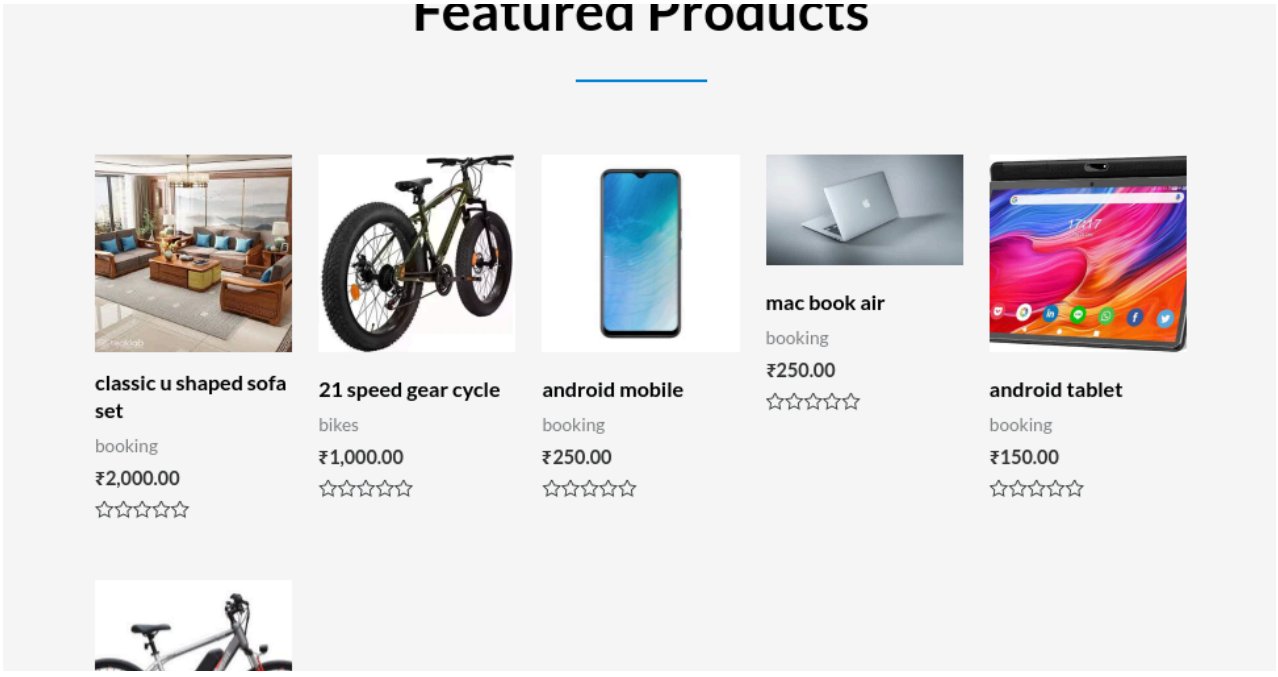
In conclusion, the website for the online product rental system represents a revolutionary approach that supports efficiency and sustainability while catering to the changing demands and tastes of contemporary consumers. Access-based consumption models, cost-effectiveness, and environmental stewardship are encouraged by the system, which offers a platform for easy access to a wide variety of products for rental purposes. The website inspires visitors with confidence and trust thanks to its transparent transactions, easy user experiences, and strong security measures. Moreover, its adaptability and suitability for a range of sectors and industries show that it has the capacity to spur innovation and constructive change. The system is positioned to change how people interact with and consume goods in the digital age as it develops and grows, helping to create a future that is more user-centric, egalitarian, and sustainable.

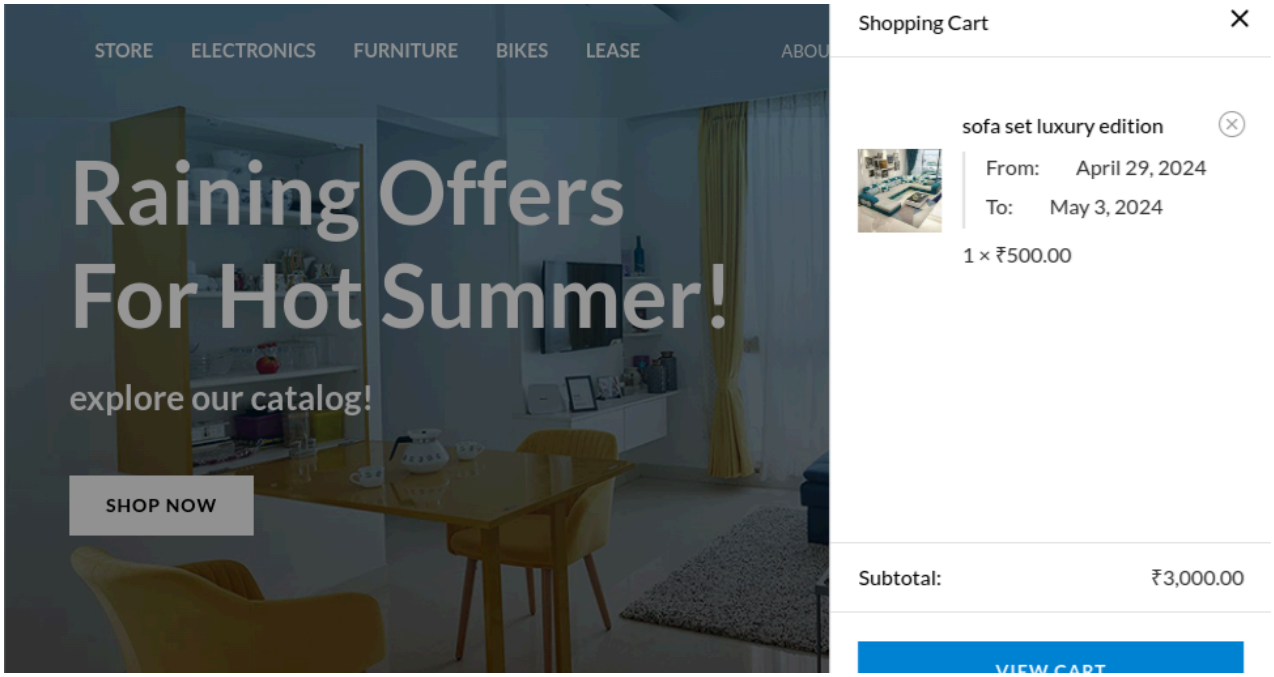
The future enhancements for the website can further improve its functionality and user experience, such as implementing a mobile app, adding more payment options, integrating IoT, and expanding the delivery range.

Overall, the project has demonstrated the potential of technology to solve real-world problems and improve the quality of life for people. It also highlights the importance of continuous improvement and adaptation to meet the changing needs and expectations of users.

APPENDIX A(Screenshots)







		Product	Price	Quantity	Subtotal
⊗		sofa set luxury edition From: April 29, 2024 To: May 3, 2024	₹3,000.00	1	₹3,000.00

Coupon code APPLY COUPON UPDATE CART

Cart totals

Subtotal	₹3,000.00
Total	₹3,000.00

CHECKOUT

Billing details

First name *

Last name *

Company name (optional)

Country / Region *

India

Street address *

House number and street name

Apartment, suite, unit, etc. (optional)

Town / City *

State *

Karnataka

Your order

Product		Subtotal
sofa set luxury edition	From: April 29, 2024 × 12 To: May 3, 2024	₹3,000.00
Subtotal		₹3,000.00
Total		₹3,000.00

- Cash on delivery
- Credit Card/Debit Card/NetBanking

Pay by Razorpay

Pay securely by Credit or Debit card

Phone *

Email address *

Account username *

Username

Create account password *

Password

Your personal data will be used to process your order, support your experience throughout this website, and for other purposes described in our privacy policy.

VERIFY YOUR ACCOUNT

Your name

Your email

your product name

your product description

your address

your contact number

your product display image

Choose File No file chosen

your product image

[

Choose File No file chosen

rent amount

by day ☐ by hour ☐ by month ☐

product condition

SUBMIT

APPENDIX -B(Coding)

JAVASCRIPT CODE (main.js)

```
(()=>{
    var e = {
        n: t=>{
            var a = t && t.__esModule ? ()=>t.default : ()=>t;
            return e.d(a, {
                a
            }),
            a
        }
        ,
        d: (t,a)=>{
            for (var o in a)
                e.o(a, o) && !e.o(t, o) && Object.defineProperty(t, o,
{
                    enumerable: !0,
                    get: a[o]
                })
        }
        ,
        o: (e,t)=>Object.prototype.hasOwnProperty.call(e, t)
    };
    (()=>{
        "use strict";
        const t = window.wp.domReady;
        var a = e.n(t);
        const o = ()=>window.location.href !==
window.parent.location.href
          , n = "starter-templates-iframe-preview-data"
          , r = ()=>{
            let e = "";
            const t = document.querySelector(".site-logo-img img");
            return t && (e = t.src),
            e
        }
        ;
        let s = r();
        const l = (e,t)=>{
            if (!e)
                return "";
            if (e) {
```

```
                const a = e.match(/'([^']+)'/);
                return a ? a[1] : "inherit" === e ? t : e
            }
            return t || void 0
        }
          , i = e=>{
            switch (e.value.param) {
            case "siteLogo":
                const t = document.querySelectorAll(".site-logo-img
img");
                "" === s && (s = r());
                let a = e.value.data.url || s;
                if (a = e.value.data.dataUri || a,
                0 === t.length && "" !== a) {
                    const t = document.createElement("span");
                    t.classList.add("site-logo-img");
                    const o = document.createElement("a");
                    o.setAttribute("class", "custom-logo-link"),
                    o.setAttribute("href", "#"),
                    o.setAttribute("aria-current", "page"),
                    t.appendChild(o);
                    const n = document.createElement("img");
                    n.classList.add("custom-logo"),
                    n.setAttribute("src", a),
                    o.appendChild(n);
                    const r =
document.getElementById("ast-desktop-header").querySelectorAll(".ast-s
ite-identity")[0]
                      , s =
r.querySelectorAll(".ast-site-title-wrap")[0];
                    r.insertBefore(t, s);
                    const l = e.value.data.width || "";
                    "" !== l && (n.style.width = l + "px",
                    n.style.maxWidth = l + "px")
                } else if ("" !== a)
                    for (const [o,n] of Object.entries(t)) {
                        n.removeAttribute("srcset"),
                        n.setAttribute("src", a);
                        const t = e.value.data.width;
                        "" !== t && (n.style.width = t + "px",
                        n.style.maxWidth = t + "px")
                    }
                break;
            case "colorPalette":
                const o = e.value.data.colors || []
                  , n =
starter_templates_zip_preview.AstColorPaletteVarPrefix
                  , i =
```

```
starter_templates_zip_preview.AstEleColorPaletteVarPrefix;
                if (0 === o.length) {

document.querySelector("body").classList.remove("starter-templates-pre
view-palette");
                    const e =
document.getElementsByClassName("starter-templates-preview-palette");
                    return void (e.length > 0 && e[0].remove())
                }

document.querySelector("body").classList.add("starter-templates-previe
w-palette");
                const d =
Object.entries(o).map(((e,t)=>[`--e-global-color-${i[t].replace(/-/g,
"")}: ${e[1]};`, `${n}${t}:
${e[1]};`])).map((e=>e.join(""))).join("");
                let c =
document.getElementById("starter-templates-preview-palette-css");
                c || (c = document.createElement("style"),
                c.id = "starter-templates-preview-palette-css",
                c.setAttribute("rel", "stylesheet"),
                document.head.appendChild(c)),
                c.innerHTML = `.starter-templates-preview-palette{
${d} }`;
                break;
            case "siteTypography":
                if (!Object.keys(e.value.data).length) {
                    const e =
document.getElementById("starter-templates-typography");
                    return void (e && e.remove())
                }
                (e=>{
                    if (!e)
                        return;
                    if
(!document.getElementById("google-fonts-domain")) {
                        const e = document.createElement("link");
                        e.id = "google-fonts-domain",
                        e.setAttribute("rel", "preconnect"),
                        e.setAttribute("href",
"https://fonts.gstatic.com"),
                        document.head.appendChild(e)
                    }
                    let t =
document.getElementById("st-previw-google-fonts-url");
                    t || (t = document.createElement("link"),
                    t.id = "st-previw-google-fonts-url",
                    t.setAttribute("rel", "stylesheet"),
```

```
                    document.head.appendChild(t));
                    const a = [];
                    let o = e["body-font-family"] || ""
                      , n = parseInt(e["body-font-weight"]) || "";
                    n && (n = `:wght@${n}`),
                    o && (o = l(o),
                    o = o.replace(" ", "+"),
                    a.push(`family=${o}${n}`));
                    let r = e["headings-font-family"] || ""
                      , s = parseInt(e["headings-font-weight"]) || "";
                    s && (s = `:wght@${s}`),
                    r && (r = l(r, o),
                    r = r.replace(" ", "+"),
                    a.push(`family=${r}${s}`));
                    const i =
`https://fonts.googleapis.com/css2?${a.join("&")}&display=swap`;
                    t.setAttribute("href", i)
                }
                )(e.value.data),
                (e=>{
                    if (!e)
                        return;
                    let t =
document.getElementById("starter-templates-typography");
                    t || (t = document.createElement("style"),
                    t.id = "starter-templates-typography",
                    t.setAttribute("rel", "stylesheet"),
                    document.head.appendChild(t));
                    let a = "";
                    a += "body, button, input, select, textarea,
.ast-button, .ast-custom-button {",
                    a += "\tfont-family: " + e["body-font-family"] +
";",
                    a += "\tfont-weight: " + e["body-font-weight"] +
";",
                    a += "\tfont-size: " + e["font-size-body"].desktop
+ e["font-size-body"]["desktop-unit"] + ";",
                    a += "\tline-height: " + e["body-line-height"] +
";",
                    a += "}",
                    a += "h1, .entry-content h1, h2, .entry-content
h2, h3, .entry-content h3, h4, .entry-content h4, h5, .entry-content
h5, h6, .entry-content h6, .site-title, .site-title a {",
                    a += "\tfont-family: " + e["headings-font-family"]
+ ";",
                    a += "\tline-height: " + e["headings-line-height"]
+ ";",
                    a += "\tfont-weight: " + e["headings-font-weight"]
```

```
+ ";",
                    a += "}",
                    ["h1", "h2", "h3", "h4", "h5", "h6"].forEach((t=>{
                        const o = "inherit" === e["font-family-" + t]
? e["headings-font-family"] : e["font-family-" + t]
                          , n = "inherit" === e["font-weight-" + t] ?
e["headings-font-weight"] : e["font-weight-" + t];
                        let r = "";
                        void 0 !== o && "" !== o && (r += `${t},
.entry-content ${t} {`,
                        r += "\tfont-family: " + o + ";"),
                        void 0 !== e["line-height-" + t] && "" !==
e["line-height-" + t] && (r += "\tline-height: " + e["line-height-" +
t] + ";"),
                        void 0 !== n && "" !== n && (r +=
"\tfont-weight: " + n + ";"),
                        a += "" !== r ? r + "}" : ""
                    }
                    )),
                    t.innerHTML = a
                }
                )(e.value.data);
                break;
            case "siteTitle":
                (e=>{
                    const t =
document.getElementById("ast-desktop-header")
                      , a = t &&
t.querySelectorAll(".ast-site-identity")[0]
                      , o = a &&
a.querySelectorAll(".ast-site-title-wrap")[0];
                    o && (o.style.display = e ? "block" : "none")
                }
                )(e.value.data);
                break;
            case "clearPreviewAssets":
                const m =
document.getElementById("starter-templates-typography");
                m && m.remove(),

document.querySelector("body").classList.remove("starter-templates-pre
view-palette");
                const p =
document.getElementsByClassName("starter-templates-preview-palette");
                p.length > 0 && p[0].remove();
                break;
            case "completeOnboarding":
```

```
localStorage.removeItem("starter-templates-iframe-preview-data")
            }
        }
        ;
        window.addEventListener("message", (function(e) {
            if (o() && (console.log("addEventListener message: ", e),
            "object" == typeof e.data &&
"starterTemplatePreviewDispatch" === e.data.call)) {
                const t = e.data;
                let a = JSON.parse(localStorage.getItem(n));
                null === a && (a = {},
                a.data = {}),
                a.data[t.value.param] = t.value.data,
                delete a.data.clearPreviewAssets,
                t.url = window.location.origin,
                a.url = window.location.origin,
                "cleanStorage" === t.value.param ? (delete
a.data.cleanStorage,
                a.data.siteLogo = t.value.data,
                a.data.colorPalette = {},
                a.data.siteTypography = {},
                Object.keys(a.data).map((e=>i({
                    value: {
                        param: e,
                        data: a.data[e]
                    }
                }))) : i(t),
                localStorage.setItem(n, JSON.stringify(a))
            }
        }
        ), !1),
        a()(()=>{
            if (!o())
                return;
            const e = document.createElement("style");
            e.id = "starter-templates-logo-css",
            document.getElementsByTagName("head")[0].appendChild(e),
            e.innerHTML = ".site-logo-img img { transition: unset; }
#wpadminbar { display: none; } html{  margin-top: 0 !important; }}";
            const t = (a = n,
            JSON.parse(localStorage.getItem(a)));
            var a;
            t && Object.keys(t.data).map((e=>i({
                value: {
                    param: e,
                    data: t.data[e]
                }
            })))
```

```
        }
        ))
    }
    )()
}
)();
```

CSS Code (style.css)

```
.wpcf7 .screen-reader-response {
	position: absolute;
	overflow: hidden;
	clip: rect(1px, 1px, 1px, 1px);
	clip-path: inset(50%);
	height: 1px;
	width: 1px;
	margin: -1px;
	padding: 0;
	border: 0;
	word-wrap: normal !important;
}

.wpcf7 form .wpcf7-response-output {
	margin: 2em 0.5em 1em;
	padding: 0.2em 1em;
	border: 2px solid #00a0d2; /* Blue */
}

.wpcf7 form.init .wpcf7-response-output,
.wpcf7 form.resetting .wpcf7-response-output,
.wpcf7 form.submitting .wpcf7-response-output {
	display: none;
}

.wpcf7 form.sent .wpcf7-response-output {
	border-color: #46b450; /* Green */
}

.wpcf7 form.failed .wpcf7-response-output,
.wpcf7 form.aborted .wpcf7-response-output {
	border-color: #dc3232; /* Red */
}

.wpcf7 form.spam .wpcf7-response-output {
	border-color: #f56e28; /* Orange */
}

.wpcf7 form.invalid .wpcf7-response-output,
.wpcf7 form.unaccepted .wpcf7-response-output,
```

```
.wpcf7 form.payment-required .wpcf7-response-output {
	border-color: #ffb900; /* Yellow */
}

.wpcf7-form-control-wrap {
	position: relative;
}

.wpcf7-not-valid-tip {
	color: #dc3232; /* Red */
	font-size: 1em;
	font-weight: normal;
	display: block;
}

.use-floating-validation-tip .wpcf7-not-valid-tip {
	position: relative;
	top: -2ex;
	left: 1em;
	z-index: 100;
	border: 1px solid #dc3232;
	background: #fff;
	padding: .2em .8em;
	width: 24em;
}

.wpcf7-list-item {
	display: inline-block;
	margin: 0 0 0 1em;
}

.wpcf7-list-item-label::before,
.wpcf7-list-item-label::after {
	content: " ";
}

.wpcf7-spinner {
	visibility: hidden;
	display: inline-block;
	background-color: #23282d; /* Dark Gray 800 */
	opacity: 0.75;
	width: 24px;
	height: 24px;
```

```
	border: none;
	border-radius: 100%;
	padding: 0;
	margin: 0 24px;
	position: relative;
}

form.submitting .wpcf7-spinner {
	visibility: visible;
}

.wpcf7-spinner::before {
	content: '';
	position: absolute;
	background-color: #fbfbfc; /* Light Gray 100 */
	top: 4px;
	left: 4px;
	width: 6px;
	height: 6px;
	border: none;
	border-radius: 100%;
	transform-origin: 8px 8px;
	animation-name: spin;
	animation-duration: 1000ms;
	animation-timing-function: linear;
	animation-iteration-count: infinite;
}

@media (prefers-reduced-motion: reduce) {
	.wpcf7-spinner::before {
		animation-name: blink;
		animation-duration: 2000ms;
	}
}

@keyframes spin {
	from {
		transform: rotate(0deg);
	}

	to {
		transform: rotate(360deg);
	}
```

```
}

@keyframes blink {
	from {
		opacity: 0;
	}

	50% {
		opacity: 1;
	}

	to {
		opacity: 0;
	}
}

.wpcf7 [inert] {
	opacity: 0.5;
}

.wpcf7 input[type="file"] {
	cursor: pointer;
}

.wpcf7 input[type="file"]:disabled {
	cursor: default;
}

.wpcf7 .wpcf7-submit:disabled {
	cursor: not-allowed;
}

.wpcf7 input[type="url"],
.wpcf7 input[type="email"],
.wpcf7 input[type="tel"] {
	direction: ltr;
}

.wpcf7-reflection > output {
	display: list-item;
	list-style: none;
}
```

```
.wpcf7-reflection > output[hidden] {
	display: none;
}
```

REFERENCES

1. Luis Zwick, Professor António Nogueira Leite, Professor Euclides Ferreira Major , “The Founding of a Peer-to-Peer Rental Marketplace – Competitive Landscape and Operations” 2021-22_fall_43881_luis-zwick.pdf
2. Proc. of 2016 3rd Int. Conf. on Information Tech., Computer, and Electrical Engineering (ICITACEE), Oct 19-21, 2016, Semarang, Indonesia.
3. https://fatllama.com/
4. https://www.rentomojo.com/?utm_source=google&utm_medium=paid&utm_campaign=Td d_Gs_Ind_Brand_Purchase&utm_content=Brand&gad_source=1&gclid=CjwKCAjw57exB hAsEiwAaIxaZm7AeQ7DQbn2gO_G6y07lr1i_Wb5UhEhai5MkhbxlQvcf3Vvlt_lWxoCVh 8QAvD_BwE&uniqid=90928bbf-4ead-475e-96e4-87b7145eb521