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Web-based Rental Application for Leasing and Renting Daily Utilities

Hitanshi Shroff[1], Sourav Joshi[1,*], Khushi Khandelwal[1], Rutuja Arutwar[1], Suruchi Dedgaonkar[2], Ratnamala Bhimanpallewar[2]

Abstract

This project addresses the challenges posed by a cluttered online marketplace, specifically catering to the everyday needs of our local community. We propose a user-friendly website designed as a one-stop solution for borrowing, renting, and buying a wide range of items. Existing platforms often lack organization, forcing users to navigate multiple channels to find what they need, leading to wasted time and effort. Our website is built to overcome this disorganization by providing a streamlined and intuitive interface that centralizes the search process. Key features of the platform include advanced search options, secure payment integrations, and a robust categorization system to ensure a seamless user experience. Initial testing demonstrates that this platform significantly simplifies the process of finding and accessing desired products, offering convenience and efficiency. Moreover, the project holds the potential to transform local commerce by fostering a more interconnected, resource-efficient, and sustainable ecosystem. By reducing reliance on disparate platforms, this initiative not only enhances user satisfaction but also promotes community engagement and the circular economy.

Keywords: Community, website, borrow, rent, buy, user-friendly, daily necessities, simplify, navigate, local commerce

INTRODUCTION

In the current landscape of diverse consumer needs and fragmented local business operations, our work addresses the challenges arising from the convoluted nature of obtaining daily necessities. Traditionally, individuals navigate a multitude of websites for distinct transactions, leading to inefficiencies and frustrations. Recognizing this issue, our project proposes a comprehensive solution, a unified website encompassing leasing, renting, and buying options. The overarching objective is to streamline the daily procurement process, offering a user-friendly platform tailored to the specific requirements of those seeking daily items. Our innovative online solution is intricately designed to simplify the search and purchase journey, enhancing overall user experience. The motivation behind our work is not only to provide immediate relief to individuals but also to optimize the functionality of the local daily utility market. By consolidating disparate services into a cohesive platform, our work aspires to contribute to the efficiency and efficacy of local commerce, fostering a more accessible and user-centric marketplace. This study delves into the specifics of our approach, investigating the impact of our integrated solution on user behavior and the broader implications for local business dynamics.

This work aims to develop and evaluate a unified online platform that streamlines access to

***Author for Correspondence**
Sourav Joshi
E-mail: sourav.22111195@viit.ac.in

[1]Student, Department of Information Technology, Vishwakarma Institute of Technology, Pune, Maharashtra, India
[2]Assistant Professor, Department of Information Technology, Vishwakarma Institute of Technology, Pune, Maharashtra, India

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everyday necessities through leasing, renting, and buying options. We hypothesize that this platform will:

- *Enhance user experience:* By consolidating services onto a single, user-friendly platform, the research seeks to simplify the search and acquisition process for daily items, reducing inefficiencies and frustrations associated with navigating disparate websites.
- *Optimize local commerce:* The research investigates the impact of consolidating services on the functionality of the local daily utility market. The objective is to improve overall efficiency and efficacy by creating a more accessible and user-centric marketplace.
- *Analyze user behavior:* The research will explore how user behavior changes in response to the integrated solution. This analysis will provide insights into user preferences and potential adaptations within the local commerce landscape.

LITERATURE REVIEW

Research by Mehta *et al.* emphasizes the increasing importance of user-friendly rental apps, particularly beneficial for individuals undergoing life changes like relocation [1]. The study highlights the demand for a comprehensive system managing rental information for various items, such as furniture and home appliances. The research aligns with the eco-friendly notion of encouraging reusability, minimizing resource consumption, and promoting sustainability.

The research by Ayedi *et al.* about bike sharing systems looks at how these systems have changed over time, from the 1960s to now [2]. It talks about how shared bikes can be really helpful in many ways, like making the environment better, saving money on fuel, and reducing pollution. The study says that having bikes to rent in Sfax could be a good way for people to get around the city, but it is essential to know what people think about using bikes for transportation. The research suggests that it is crucial to find sustainable ways to fix transportation problems in cities like Sfax.

The research by Ping *et al*. about managing bike rentals on college campuses talks about the problems with how these rental systems are currently handled [3]. The paper proposes a new way of managing bike rentals on campuses that tackles these identified problems. It suggests a system that looks after users, bikes, orders, and other important parts. The research also mentions how technology is changing and how having a good system can make things more convenient and sustainable for both students and the businesses that rent out bikes on campus.

The research by Permitasari and Sahara about bike rental systems shows that more people see bikes as a good and eco-friendly way to get around [4]. People think we need better computerized systems to rent bikes easily and reliably. The paper suggests making a website or app for renting bikes, especially for tourists. The app they propose would focus on letting people pay for bike rentals without using cash. This is part of a bigger trend in the research that talks about how digital payments can make things easier and safer for users.

The research by Lu and Lin talks about the study on bicycle-sharing systems (BSS) and emphasizes the challenge of accurately predicting future bike rentals for optimal system performance [5]. To address this, researchers propose using a specialized computer model called a Recurrent Neural Network (RNN). This model considers factors like time, station proximity, and other relevant variables to forecast bike rentals more effectively than the Poisson method, particularly during peak times such as weekends or rush hours. In the realm of smart transportation research, this paper contributes a valuable model to enhance the efficiency of bike-sharing systems.

The research by Nireesha and Srinivasa focuses on fixing problems seen in current systems [6]. It looks at what is wrong with current systems, like being hard to use, needing a lot of manual work, and having security issues. The study says that the new system they propose can fix these problems. They think it can make things better by being more reliable, easier to use online, and fixing security issues.

The research also talks about how important it is to keep sensitive information safe in today's digital world. The “Biker Spot” project offers a complete solution for managing a motorcycle showroom [7]. It handles various tasks like customer care, making price estimates, sales, keeping track of payments, services, spare parts, staying in touch with customers, and managing employee details. The new system they suggest, made with HTML, CSS for the look, and PHP for the back end, seems like a god and modern option. Overall, it aims to be a strong and flexible software for managing showrooms.

The research by Chauhan *et al*. looks at how people with limited income find affordable places to live [8]. It talks about how informal rentals, like renting from individuals rather than big companies, can be important for people who do not have a lot of money. They talk about a new app called “On Rent” for Android phones, which helps people find affordable options. This app also helps to find things like study materials and electrical appliances. This app is part of a bigger trend of using technology to make it easier for people to find affordable places to live and share resources.

The research by Koralli *et al*. explores how book rental systems are becoming essential for readers [9]. These systems offer a convenient and cheaper way for people to access different books. They highlight the importance of having one place, like an app, where users can see available books, make accounts, add books by scanning, search for specific titles, and ask to rent books. The Android Book Rental system they propose fits in with what people want today: easy-to-use and modern solutions.

The research by Rastogi *et al*. looks at making a system that is easy to use for managing rental houses [10]. They talk about how managing rental properties can be hard with all the manual work and paperwork involved. They focus on three main parts of the system: managing the houses, handling rent payments, and registering tenants. They made sure the system has simple buttons that make it easy for property managers to work with the database. They use Microsoft Access 2007 as the technical part behind the scenes, which helps make the database work better.

The research by Siddiqui *et al*. talks about creating an Android app focused on renting homes for short or long periods [11]. It discusses how booking apartments traditionally takes a lot of time, causing problems for people trying to find a place to stay. This app matches the changing preferences of how people want to live nowadays. It aims to make booking accommodations easier for everyone and hopes to create a more convenient and sustainable way for people to rent homes.

The research by Buradkar *et al*. focuses on making a rental management system with two main parts: an app for users and a storage system at the back end [12]. They introduce a consumer portal called Cashing Flow. They have created a mobile system for managing house rentals that helps agents and tenants access house records easily. The system allows users to share records, advertise available apartments and digital transactions. This helps people make secure and smooth financial interactions when renting houses. Overall, the research sees this system as a strategic way to adapt to new rules and technology changes in rental management.

Research by Tiwari *et al*. introduces an online house rental system, emphasizing its user-friendliness for property managers and tenants [13]. It addresses drawbacks of paper-based records, advocating for an efficient rental house management system. Highlighting its potential to boost job markets and reshape renting perceptions, the research underscores the continued importance of rental housing post-financial challenges. The proposed online system aims for fairness and efficiency, providing a smart solution to sector challenges.

The research by Albino talks about creating a system for the car rental business [14]. It looks at how technology is getting better and how people want easy-to-use online platforms for renting cars. The study focuses on making the rental process faster, looking into ways to schedule rentals quickly using special computer algorithms. Overall, the research sees the car rental system they developed as a good

answer to what the industry needs. It uses technology to offer efficiency, clarity, and accessibility for people renting cars.

The research by Voumick *et al.* on an online smart house rental system looks at how technology is changing real estate and rentals [15]. It focuses on the growing need for faster and better ways to find rental homes using digital solutions. Overall, the research sees their developed system as using advanced technology to solve today's challenges in the house rental market. It includes features that match what people want in this digital age.

The research by Thakur focusing on the Car Rental System, looks at how online booking platforms are changing the car rental industry [16]. It talks about how people worldwide want easier and more accessible ways to reserve cars. The research likely discusses the value of personalized user accounts, which help make reservations smoother and keep customers engaged. In conclusion, the paper talks about how customers now expect to not only book and rent cars online but also have them delivered.

PROPOSED SYSTEM

Our work started by analyzing existing borrowing, renting, and buying platforms. This helped us understand user challenges and best practices [17]. Our proposed system tackles the challenge of a scattered online marketplace for everyday necessities by creating a user-friendly website integrating borrowing, renting, and buying functionalities. We analyzed existing platforms to understand user pain points and best practices.

The website utilizes modern programming languages and frameworks (such as HTML, CSS, PHP, JS, MYSQL) to ensure a smooth experience [18]. The clear interface (frontend) is easy to navigate for everyone, regardless of technical skill. A powerful search function allows users to find specific items by category, keyword, or other filters. Beyond a simple interface, the website offers user-friendly features like clear instructions, progress indicators, and intuitive workflows.

Security is a top priority. The website utilizes robust measures to protect user information and transactions, including secure payment gateways and fraud detection algorithms. To further protect users, communication regarding listed items is facilitated through the platform itself, discouraging private contact details being exchanged. User profiles are optional, but the website offers the option to connect existing social media accounts for added convenience (subject to user privacy settings). User activity and usage patterns are tracked anonymously to understand user needs and continuously improve the platform. The website allows users to easily add, edit, and remove listings and manage their profiles. We have plans for future features beyond the initial borrowing, renting, and buying options, such as a recommendations system, a secure messaging system for communication within the platform, or an integrated delivery service.

System Architecture

Unified Platform Design

The architecture revolves around a centralized and cohesive design that integrates various functionalities into a single, unified platform. This ensures consistent and streamlined user experience.

Database Management

A well-organized and efficient database management system is implemented to store and retrieve information related to products, transactions, and user profiles. This supports quick and reliable data access for users (Figure 1).

RESULTS

The implementation of our web-based platform has resulted in a streamlined and efficient local leasing, selling and renting experience. Users benefit from a centralized hub, reducing search time and

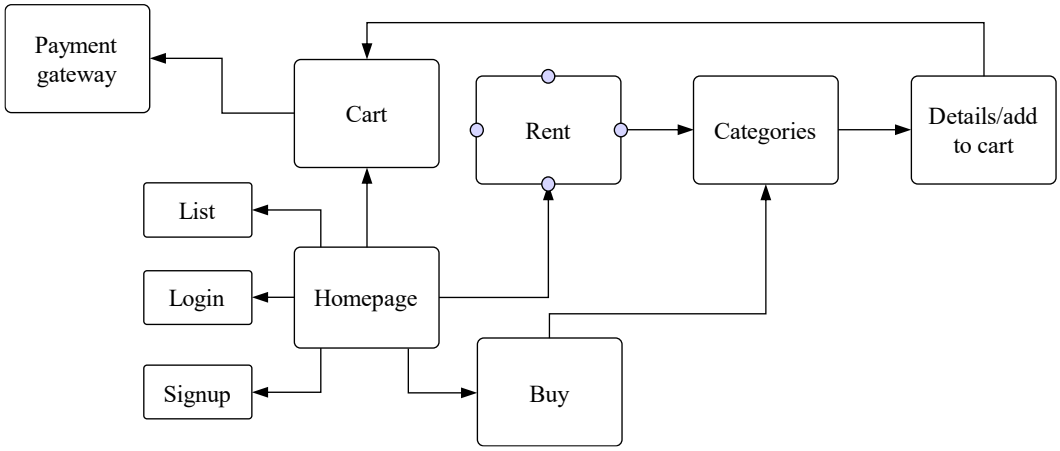

Figure 1. System structure.

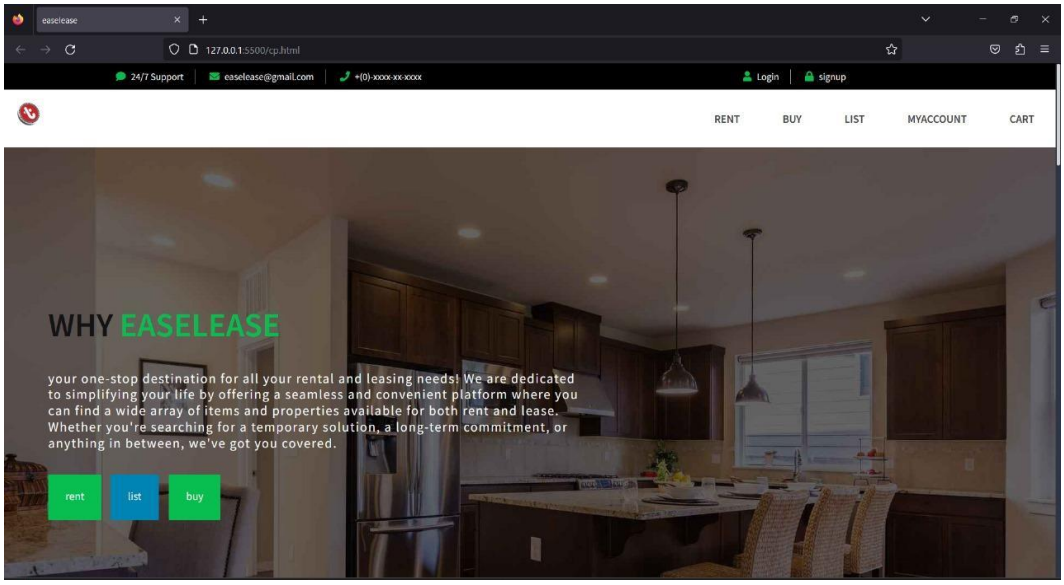

Figure 2. Home page.

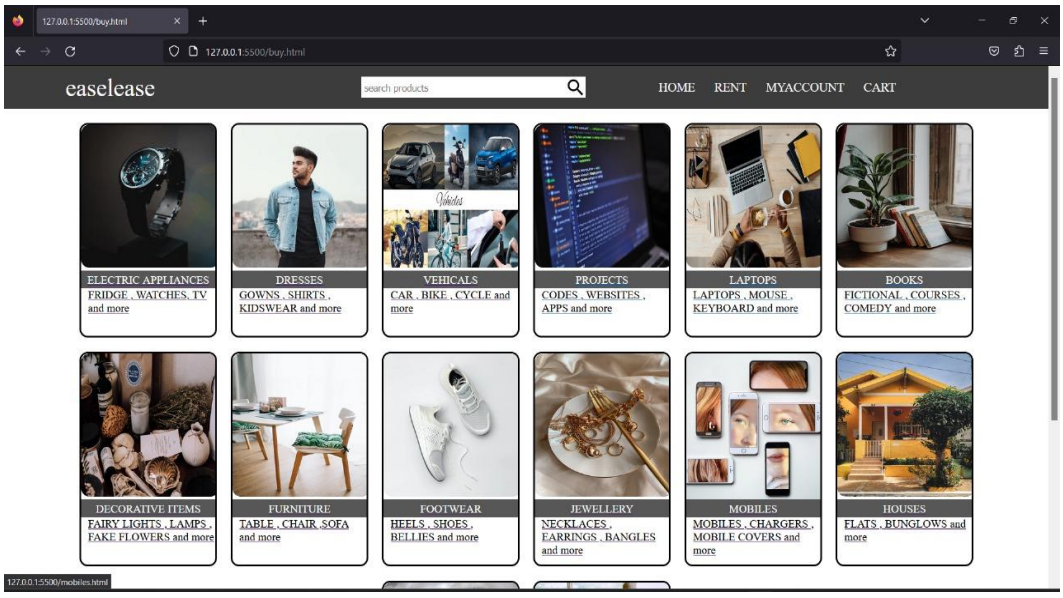

Figure 3. Category page.

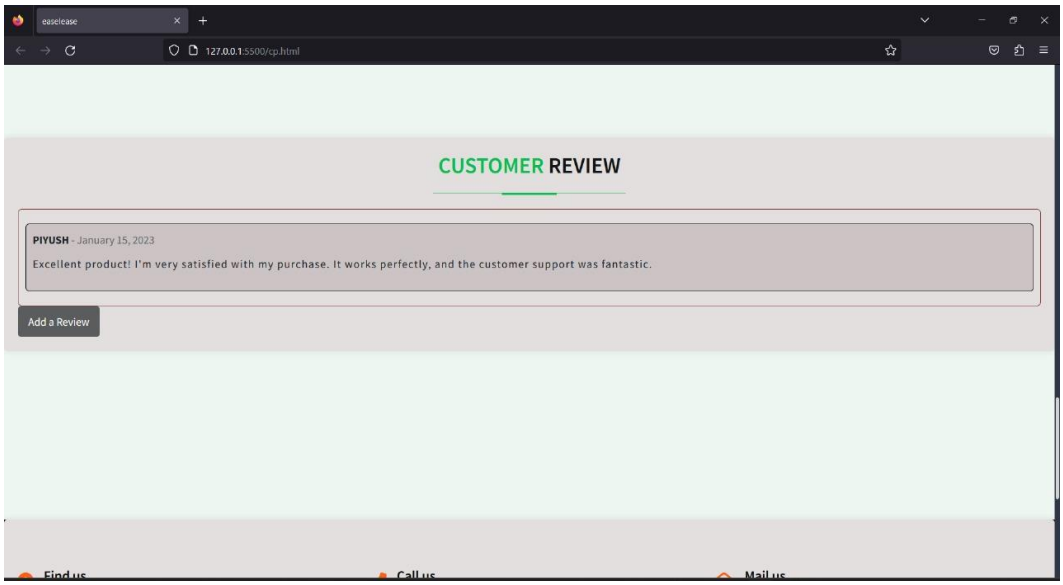

Figure 4. Customer review.

effort [19]. The user-friendly interface, secure transactions, and community features have garnered positive feedback, creating a more collaborative and trustworthy environment. Overall, our project has successfully addressed market challenges, offering a convenient and connected solution for daily utility management. Here are attached images: Figures 2–4 are home page of website, category page for renting and buying, and customer review page respectively.

CASE STUDY

Web-Based Rental Application for Both Leasing and Renting Daily Utilities

Our rental and leasing website was designed to address the basic temporary needs of the people to rent out, sell out or lease the things to save money, time and liability. To evaluate its effectiveness, we conducted a survey among students, collecting valuable insights into their experiences with our website.

User Experience

1. *Convenience:* As a bachelor student, user 1 needs things temporarily which is fulfilled by this website where he easily manages to rent out vehicle whenever he needs.
2. *Liability converting to asset:* As user 2 has a lot many liabilities which are not of her daily use, becoming liability, she lists these liabilities and earns money through this converting it to asset.
3. *Exploration for every new thing:* As user 3 loves to try every new thing and wants to try and never use again various products, user 4 rents out every new exciting thing and returns it after satisfaction.
4. *Easy selling of unwanted belongings:* As a user 5 easily manages to sell the belongings to the needed person, which is of no use currently to her and wants to clear it up by selling the item.

The case study implies that, the various categories of users can have the ease in day to day life by making the things easy by renting it out which saves the cost of buying it and after buying it maintaining it, and the class of users who have already purchased or invested in things which might not be in use currently can list it and earn money easily without putting any efforts in it [20]. Those who are left with the things which are not at all of use presently and in future can even sell them to needy people with the right value.

CONCLUSION

Our project is like a big step forward for all those who wanted an all in one yet convenient platform for renting, listing or buying the item. It helps fix the problem of using different websites for renting,

leasing, and buying things every day. With our easy-to-use website, we make it simpler for people to do transactions without the confusion of using different systems. Our goal is to create a central hub where local people can easily deal with renting, leasing, or selling things. Initial results indicate improved performance, enhanced efficiency and convenience. Our project is making daily life management easier and more community focused. It is a positive change for local businesses like tent house renters, vehicle renters and many more; it also contributes to creating a smoother and more connected community-driven system.

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