

**Enhancing Home Rental Services with Seamless Healthcare and
Transport Solution
BY**

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FINAL YEAR DESIGN PROJECT REPORT

This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Computer Science and Engineering

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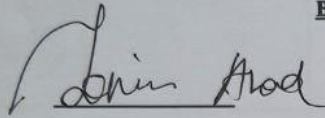
DHAKA, BANGLADESH

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APPROVAL

This Project titled "Enhancing Home Rental Services with Seamless Healthcare and Transportation Solutions", submitted by Redul Hossen and MD SIFAT ULLAH to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 14-07-2024.

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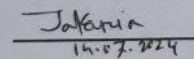
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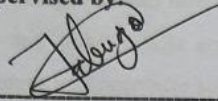
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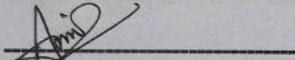
We hereby declare that this project has been done by us under the supervision of **Mohammad Jahangir Alam, Lecturer (Senior Scale) , Department of Computer Science and Engineering, Daffodil International University**. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

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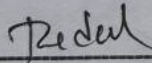
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ABSTRACT

The primary objective of this project is to bridge the gap between landlords seeking tenants and individuals searching for rental properties. By focusing on delivering a user-centric platform, this project aims to ensure efficiency, transparency, and convenience throughout the rental journey. The development of this web-based application involves the use of several programming languages. For frontend design, we employ Bootstrap 5 to create a responsive and visually appealing interface. On the backend, we utilize Django to handle data management and server-side operations, ensuring robust functionality and secure transactions. Our platform allows users to create secure accounts, manage their profiles, and communicate directly through built-in messaging features. This facilitates seamless interactions between landlords and tenants, fostering a sense of community and trust. Tenants can schedule property viewings, leave reviews, and make secure online payments through the platform, streamlining the entire rental process. Additionally, an admin dashboard is incorporated to facilitate efficient management of user accounts, property listings, and dispute resolution. This centralized control system ensures that all activities on the platform are monitored and managed effectively, enhancing the overall user experience. By promoting transparency, convenience, and trust, our platform aims to revolutionize the rental market. This report serves as comprehensive documentation of the project's development journey, encapsulating the knowledge and experiences garnered during the internship period. It also paves the way for future innovations in the rental domain, highlighting the potential for continuous improvement and expansion of the platform's capabilities. With a focus on user needs and technological advancements, this project sets a new standard for rental property management solutions.

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CHAPTER 1

Introduction

1.1 Overview (Web-based home rental project)

In today's dynamic housing market, finding the perfect place to call home can feel overwhelming. Our web-based platform is designed to streamline the rental process for both renters and landlords. Our user-friendly interface empowers renters to search a comprehensive database of listings, filter by specific criteria, and connect directly with landlords. Landlords benefit from a wider pool of potential tenants, efficient application management tools, and the ability to showcase their properties effectively. Home rental fosters a transparent and secure environment, prioritizing user privacy and clear communication. Join our growing community and experience a more stress-free approach to home rentals..

1.2 Background and Present State

The concept for our Django home rental service application was born out of a growing need for a user-friendly and efficient platform to connect tenants seeking suitable properties with landlords looking for qualified renters. Traditional rental markets often face limitations such as geographically restricted search capabilities, opaque pricing structures that can be difficult to navigate, and cumbersome application processes that can be time-consuming and frustrating for both parties.

Our home rental service application has addressed these challenges by providing a centralized platform that offers several key advantages:

- **Extensive Search Functionality:** Tenants can search for rental properties based on a wide range of criteria, including location, price range, property type and availability. This empowers them to find suitable rentals that meet their specific needs and preferences.

- **Transparent Listing Information:** Landlords can create detailed listings that showcase their properties' features and benefits. This level of transparency allows tenants to make informed decisions based on accurate and up-to-date information.
- **Streamlined Communication Channels:** Both tenants and landlords can leverage the platform's built-in communication features to connect directly, ask questions, and schedule viewings. This eliminates the need for time-consuming phone calls or email exchanges.

We are continuously working on improving features and functionalities based on valuable user feedback to further enhance the user experience and overall value proposition of the application.

1.3 Problem Statement

While the traditional rental market in urban areas faces limitations like limited search capabilities, opaque pricing structures, and cumbersome application processes, these challenges are likely even more pronounced in suburban areas like Savar. Here's how these limitations affect renters and landlords:

- **Limited Local Market Awareness:** Tenants in Savar struggle to find suitable properties due to a lack of centralized platforms or resources focused specifically on the suburban rental market. Reliance on word-of-mouth recommendations or local classifieds can restrict their options.
- **Information Asymmetry:** Landlords in Savar find it difficult to effectively reach a large pool of potential tenants due to limited marketing options. This can lead to longer vacancies and lost rental income.
- **Inefficient Communication and Application Processes:** Both tenants and landlords in Savar face challenges in connecting with each other and navigating cumbersome paperwork or communication channels common in traditional rental methods.

1.4 Objectives

The main goals of this Project are:

- ❖ **Make finding a rental faster:** Aim to cut the time it takes people to find a place to

live in half compared to traditional methods.

- ❖ **Get more places to rent listed:** Try to have thousands of rooms and houses available for rent on our website within a few months.
- ❖ **Keep people happy:** We will try to provide a user-friendly user experience throughout the website.
- ❖ **Help people find cheaper places:** Try to get landlords to offer slightly lower prices on our platform by making things easier for them.
- ❖ **Grow the renter community:** Aim to have a certain number of people using our platform by a specific date. We will focus on students at first.

All of these goals work together to provide a solid, user-friendly web-based platform that meets the demands of consumers, organizers, and system administrators while transforming the effectiveness and ease of trip administration.

1.5 Scope and Limitations

Our Django home rental service application has the potential to bridge these gaps and address the specific needs of the Savar suburban rental market by offering:

Increased Visibility: By providing a centralized platform for both tenants and landlords in Savar, our application can increase visibility of available rental properties and connect a wider pool of potential renters with interested landlords.

Enhanced Transparency: Our application can promote transparency by encouraging detailed and accurate listing information, allowing both tenants and landlords to make informed decisions. **Streamlined Communication and Processes:** Built-in communication features and potentially automated application workflows can facilitate efficient communication and document management, saving time and effort for both parties.

Many landlords are not familiar with using online platforms for listing their properties. This creates a barrier to reaching a wider pool of potential tenants. They rely heavily on traditional methods like word-of-mouth recommendations or local classifieds, which can restrict their reach and limit tenant options.

1.6 Report Organization

Our Web-based Home rental service entails organizing several parts to highlight the specifics of the project, its stages of development, its features, and its results. An outline for the report layout may be seen below:

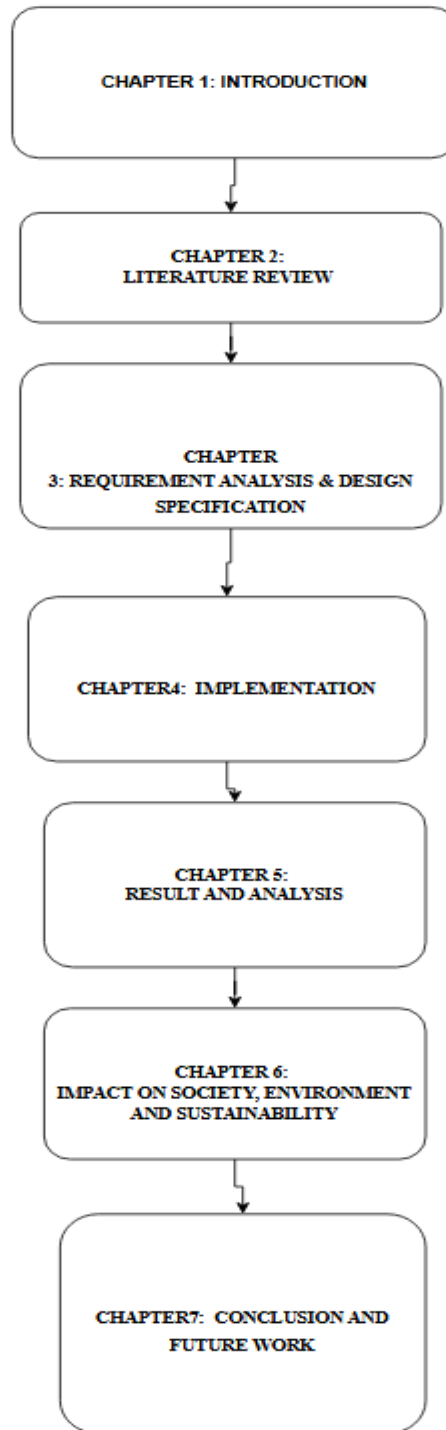


Figure 1.6.1: Report Layout of this Project

1.7 Summary

This report has explored the context and objectives of our Django home rental service application. We highlighted the challenges faced by the traditional rental market in suburban areas like Savar, particularly the limited reach and lack of online presence among many landlords. Our application presents a unique opportunity to bridge these gaps by offering increased visibility for rental properties, promoting transparency through detailed listings, and facilitating streamlined communication channels. By addressing the challenge of reaching offline landlords and providing a user-friendly platform, we aim to create a valuable tool that benefits both tenants and landlords in the Savar suburban rental market. The following chapters will delve deeper into user activity and rental listing performance, providing valuable insights to optimize the application and maximize its impact.

CHAPTER 2

LITERATURE REVIEW

2.1 Overview

The online rental market has experienced significant growth in recent years, driven by factors such as increased internet penetration and a growing demand for convenient and efficient housing solutions. This section briefly explores the evolution of online rental platforms and their impact on the housing market.

2.2 Related Works

We'll explore both international platforms and services specific to Bangladesh to gain a comprehensive understanding of the current landscape.

- **International Platforms:**
 - **Airbnb** (<https://www.airbnb.com/>):

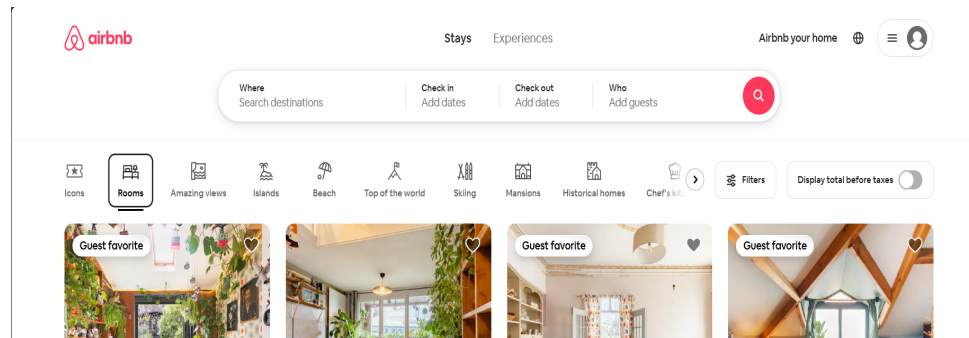


Figure 2.2.1 Airbnb landing page

This global platform allows users to list and book vacation rentals, apartments, and unique spaces. While not solely focused on long-term rentals, Airbnb offers valuable insights into user experience, search functionalities, and the sharing economy within the housing market(<https://www.airbnb.com/>).

Booking.com (<https://www.booking.com/>):

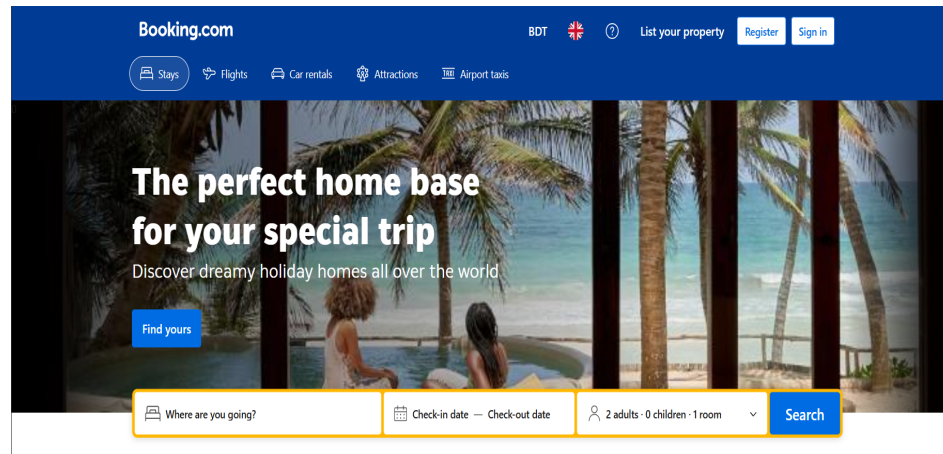


Figure 2.2.2 Booking landing page

Similar to Airbnb, Booking.com offers short-term rental options but also includes listings for serviced apartments and extended stays. Their platform can provide valuable benchmarks for user interface design and catering to travelers seeking temporary housing solutions (<https://www.booking.com/>).

- **Bangladesh-based Services:**

- **Bproperty** (<https://www.bproperty.com/>):

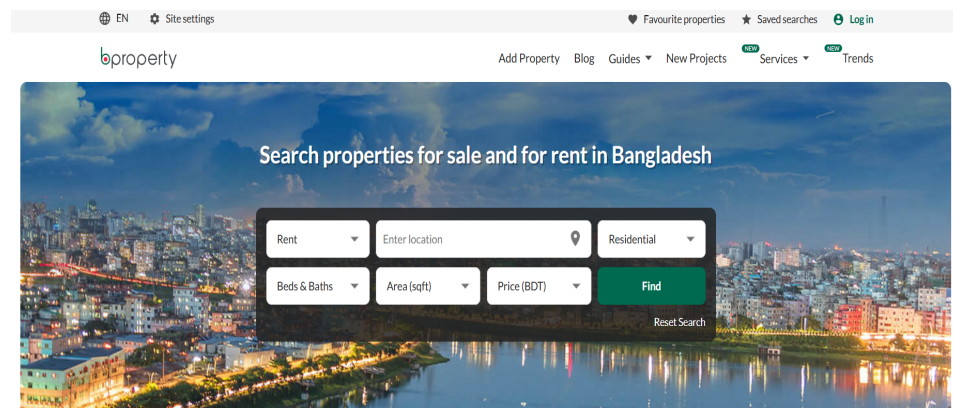


Figure 2.2.3 Bproperty landing page

A leading online real estate platform in Bangladesh, Bproperty offers listings for both residential and commercial properties. They cater to a broad audience of tenants, landlords, and investors. Analyze their platform's features, target audience, and how they address the specific needs of the Bangladeshi rental market(<https://www.bproperty.com/>).

- **BdTo-Let.Com** (<https://www.bdto-let.com/>):

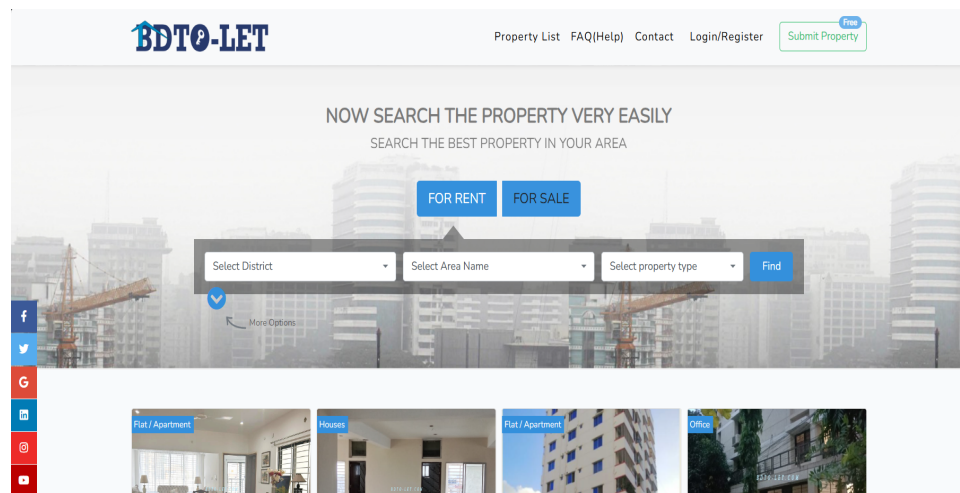


Figure 2.2.4 BdTo-Let landing page

This platform positions itself as the largest for house or commercial space rent or sell all over Bangladesh. Explore their functionalities, target audience, and how they approach connecting tenants and landlords in the Bangladesh market. Consider how their established presence might influence user behavior and potential competition for your application, particularly in terms of user base and geographical coverage(<https://www.bdto-let.com/>).

- **RENTS.com.bd**:(<https://rents.com.bd/>)

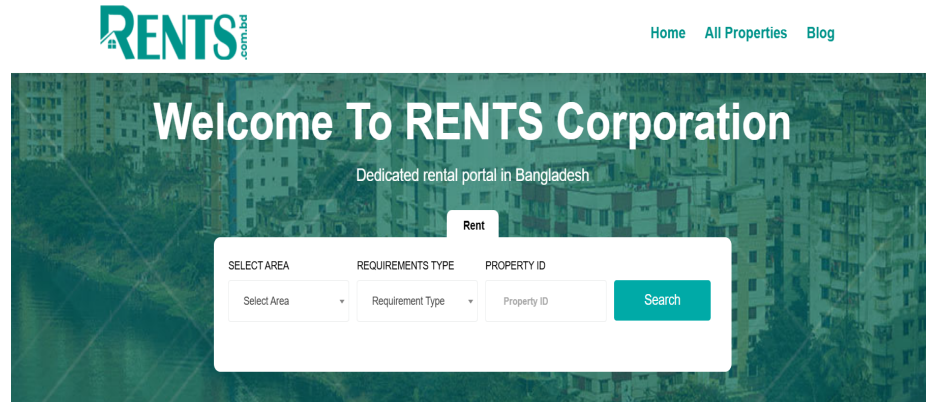


Figure 2.2.5 Rents landing page

This website offers services related to property rentals and sales in Bangladesh. But their service is limited to Dhaka only(<https://rents.com.bd/>).

2.3 Comparison between existing works

TABLE 1: COMPARISON BETWEEN EXISTING WORKS

Platform	Similarities	Differences	Insights for Our Application
Airbnb & Booking.com (https://www.booking.com/)(https://www.airbnb.com/)	- User-friendly interfaces - Advanced search functionalities - Cater to a broad audience seeking short-term rentals or serviced apartments	- Primary focus on tourism and temporary stays - Might not directly translate to long-term rentals in suburban areas like Savar	- Learn from their user experience design - Incorporate advanced search features - Explore offering functionalities for slightly longer-term

			lease options relevant to the Savar market
Bproperty(http://www.bproperty.com/)	- Offers listings for both residential and commercial properties. - Caters to a broad audience of tenants, landlords, and investors.	- Focus on target audience and needs of the Bangladesh market. - Primarily targets urban areas but explores if suburban listings relevant to Savar are included.	- Learn from their approach to property listings. - Adapt features to cater to the unique characteristics of suburban rentals in Savar. - Explore potential partnerships or collaborations to expand our reach.
BdTo-Let.Com (https://www.bdto-let.com/)	- Positions itself as the largest platform for renting and selling properties across Bangladesh, potentially including Savar. - Offers a service similar to ours, connecting tenants and landlords.	- Analyzing functionalities, target audience, and geographical coverage. - Understand user base demographics.	- Learn from their user acquisition strategies.

RentBd(https://rents.com.bd/)	- Provides listings for residential rentals in various areas.	- Focus more on urban and peri-urban areas - Specific functionalities and user experience may differ.	- Evaluate their rental listing approach. - Adapt features to serve the Savar market. - Assess their tenant-landlord connection methods.
Bikroy.com(www.bikroy.com)	- Extensive classifieds platform including property rentals. - Connects a wide audience with various rental options.	- Broader classifieds platform covering various categories beyond rentals. - Focus isn't as specialized on rental properties compared to dedicated platforms.	- Leverage their broad audience reach. - Consider integrating a classifieds approach for rental listings. - Focus on creating a specialized and user-friendly rental experience for the Savar market.
OLX Bangladesh(https://www.olx.i)	- Classifieds platform with	- General classifieds platform covering multiple categories.	- Learn from their wide reach and user base.

n/dhaka_g4404483)	property rental listings. - Connects landlords and tenants across Bangladesh.	- Less specialized in the rental market.	- Integrate classified elements for rental properties. - Ensure a tailored experience for rental users in the Savar area.
Bariwala.com(https://bariwala.com/)	- Focuses on rental properties across Bangladesh - Connects landlords and tenants directly.	- Have a specific focus on certain regions.	- Learn from their direct tenant-landlord connection approach. - Adapt features to cater to the suburban..

2.4 Open Issues

- **Limited Online Presence of Landlords:** Unlike urban areas, many landlords in Savar aren't familiar with or actively use online platforms to list their properties. This creates a barrier for tenants seeking rentals through online channels.
- **Digital Literacy Gap:** Landlords in Savar might have limited experience using online platforms, potentially hindering their ability to effectively list properties and manage communication with tenants.

- **Focus on Traditional Methods:** Landlords in Savar rely heavily on word-of-mouth recommendations or local classifieds, which can restrict tenant options and limit market visibility.
- **Lack of Awareness of Benefits:** Landlords might not fully understand the advantages of using online platforms, such as increased efficiency, wider reach, and potentially higher rental rates.

2.5 Summary

By analyzing existing online rental platforms and acknowledging the unique challenges of the Savar suburban rental market, we can identify opportunities for our Django home rental service application. While established platforms like Bproperty and BdTo-Let.Com offer insights into user behavior and competition, our application can address the critical issue of reaching offline landlords through localized outreach and a user-friendly interface. By overcoming the digital literacy gap and highlighting the platform's value proposition, our application can bridge the gap between tenants seeking rentals and landlords with properties in Saver's suburban area.

CHAPTER 3

REQUIREMENT ANALYSIS & DESIGN SPECIFICATION

3.1 Overview

This chapter outlines the methodology used to develop our Django home rental service application. We will discuss the system design, hardware and software requirements, project management approach, and financial considerations. We will also explore the user interface (UI) and user experience (UX) design principles that will be implemented to ensure a user-friendly and efficient platform for both tenants and landlords.

3.2 System Design

This use case diagram depicts the interactions between various actors (House Owner, Customer, Admin, and Staff) and the system, outlining key functionalities and processes. Below is a detailed description of each use case and its associated actors:

Actors:

- 1.House Owner:** Manages properties and interacts with the system for tasks related to their properties.
- 2.Customer:** Interacts with the system to reserve homes, provide feedback, and view relevant information.
- 3.Admin:** Oversees system operations, manages accounts, and maintains the system's integrity.
- 4.Staff:** Assists in managing system operations, handles specific tasks such as viewing payments and orders.

Use Cases:

1.Login:

- **Description:** Allows users to authenticate and access the system.
- **Actors:** House Owner, Customer, Admin, Staff.
- **Includes:** All actions require login.

5.View House:

-Description: Displays property details to customers.

-Actors: Customer.

6.Add Request:

-Description: Customers can add specific requests related to their booking.

-Actors: Customer.

7.View Booking Status:

-Description: Customers can check the status of their reservations.

-Actors: Customer.

8.View Response:

-Description: Customers can view responses to their requests or feedback.

-Actors: Customer.

9.View Blog:

-Description: Customers can read blog content.

-Actors: Customer, Admin, Staff.

10.Blog Comments:

-Description: Allows customers to comment on blog posts.

-Actors: Customer.

11.Medicine:

-Description: Customers can view and order medicines.

-Actors: Customer.

12.Add Medicine:

-Description: Admin can add new medicines to the list.

-Actors: Admin.

13.Checkout:

-Description: Process for customers to finalize their order.

-**Actors:** Admin.

14. Confirm Order:

-**Description:** Admin confirms customer orders.

-**Actors:** Admin.

15.View Request:

-**Description:** Admin can view requests made by customers.

-**Actors:** Admin.

16.Upload House:

-**Description:** House owners can upload new properties to the system.

-**Actors:** House Owner.

17.View Contract:

-**Description:** Admin and Staff can view property contracts.

-**Actors:** Admin, Staff.

18.Manage Account:

-**Description:** Admin manages user accounts.

-**Actors:** Admin.

19.Update,Create,Delete:

-**Description:** Admin and Staff can update, create, and delete various entries.

-**Actors:** Admin, Staff.

20.View Payment:

-**Description:** Staff can view payment details.

-**Actors:** Staff, Admin

21.View Total Order:

-**Description:** Staff can view a summary of all orders.

- **Actors:** Staff, Admin

This use case diagram and description provide a comprehensive view of the interactions and functionalities within the system, ensuring all user needs and system capabilities are clear.

Class Diagram:

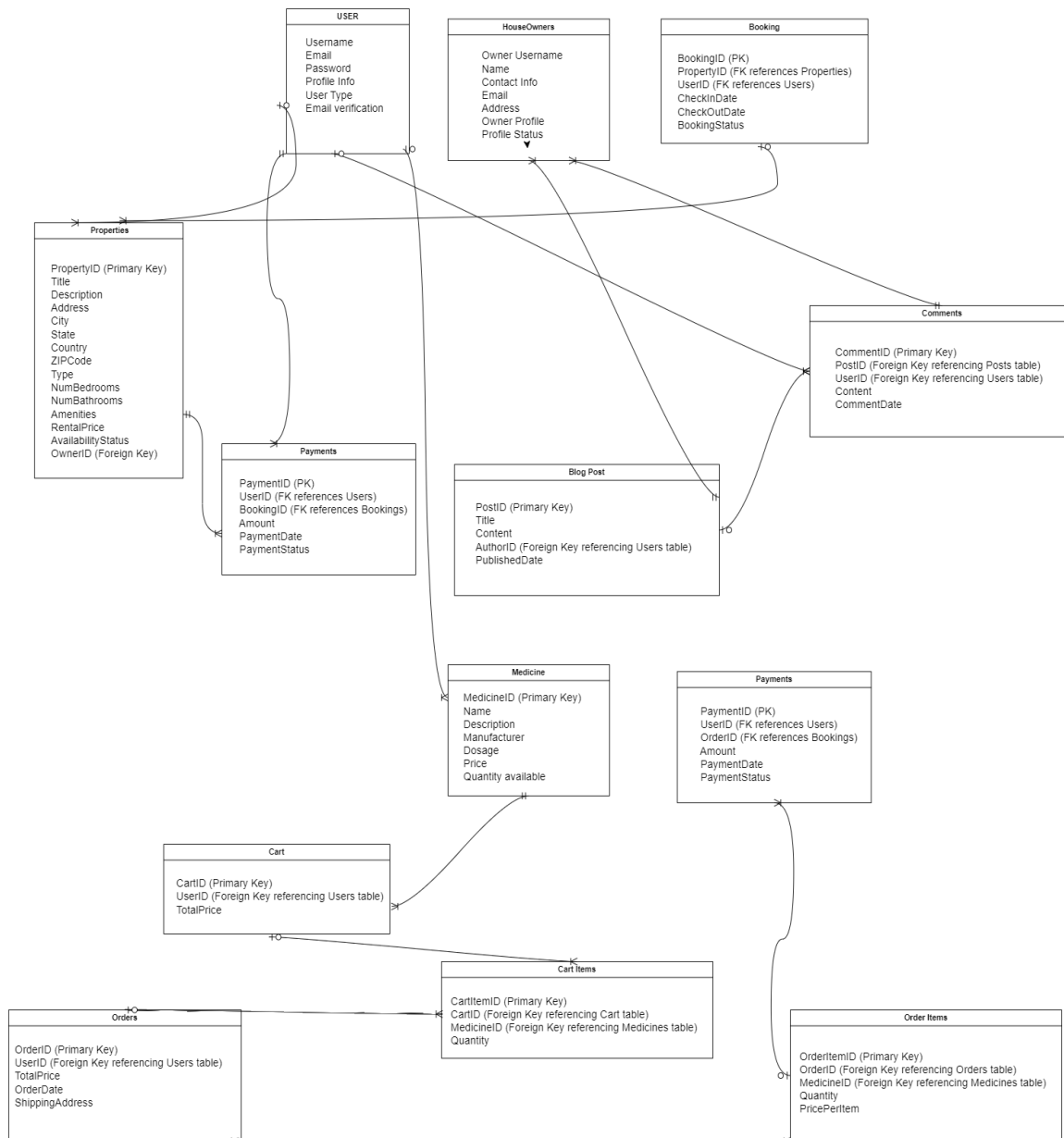


Figure 3.3.2: Class Diagram.

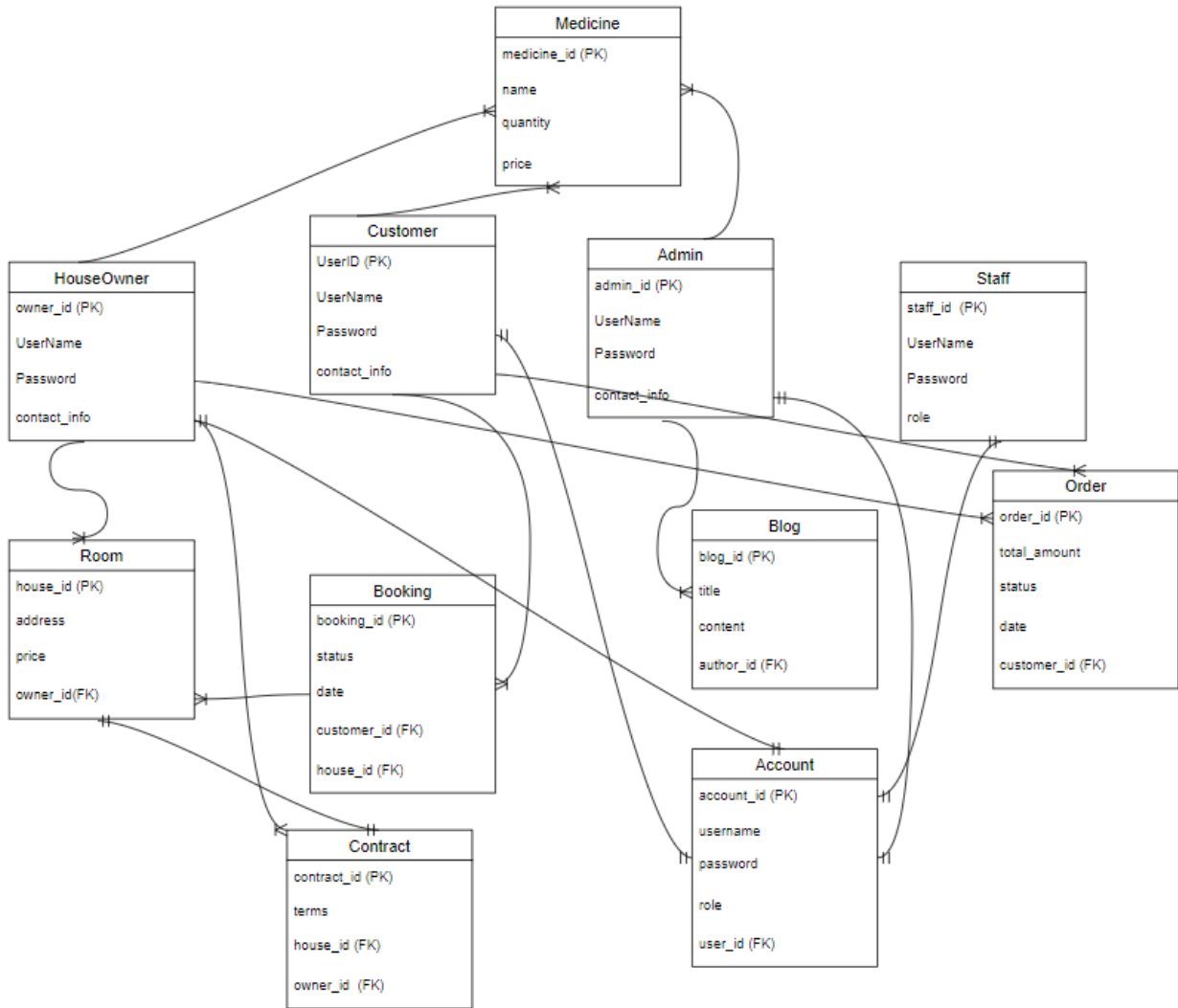


Figure 3.3.3: ER Diagram.

3.3 Hardware/ Software Requirement :

Hardware Requirements:

- **Development Machines:** Computers with a minimum of 8GB RAM, 250GB SSD, and dual-core processors.
- **Server:** A cloud-based server with at least 4GB RAM and 100GB SSD for hosting the application.

Software Requirements:

- **Development Environment:**
 - Operating System: Windows, macOS, or Linux
 - IDE: Visual Studio Code or PyCharm
 - Version Control: Git and GitHub
 - Virtual Environment: Python virtual environment (venv)
- **Back-end:**
 - Framework: Django
 - Language: Python
 - Database: PostgreSQL
 - Payment Gateway: Stripe
- **Front-end:**
 - HTML, CSS, JavaScript
 - Libraries: Bootstrap, jQuery
- **APIs:**
 - Google Maps API for location services

3.4 Project Management and Financial Analysis

Planning:

- Define project scope (features and functionalities).
- Create a development timeline with milestones.
- Identify resources needed (e.g., development time, budget).
- Assign tasks and responsibilities to team members (if applicable).

Execution:

- Track progress towards milestones and deadlines.
- Manage communication and collaboration between developers and designers.
- Address any roadblocks or challenges encountered during development.

Monitoring and Control:

- Monitor website performance and user feedback.
- Implement bug fixes and website improvements based on feedback.
- Track project budget and adjust resource allocation if needed.

Project Management: The project follows Agile methodology, allowing for iterative development and continuous feedback. Key tools and practices include:

- **Scrum Framework:** Sprints, daily stand-ups, sprint planning, and retrospectives.
- **Task Management:** Trello for tracking tasks and progress.
- **Communication:** Slack or Microsoft Teams for team collaboration.

Financial management tools: Consider using budgeting and accounting software to track expenses and income.

Resource allocation: Balance development time with available resources to stay within budget.

Flexibility: Be prepared to adapt your plans based on unforeseen challenges or opportunities.

Finance:

- **Budgeting:**
 - Estimate development costs (e.g., Django and Bootstrap licenses, hosting fees).
 - Factor in ongoing costs (e.g., maintenance, potential server upgrades).
 - Consider potential revenue streams (e.g., premium listings, subscription model).
- **Financial Reporting:**
 - We will report that track project budget and resource allocation.
 - Create reports to analyze and justify potential revenue streams.

Budget Allocation:

- **Development Costs:** Salaries for developers, designers, and testers.
- **Infrastructure Costs:** Cloud hosting, domain registration, and SSL certificates.
- **Third-party Services:** Costs for using APIs and payment gateways.

- Marketing Costs: Initial advertising and promotion expenses.

Cost Estimation:

TABLE 3.4.1: COST ESTIMATION

Category	Description	Estimated Cost (BDT)
Salaries	Developer, Designer, Tester	2,000,000
Cloud Hosting	Server and storage costs	300,000 annually
Domain Registration	Domain name registration	10,000 annually
SSL Certificates	Security certificates	20,000 annually
APIs	Google Maps API, other third-party APIs	50,000 annually
Payment Gateway	SSL fees	150,000 annually
Office Supplies	General office supplies and utilities	50,000 annually

Contingency	Unexpected expenses	100,000
Marketing Costs	Social media marketing campaigns Online ads, promotions	300,000
Total Estimated Cost		3,230,000

Maintaining a Thriving Platform

To ensure the website's ongoing functionality and security, we have factored in recurring costs such as hosting fees, domain name renewals. Additionally, we have allocated resources for potential future maintenance services to address any bug fixes or website updates as needed.

By effectively managing the development process and financial resources, we have successfully built a robust and user-friendly home rental website poised to streamline the rental experience for both renters and landlords.

3.5 Summary

This chapter provided an in-depth look at the methodology, system design, hardware and software requirements, and project management strategies for the Django-based home rental web application. It also outlined the financial analysis, including budget allocation and cost estimation, setting the stage for the implementation.

CHAPTER 4

IMPLEMENTATION

4.1 Overview

This chapter details the implementation phase of our Django home rental service project. It covers the process of designing and developing the prototype, training the model, and testing the system. The chapter concludes with a summary highlighting the key aspects and successes of our implementation.

4.2 Prototype Design

During this phase, we focused on designing a robust prototype for our home rental service. Key components of the design included:

- **User Authentication:** Implementing a secure and efficient login and registration system using Django's built-in authentication framework.
- **Property Listings:** Creating a user-friendly interface for property owners to list their rentals, including detailed descriptions, photos, and pricing.
- **Booking Management:** Developing a booking system that allows users to view availability, make reservations, and manage bookings.
- **Payment Processing:** Integrating a reliable payment gateway (ssl commerz) to handle transactions securely.
- **Search and Filtering:** Implementing search functionality with filters to help users find properties that meet their criteria.

The prototype design focused on ensuring a seamless user experience and a scalable architecture.

Here is some of example:

Landing page: Landing page for a Home Rental Service application serves as the initial point of contact for visitors. It typically includes key elements such as a clear branding message, navigation links, a prominent call-to-action (CTA) inviting users to explore listings or sign up, and highlights of key features such as easy property search, saving favorites, and direct

communication with landlords. The page aims to engage users quickly by presenting essential information about the service and encouraging them to take further actions, such as searching for rental properties or registering on the platform.

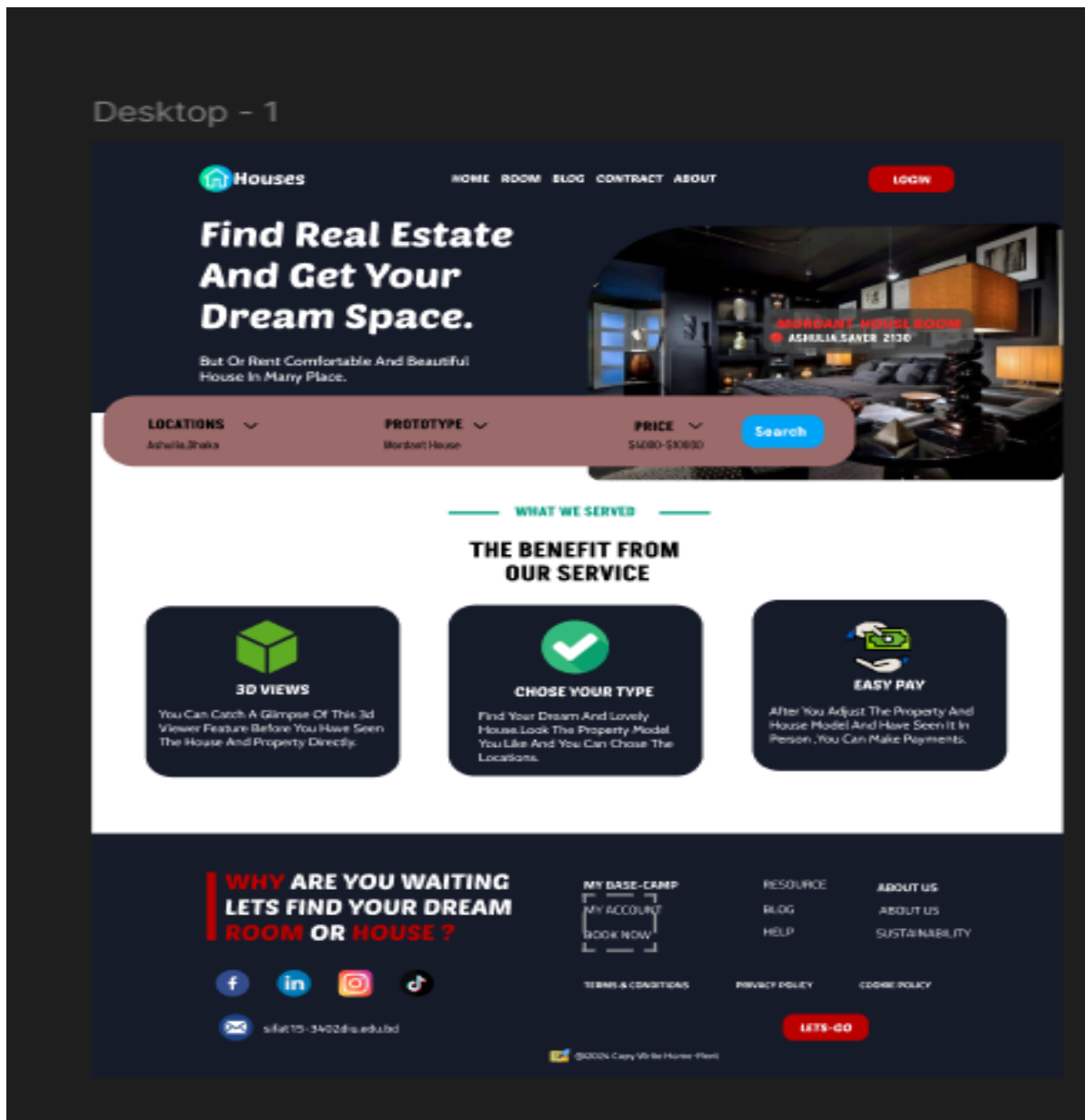


Figure:4.2.1 Landing page

Category select: The Category Select page for the Home Rental Service application is designed to help users narrow down their property search by selecting specific categories that match their needs. The page features a straightforward and visually appealing layout, presenting various property categories such as apartments, houses, studios, and shared accommodations. Each category is represented by an icon or image and accompanied by a brief description to aid users in making an informed choice.

Users can easily click on their desired category, which will then filter the available listings accordingly. The page also includes a search bar at the top for users who prefer to enter specific keywords or criteria. Additionally, there are filter options such as price range, number of bedrooms, location, and amenities, allowing for further refinement of the search results.

To enhance user experience, the page offers a responsive design, ensuring compatibility with different devices and screen sizes. Clear navigation links to other parts of the site, such as the home page, login page, and registration page, are provided for easy access. The overall goal of the Category Select page is to streamline the search process, making it simple and efficient for users to find properties that meet their specific requirements.

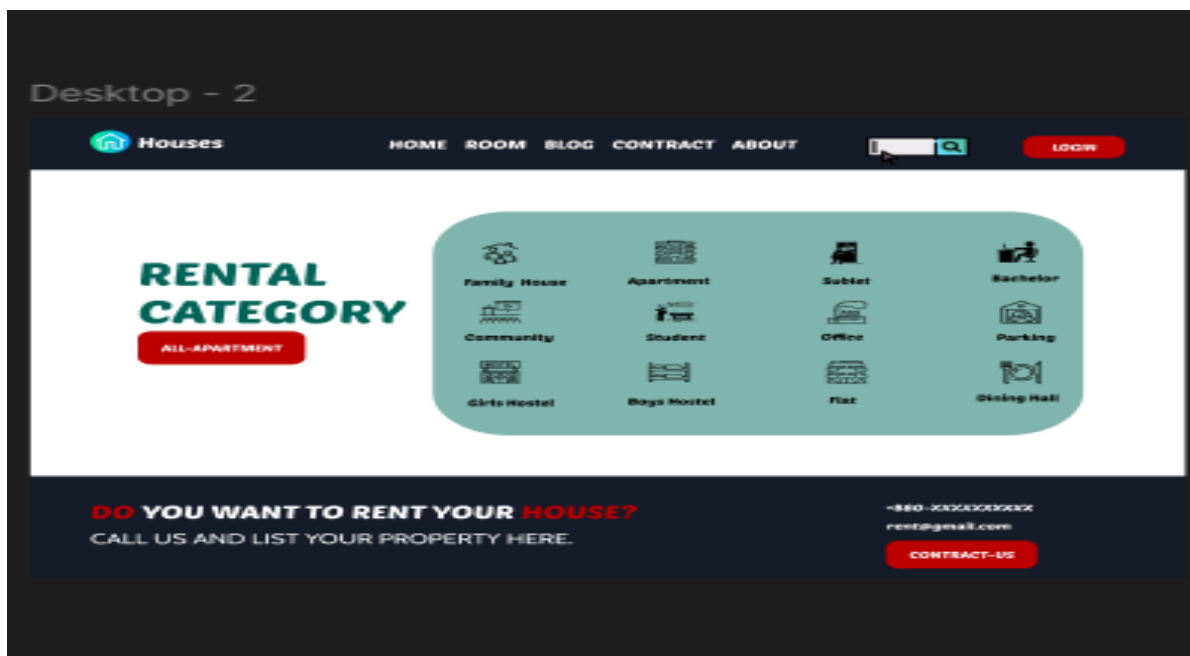


Figure:4.2.2 Category select page

Search result: The Search Result page for the Home Rental Service application is designed to present users with relevant property listings based on their search criteria. It features a clean and organized layout, displaying a list of properties with key details such as images, rental price, location, and a brief description. Users can filter results by various parameters, including price range, number of bedrooms, amenities, and property type, to refine their search further. Each listing includes a "View Details" button that redirects to a detailed property page. The page also incorporates a map view option, allowing users to see the geographical distribution of available properties. Additional features include pagination for easy navigation through results, a sorting option to arrange listings by relevance, price, or newest listings, and a search bar to modify the search query directly from the results page. This user-friendly design ensures an efficient and pleasant browsing experience, helping users find the perfect rental property quickly and easily.

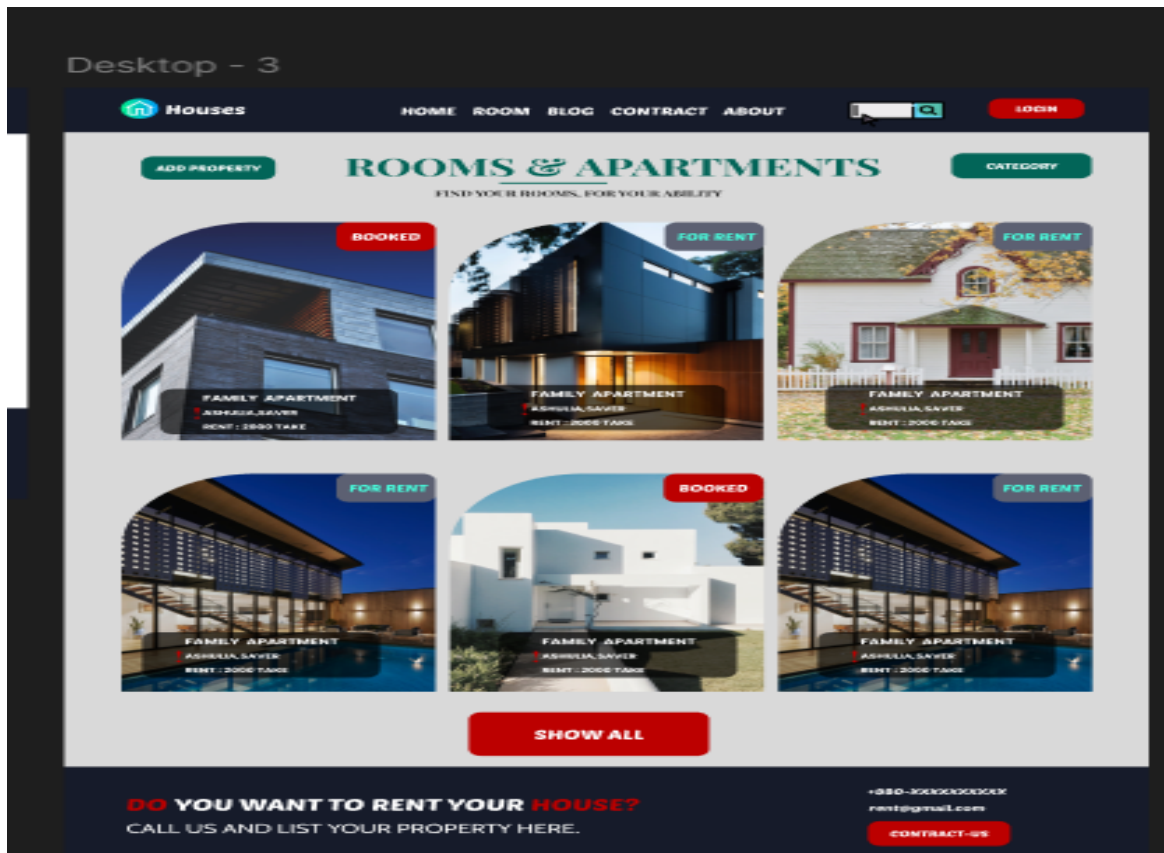


Figure:4.2.3 Search result page

Login Page: The Login page for the Home Rental Service application is crafted to offer users a quick and secure way to access their accounts. It includes input fields for the user's email address and password, along with a prominent "Login" button to submit the credentials. The page features a clean and intuitive layout, ensuring a hassle-free user experience. To enhance security, the login process incorporates measures such as encrypted password handling and CAPTCHA verification to prevent automated attacks. Additionally, the page provides links for users to reset their forgotten passwords and to navigate to the registration page for new users. Clear instructions and validation messages guide users, ensuring a smooth and efficient login experience while maintaining a high level of security and user satisfaction.

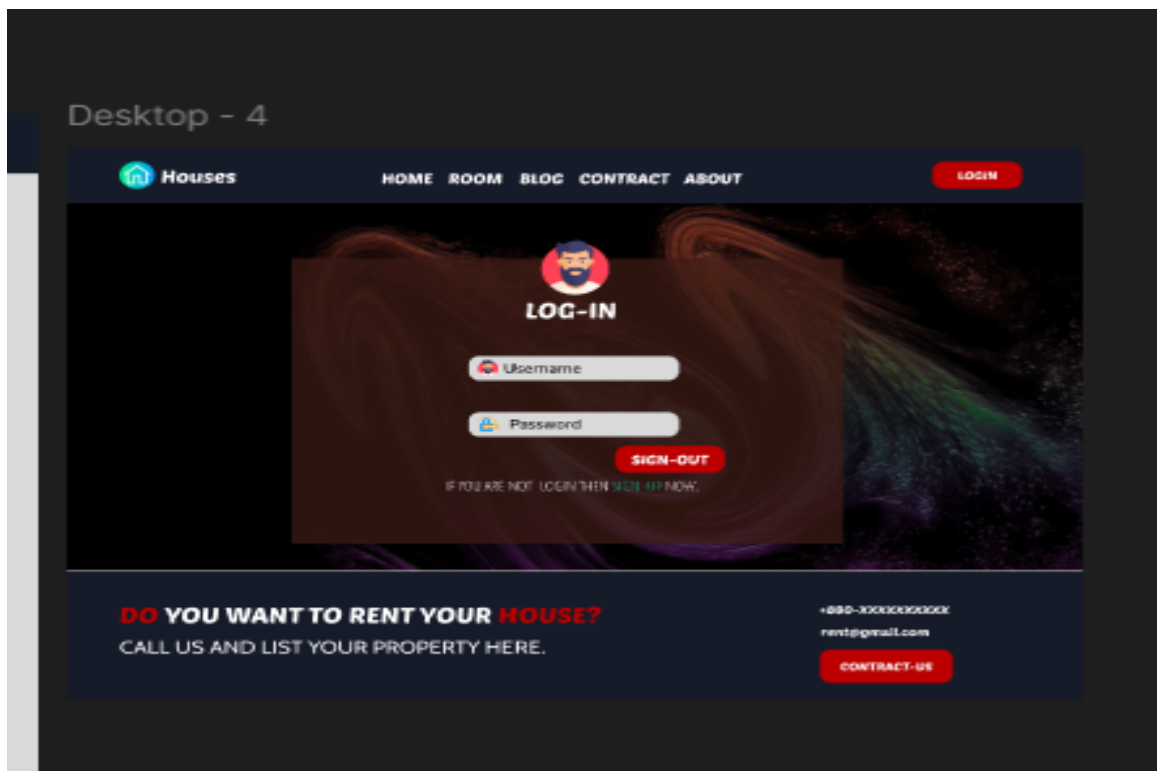


Figure:4.2.4 Login page

Register page: The Register page for the Home Rental Service application is designed to provide a seamless and secure user registration experience. This page includes essential fields such as full name, email address, password, and confirm password, ensuring users can easily create an account. Additionally, the page features a user-friendly interface with clear labels and input validation to guide users through the registration process. Security measures such as password strength indicators and CAPTCHA verification are incorporated to protect against automated sign-ups. A prominent "Register" button submits the form, while links to the login page and terms of service are conveniently provided for easy navigation. The overall design aims to offer a straightforward and efficient registration process, enhancing user engagement and onboarding.

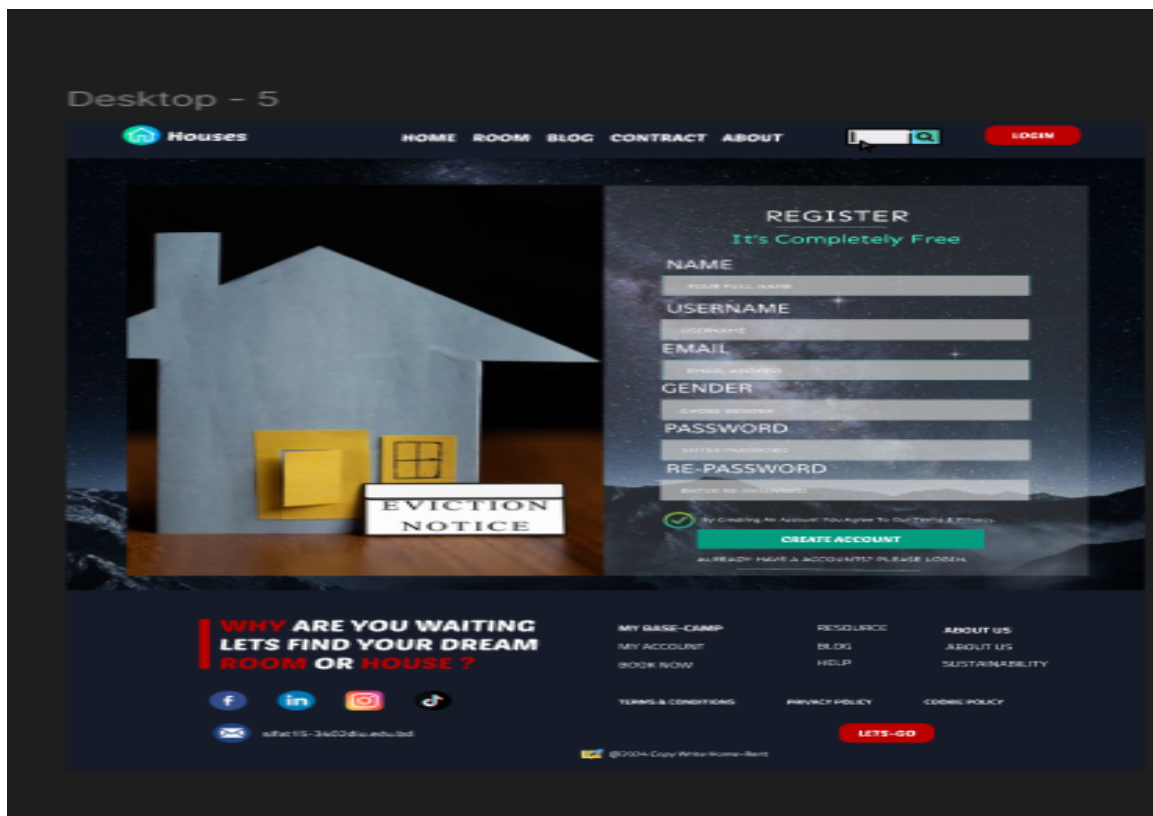


Figure:4.2.5 Register page

Forgot password: The Forgot Password page allows users who have forgotten their password to reset it securely. This page is designed to be simple and user-friendly, guiding users through the process of recovering access to their account.

- **Success Message:** Notification indicating that a password reset link has been sent to the provided email address.
- **Error Message:** Notification if the email address is not found or if there is an issue with sending the reset link.
- **Captcha:** Optional CAPTCHA to prevent automated abuse of the password reset functionality.
- **Back to Login:** Link to navigate back to the login page.

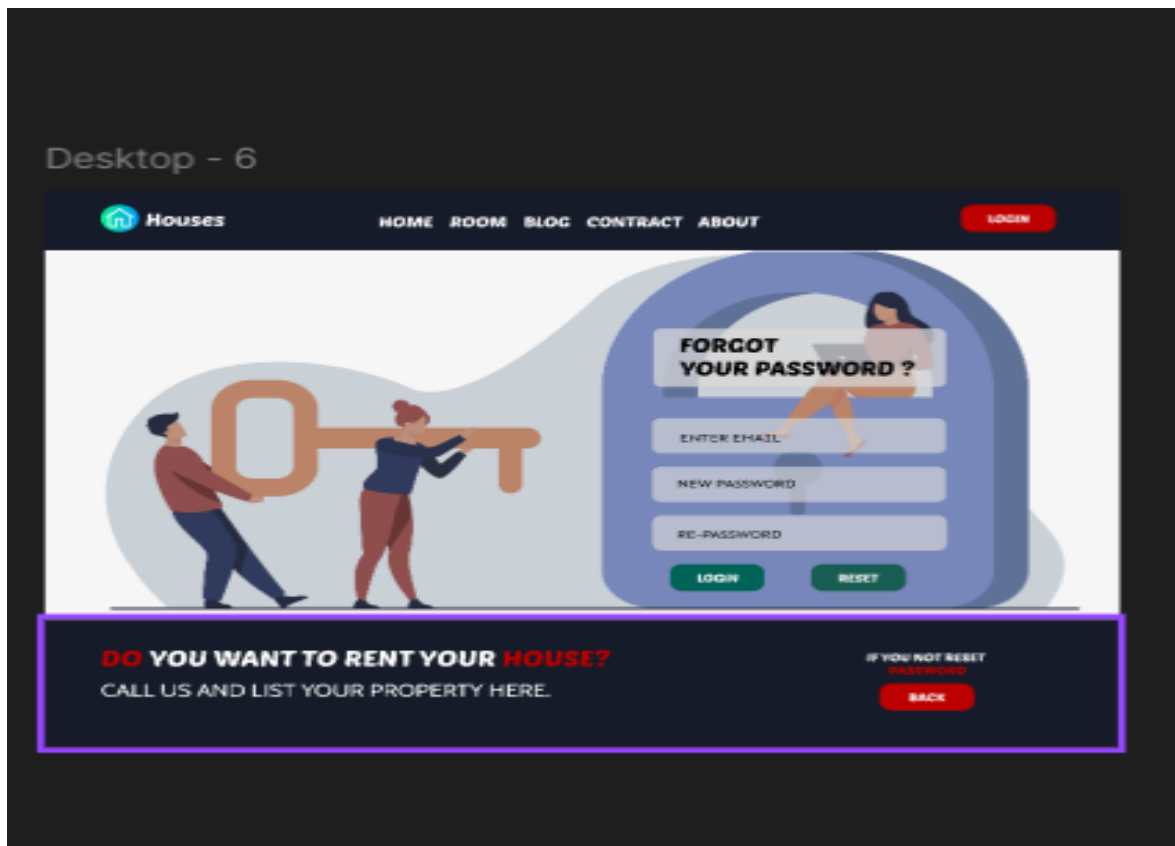


Figure:4.2.6 Forgot password page

Add room: The Room Details page provides users with comprehensive information about a specific rental property, focusing on individual rooms available for rent within the property. This page aims to present all the necessary details to help users make an informed decision about renting the room. Below are the key components and features of the Room Details page.

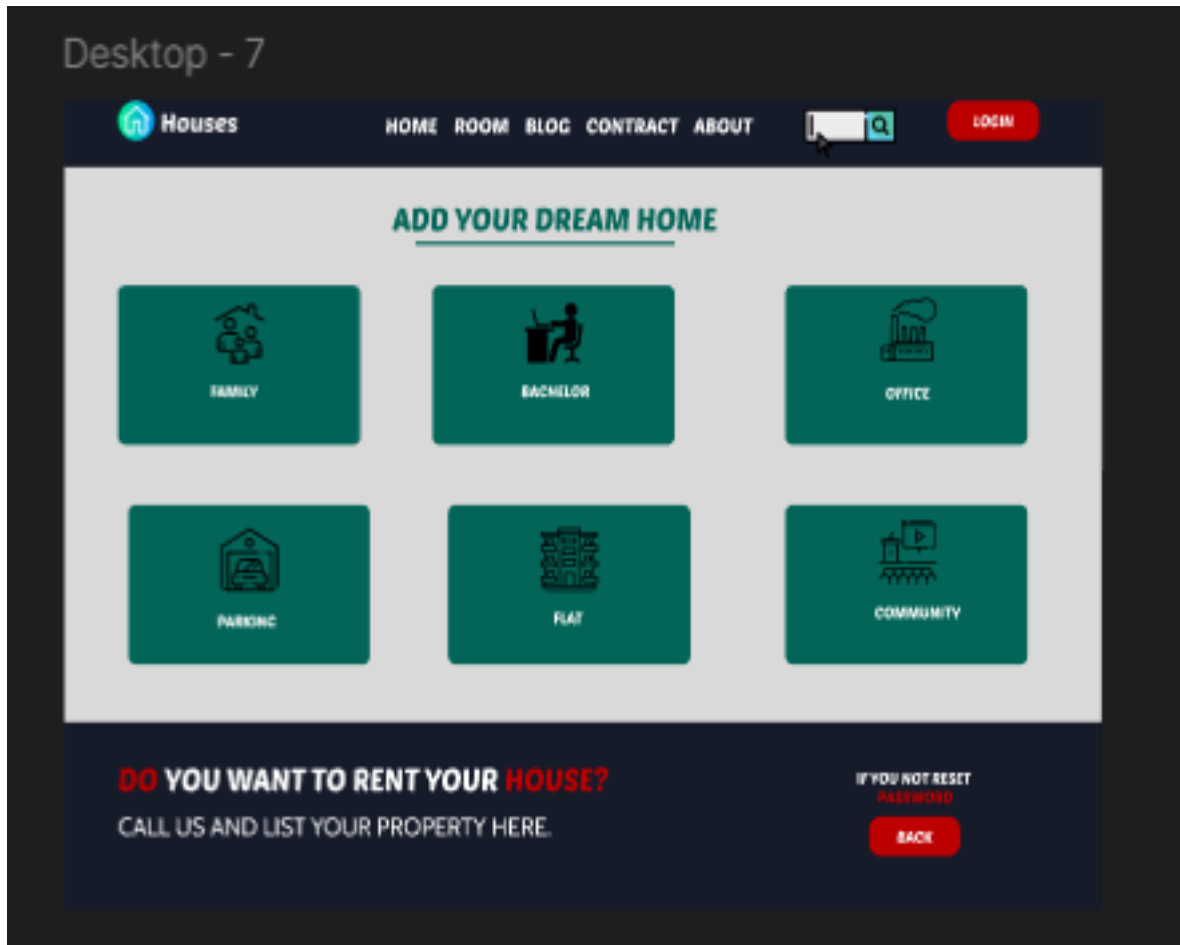


Figure:4.2.7 Add room page

Room Details page: The Room Details page is designed to provide users with comprehensive information about a specific rental property. This page aims to present all the necessary details to help users make an informed decision about renting the property. Below are the key components and features of the Room Details page.

Desktop - 9


[HOME](#)
[ROOM](#)
[BLOG](#)
[CONTRACT](#)
[ABOUT](#)

[LOGIN](#)

HOUSE

MORE DETAILS ABOUT APARTMENT








BOOK THIS APARTMENT

NAME

ENTER YOUR NAME

PHONE NUMBERS

ENTER YOUR NUMBER

ADDRESS

ENTER YOUR ADDRESS

EMAIL

ENTER YOUR EMAIL

IMAGE OF RENTER

SELECT IMAGE

IMAGE OF MID

SELECT IMAGE

MEMBERS

2

ANYTHING SAY

BOOK

FAMILY APARTMENT

RENT/MONTH: \$550

3000 SQ.-FT., 3 BEDROOM, SEMI-FURNISHED, LUXURIOUS, SOUTH FACING APARTMENT FOR RENT IN RANGS MALANCHA, MELBOURNE.

PRICE DETAILS-

- RENT/MONTH: \$550 (NEGOTIABLE)
- SERVICE CHARGE : 8,000/- TK PER MONTH, SUBJECT TO CHANGE
- SECURITY DEPOSIT : 3 MONTH'S RENT
- FLAT RELEASE POLICY : 3 MONTHS EARLIER NOTICE REQUIRED



FLAT SIZE: 3000 SQ FEET.

FLOOR: 1AS (5TH FLOOR) (6 STORED BUILDING) (SOUTH FACING UNIT)

ROOM CATEGORY :

3 LARGE BED ROOMS WITH 3 VERANDAS, SPACIOUS DRAWING, DINING & FAMILY LIVING ROOM, HIGHLY DECORATED KITCHEN WITH STORE ROOM AND SERVAINT ROOM WITH ATTACHED TOILET.

ADDITIONAL FACILITIES :

A. ELECTRICITY WITH FULL GENERATOR LOAD, B. CENTRAL GAS GEYSER, C. 2 CAR PARKING WITH 1 DRIVER'S ACCOMMODATION, D. COMMUNITY CONFERENCE HALL, E. ROOF TOP BEAUTIFIED GARDEN AND GRASSY GROUND, F. CLOTH HANGING FACILITY WITH CC CAMERA.

WHY ARE YOU WAITING

MY BASE-CAMP

RESOURCE

ABOUT US

Figure:4.2.8 Room Details page

Cart: The Cart Item page is a crucial part of the home rental service application, allowing users to review and manage their selected rental properties before proceeding to booking or checkout. Below is a detailed description of the key components and features of the Cart Item page.

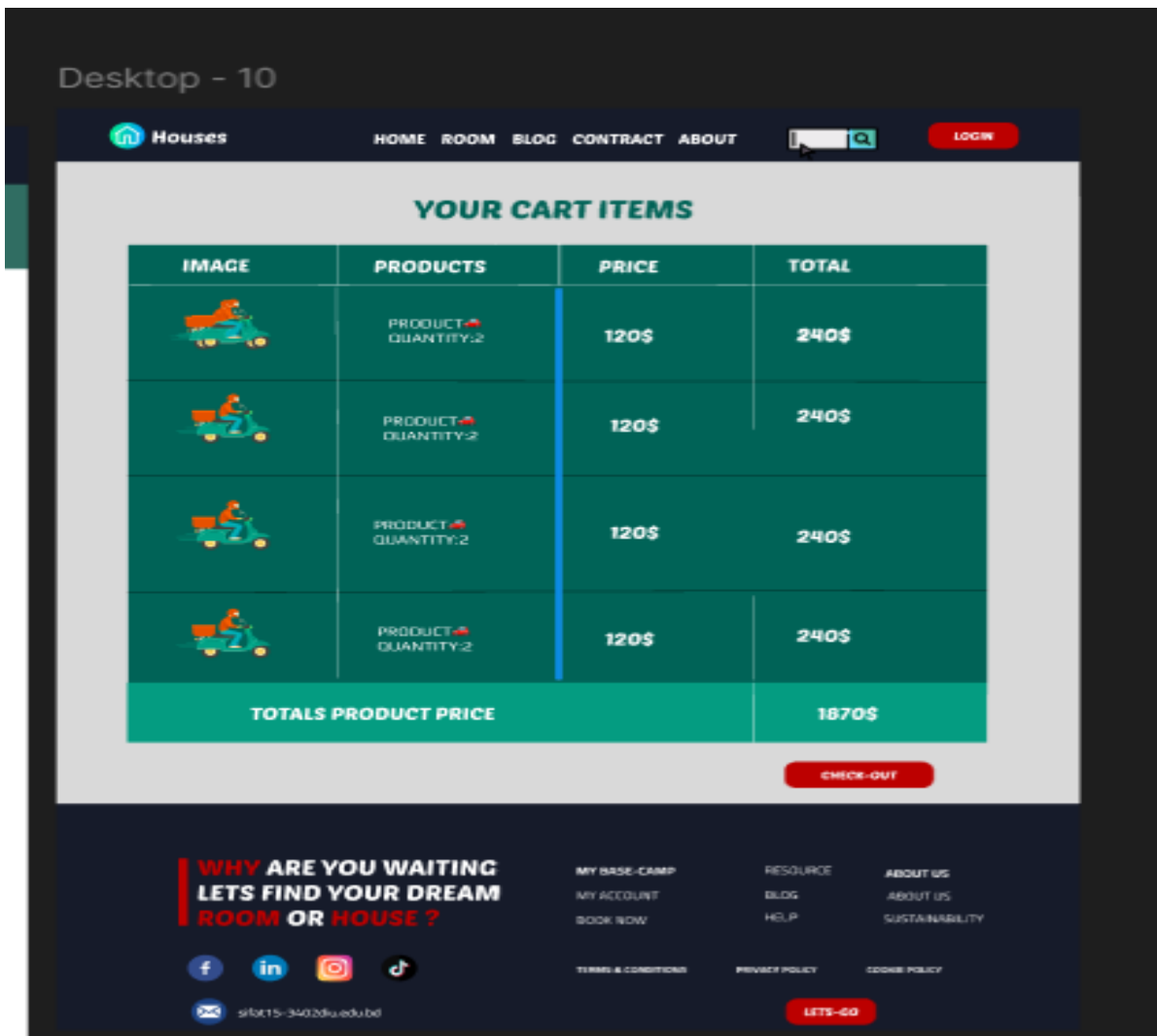


Figure:4.2.9 Cart Item page

4.3 System Testing

Testing is a critical component of software development, ensuring that the application's functionality meets the required specifications and operates correctly under various conditions. For my final defense project, I focused on validating key functionalities within the Security,Ecommerce module of a Django application. This involved testing user registration, password reset, and other user-related operations.Here use for testing automated testing using selenium.

Objectives

The primary objectives of the testing phase were:

1. To verify that new users can register successfully.
2. To ensure that users can reset their passwords using the forgot password feature.
3. To ensure that the ecommerce site and their add to cart,checkout,add product is working.
4. To confirm the overall stability and reliability of user operations in the application.

Test Environment

- **Operating System:** Windows
- **Web Framework:** Django
- **Database:** SQLite (test database)
- **Test Framework:** Django's built-in test framework
- **Test method** :automated testing
- **Tools:**selenium

Test Cases and Results

Table 4 The test cases, their purposes, steps, expected outcomes, results, and execution details

Test Case Name	Purpose	Steps	Expected Outcome	Result	Execution Time
RegistrationTestCase. test_user_registration	To validate that the user registration process works correctly.	1. Submit a POST request to the registration endpoint with user details. 2. Check the response status code to ensure it redirects to the login page. 3. Verify that the new user exists in the User model. 4. Verify that the user's profile exists in the UserProfile model.	The response status code is 302, and the new user and their profile are successfully created in the database.	Passed	1.774 seconds

PasswordResetTestCase.test_password_reset	To ensure the password reset functionality works as intended.	1. Submit a POST request to the password reset endpoint with the username, email, and new password. 2. Check the response status code to ensure it redirects to the login page. 3. Verify that the user's password has been updated in the User model.	The response status code is 302, and the user's password is successfully updated in the database.	Passed	3.020 seconds
cartTestCase.test_cart	Ensure the product add in cart and also its show in cart dataset also	1. After click add to cart button product add in cart 2. After clicking remove to the cart section product remove from cart.	The response status code is 302	Passed	1.776 seconds
medicineTestCase.test_medicine	Ensure medicine upload in database also its show in database after medicine add it's also add in cart and checkout	1. After filling up forms after click update the all from file check and upload in database. 2. After uploading it we can add it in the	The response status code is 302	Passed	1.774 seconds

		cart and also checkout . 3.Also add the category of medicine			
homeTestCase.test_home	Ensure room upload in database also its show in database.after room add it's also booking by user.Woner can show their House.	1..After filling up forms after click update the all from file check and upload in database. 2.Also add the category of House. 3.Also booking House or room.	The response status code is 302	Passed	4.333 seconds

Execution and Results:

Total Tests Run	Total Passed	Total Failed	Execution Time(Total)
3	3	0	3.020 seconds
1	1	0	0.02 seconds
4	4	0	1.744 seconds

Speed testing:

It's used to measure the total project running time and also how many pages give best performance and how many pages give low performance. Here use Google extensions and lighthouse recorder to test performance.

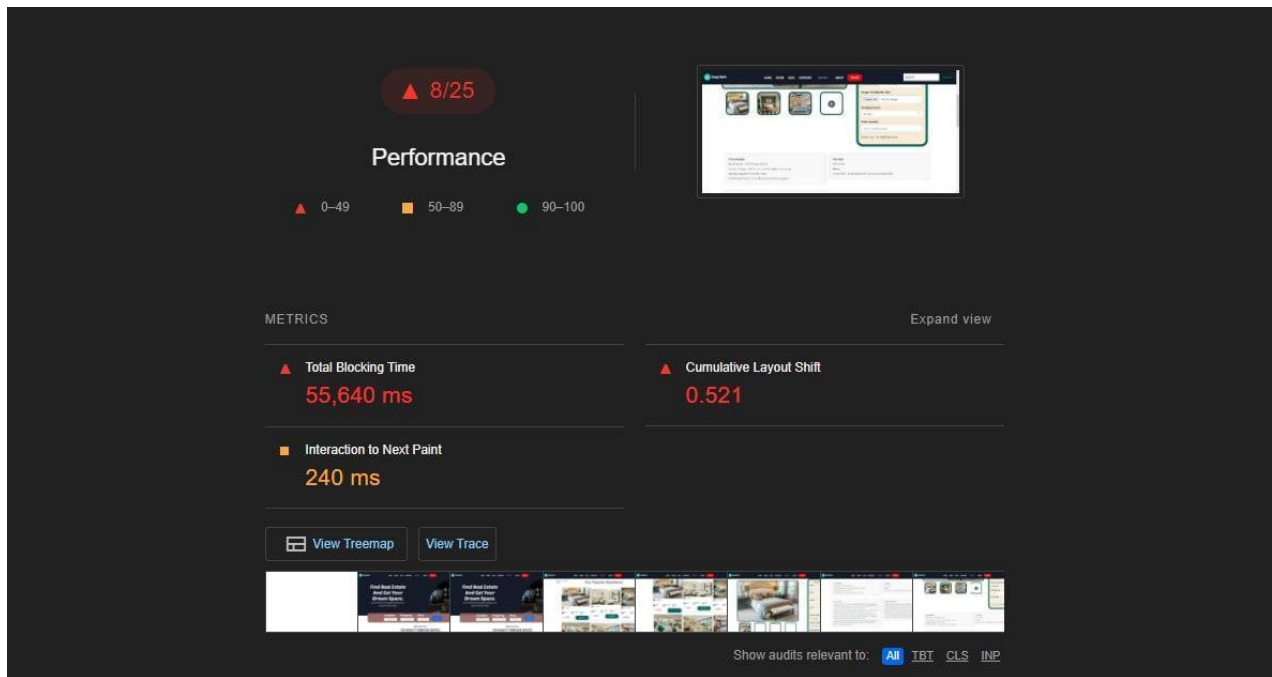


Figure 4.3.1: Performance Overview

Performance Score: 8/25 and 4th time testing comes 14/25, indicating average performance. The change basically happened because of internet problem. When internet speed is good, it gives more good performance.

Key Metrics:

- **Total Blocking Time:** 55,640 ms. This is the amount of time the main thread was blocked, preventing the browser from responding to user input.
- **Cumulative Layout Shift (CLS):** 0.521. This metric measures visual stability; a higher number indicates more unexpected layout shifts.
- **Interaction to Next Paint (INP):** 240 ms. This measures the time from user interaction to the next paint.

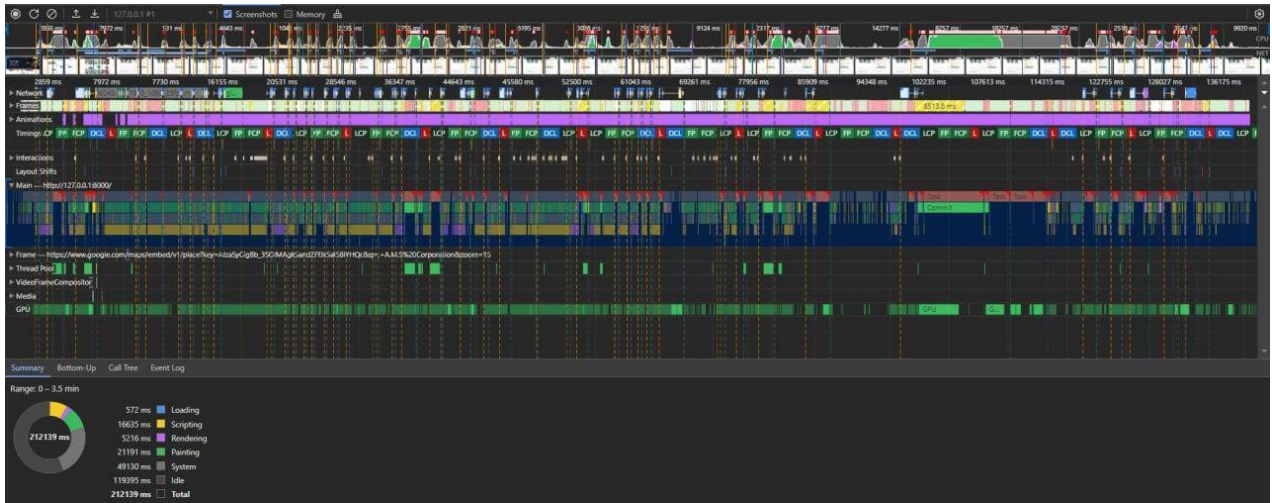


Figure 4.3.2: Performance Profiling (Timeline)

- **Timeline Range:** 0 - 3.5 minutes.
- **Total Time:** 212,139 ms.
- **Breakdown of Activities:**
 - **Loading:** 572 ms.
 - **Scripting:** 160,635 ms.
 - **Rendering:** 5,216 ms.
 - **Painting:** 21,910 ms.
 - **System:** 2,123 ms.
 - **Idle:** 19,135 ms.
 - **Total:** 212,139 ms.
- The timeline shows various activities and their durations, including network requests, scripting, rendering, painting, and idle times. It provides a visual representation of how resources are being utilized over time.

Call Tree:

Summary Bottom-Up Call Tree Event Log			
Aa .* _ab_ Filter		No Grouping	
Self Time	Total Time	Activity	
20244.7 ms 46.4 %	20259.6 ms 46.5 %	▶ Commit	
5588.0 ms 12.8 %	9248.1 ms 21.2 %	▶ Evaluate Script	
2603.6 ms 6.0 %	2603.9 ms 6.0 %	▶ Recalculate Style	
557.6 ms 1.3 %	2334.8 ms 5.4 %	▶ Animation Frame Fired	
444.6 ms 1.0 %	2217.9 ms 5.1 %	▶ Parse HTML	
515.4 ms 1.2 %	1184.5 ms 2.7 %	▶ Event: visibilitychange	
1021.5 ms 2.3 %	1021.5 ms 2.3 %	Layout	
946.0 ms 2.2 %	947.6 ms 2.2 %	▶ Paint	
878.5 ms 2.0 %	878.5 ms 2.0 %	Major GC	
77.4 ms 0.2 %	735.0 ms 1.7 %	▶ Timer Fired	
652.7 ms 1.5 %	652.7 ms 1.5 %	Pre-Paint	
414.3 ms 0.9 %	438.1 ms 1.0 %	▶ Run Microtasks	
437.3 ms 1.0 %	437.3 ms 1.0 %	Layerize	
238.1 ms 0.5 %	239.1 ms 0.5 %	▶ Function Call	
216.1 ms 0.5 %	216.1 ms 0.5 %	Hit Test	
133.9 ms 0.3 %	133.9 ms 0.3 %	Minor GC	
33.1 ms 0.1 %	33.1 ms 0.1 %	Scroll	
28.7 ms 0.1 %	28.7 ms 0.1 %	Parse Stylesheet	
3.4 ms 0.0 %	3.4 ms 0.0 %	Fire Idle Callback	
0.2 ms 0.0 %	0.2 ms 0.0 %	Image Decode	
0.0 ms 0.0 %	0.0 ms 0.0 %	Cache Script Code	

Figure 4.3.3: Call Tree

- **Self Time:** The amount of time spent in a specific function or activity.
- **Total Time:** The cumulative time spent, including calls to other functions.
- **Key Activities:**
 - **Commit:** 20,244.7 ms (46.4% Self Time, 46.5% Total Time).
 - **Evaluate Script:** 5,588.0 ms (12.8% Self Time), 9,248.1 ms (21.2% Total Time).
 - **Recalculate Style:** 2,603.6 ms (6.0% Self Time), 2,603.9 ms (6.0% Total Time).
 - **Animation Frame Fired:** 557.6 ms (1.3% Self Time), 2,334.8 ms (5.4% Total

Time).

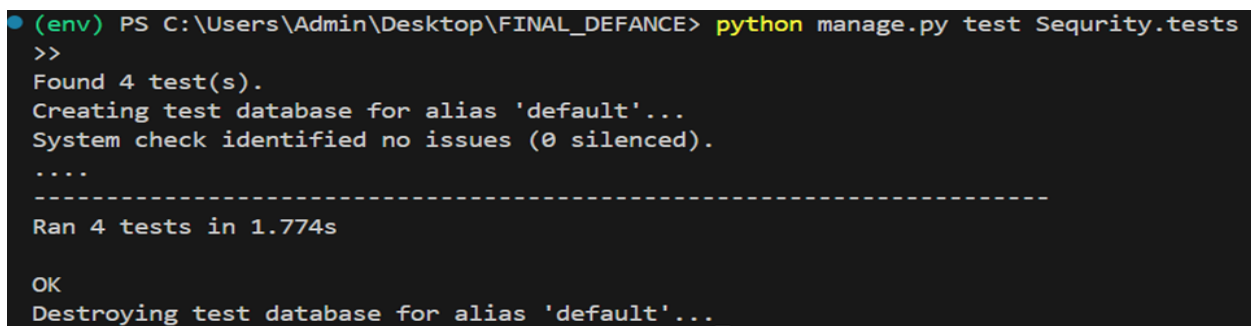
- **Parse HTML:** 444.6 ms (1.0% Self Time), 2,217.9 ms (5.1% Total Time).
- Other activities include Layout, Paint, Timer Fired, Pre-Paint, and various minor activities.

Interpretation and Recommendations

1. **High Total Blocking Time:** The main thread is being blocked for a significant amount of time. Optimize long-running tasks, reduce JavaScript execution time, and defer non-critical scripts.
2. **High Cumulative Layout Shift:** Reduce unexpected layout shifts by setting size attributes for images and videos, avoiding content shifts, and minimizing animations/transitions.
3. **Interaction to Next Paint:** Optimize JavaScript and rendering paths to ensure quicker responses to user interactions.
4. **Performance Profiling:** Focus on reducing script execution time (scripting is the dominant activity), optimize rendering and painting processes, and minimize the time spent on network requests.

Automated testing:

The testing phase confirmed that the critical user operations in the Security,E-commerce module function as expected. This provides confidence in the stability and reliability of these features, meeting the project requirements and ensuring a robust user experience. Further testing, including edge cases and integration tests, is recommended to maintain and improve the overall quality of the application.



```
(env) PS C:\Users\Admin\Desktop\FINAL_DEFANCE> python manage.py test Sequiry.tests
>>
Found 4 test(s).
Creating test database for alias 'default'...
System check identified no issues (0 silenced).
....
-----
Ran 4 tests in 1.774s

OK
Destroying test database for alias 'default'...
```

Figure : 4.3.4 Test case1

```

Destroying test database for alias 'default'... python manage.py test E_commerce.tests.test_cart
>> v) PS C:\Users\Admin\Desktop\FINAL_DEFANCE>
Found 3 test(s).
Creating test database for alias 'default'...
System check identified no issues (0 silenced).
...
-----
Ran 3 tests in 1.416s

OK
Destroying test database for alias 'default'...

```

Figure : 4.3.5 Test case2

```

(env) PS C:\Users\Admin\Desktop\FINAL_DEFANCE> python manage.py test E_commerce.tests.test_medicine
>>
Found 1 test(s).
Creating test database for alias 'default'...
System check identified no issues (0 silenced).
.
-----
Ran 1 test in 0.002s

OK
Destroying test database for alias 'default'...

```

Figure : 4.3.6 Test case3

4.4 Summary

In summary, our implementation process began with careful planning and design, focusing on the essential features needed for a home rental service. We used Django to build a robust backend and ensure efficient handling of data and user interactions. We faced several challenges, including integrating a secure payment gateway, ensuring a responsive design, and optimizing database queries. By researching suitable solutions, employing best practices, and leveraging Django's capabilities, we successfully overcome these challenges.

CHAPTER 5

RESULT AND ANALYSIS

5.1 Overview

This chapter dives into the functionalities and potential impact of our Django home rental service application. We will discuss the core features, how they address the needs of the Savar suburban market, and the anticipated benefits for both tenants and landlords.

5.2 Experimental/ Simulation Result

Since our application likely isn't based on experiments or simulations, we can adapt this section to focus on user experience (UX) simulations:

- **User Experience (UX) Simulations (Optional):** If we have conducted any preliminary UX simulations (e.g., user testing with prototypes), we can briefly discuss the results here. This could involve:
 - Usability testing findings: Describe any insights gained from user testing about the ease of use of our application, clarity of functionalities, and overall user experience.
 - Hypothetical user scenarios: Outline a few examples of how tenants and landlords might interact with our application in their search for rentals or property management.

5.3 Comparative Analysis

While a traditional competitor comparison might not be applicable, we can use this section to analyze our application relative to the existing rental landscape in Savar:

- **Market Landscape Analysis:** Discuss the current state of the Savar rental market, including common practices for finding rentals, challenges faced by both tenants and landlords, and limitations of existing solutions (if any).
- **Our Application as a Solution:** Explain how our Django application addresses these limitations and fulfills unmet needs in the market. This could involve aspects like:
 - Increased transparency and accessibility of rental listings.
 - Improved search efficiency for tenants.
 - Enhanced communication channels between tenants and landlords.

5.4 Summary

Summarize the key takeaways from this chapter. Briefly reiterate the core functionalities of our application, how it addresses the needs of the Savar market through the analysis in sections 5.2 and 5.3, and the anticipated positive impacts for both tenants and landlords.

CHAPTER 6

Impact on Society, Environment, and Sustainability

6.1 Impact on Life

Increased Efficiency and Transparency:

- **Streamlined Search Process:** The user-friendly search functionalities empower renters to find suitable properties quickly and efficiently. This reduces reliance on traditional methods that can be time-consuming and frustrating.
- **Improved Matching:** By allowing renters to filter listings based on specific criteria and providing detailed property descriptions, your service facilitates better matching between renters and landlords. This reduces wasted time on unsuitable viewings and leads to more successful rental placements.
- **Greater Transparency:** Our service fosters transparency in the rental market by providing a centralized platform for listing properties and facilitating communication between renters and landlords. This allows renters to access clear information about listings and helps landlords showcase their properties effectively.

Economic Benefits:

- **Reduced Vacancy Rates:** By connecting a wider pool of potential renters with available properties, your service can help reduce vacancy rates for landlords. This translates to increased rental income and improved market stability.
- **Accessibility for Diverse Needs:** Our service caters to a wider range of renters, including students, young professionals, and those new to an area. This increased accessibility to the rental market can benefit individuals seeking flexible or short-term housing options

- **Potential Cost Savings:** By streamlining the rental process and promoting transparency, your service can potentially lead to more competitive rental pricing. Additionally, features like online applications and communication tools can save time and resources for both renters and landlords.

Community Building:

- **Enhanced Communication:** Our service facilitates clear and convenient communication between renters and landlords through its messaging system. This fosters a more collaborative and respectful relationship between the two parties.
- **Community Features:** Consider incorporating features that promote community building, such as neighborhood guides or forums for renters to connect. This can enhance the overall rental experience and create a sense of belonging for renters in their new communities.

Social Considerations:

- **Accessibility for All:** It's important to ensure our service is accessible to everyone, including people with disabilities. Implement features that comply with accessibility guidelines to ensure everyone can take advantage of the platform.
- **Fair Housing Practices:** Our service will uphold fair housing practices and prevent discrimination against any user based on protected characteristics.

6.2 Impact on the Environment

Potential Benefits:

- **Reduced Vacancy Rates:** By efficiently connecting renters and landlords, our service can help reduce vacancy periods in rental properties. This can lead to a decrease in energy

consumption in vacant units, as unoccupied buildings often maintain minimal heating or cooling.

- **Increased Mobility and Downsizing:** Our service try to encourage a trend towards renting, particularly for young professionals or those seeking more flexible living arrangements. This could lead to a decrease in overall housing demand, potentially reducing the environmental impact associated with new construction projects (material usage, energy consumption during construction).
- **Improved Matching and Informed Decisions:** By providing a platform with detailed listings and filtering options, our service can empower renters to find properties that better suit their needs. This could lead to reduced relocation frequency, as renters are more likely to find a place they'll stay in for a longer period. Frequent moves often involve significant energy consumption due to transportation and moving logistics.

Potential Drawbacks:

- **Increased Travel for Viewings:** While our service can streamline the initial search process, it might lead to an increase in the number of viewings potential renters conduct before making a decision. This could result in additional car travel and associated emissions.
- **Focus on Short-Term Rentals:** If our service caters heavily to short-term rentals, it could encourage a more transient lifestyle and potentially discourage investment in energy-efficient upgrades for rental properties, as landlords might prioritize short-term profitability over long-term sustainability measures.

Overall Considerations:

- **Promoting Sustainable Practices:** Consider incorporating features that encourage sustainable practices within our service. This could include highlighting energy-efficient

features in property listings or partnering with green energy providers to offer renters options for offsetting their carbon footprint.

- **Data Analysis and User Behavior:** By analyzing user data and rental trends, we can gain insights into how our service might be influencing renter behavior. This information can be used to identify opportunities to promote environmentally conscious choices within the platform.

6.3 Ethical Aspects

Promoting Fair Housing Practices

- **Discrimination Prevention:** Our service implements robust measures to prevent discrimination against users based on protected characteristics. Automated screening processes that don't rely on personal information or partnerships with fair housing organizations can be explored to achieve this.
- **Accessibility for All:** This platform is accessible to users with disabilities. Features like screen reader compatibility, clear labeling, and alternative text descriptions for images are essential. Additionally, catering to renters with diverse needs, such as those seeking pet-friendly rentals or accessible housing units, is crucial.

Balancing Transparency and User Privacy

- **Clear Terms of Service:** Transparent and concise terms of service outlining user rights, responsibilities, and data privacy practices are fundamental. Users must understand how their information is collected, used, and protected.
- **Data Security:** Industry-standard security measures, including secure login procedures, data encryption, and regular security updates, are necessary to safeguard user data, particularly personal information and financial details.

- **User Control Over Data:** Allowing users control over their data is essential. This could include options to view, edit, or delete personal information associated with their accounts.

Addressing Algorithmic Bias

- **Unbiased Search Results:** If the service utilizes search algorithms, ensuring they are unbiased and don't disadvantage specific renters or landlords is crucial. Regularly reviewing algorithms for potential bias and adjusting them as needed is vital.
- **Transparency in Search Ranking:** Consider providing transparency in how search results are ranked. This allows users to understand the factors influencing what they see and helps maintain trust in the platform.

Responsible Marketing Practices

- **Accurate Listings:** Measures to identify and remove misleading or fraudulent listings are necessary. Additionally, encouraging landlords to provide accurate and up-to-date information in their listings promotes trust within the platform.
- **Bidding Wars (Optional):** While features like rental auctions or bidding wars might benefit landlords in a competitive market, their potential to disadvantage renters by driving up prices requires ethical consideration. Explore alternative solutions if such features are a consideration.

Maintaining a Balanced Platform

- **Protecting Tenants' Rights:** Policies and features should not unfairly favor landlords over renters. Consider incorporating resources or support options for renters who might be unfamiliar with their rights or facing challenges with landlords.

- **Open Communication Channels:** Providing clear and accessible communication channels allows users to report issues, ask questions, or raise concerns. This fosters trust and allows for addressing any ethical dilemmas that might arise on the platform.

By prioritizing these ethical considerations, we can ensure the home rental service operates with fairness, transparency, and responsibility. This will not only benefit renters and landlords but also promote a more ethical and trustworthy marketplace for everyone involved.

6.4 Sustainability Plan

Our goal is to create a platform that fosters a more environmentally responsible approach to the rental market, while still delivering a convenient and user-friendly experience for renters and landlords.

Promoting Energy Efficiency:

- **Highlighting Energy-Efficient Features:** Partner with landlords to identify and showcase energy-efficient features in their listings. This could include details on Energy Star appliances, smart thermostats, LED lighting, or renewable energy sources like solar panels.
- **Educational Resources:** Develop educational resources for renters and landlords on the benefits of energy-efficient living. This could include tips on reducing energy consumption, utilizing smart home features efficiently, and choosing eco-friendly appliances.
- **Partnerships with Utility Providers:** Explore partnerships with utility providers to offer renters exclusive discounts on energy-efficient appliances or renewable energy plans.

Reducing Environmental Impact of Move-Ins:

- **Promoting Local Moves:** Encourage renters to consider local move-in options to reduce

transportation emissions associated with long-distance relocations. This could involve partnering with local moving companies or offering incentives for shorter-distance moves.

- **Declutter and Reuse Initiatives:** Partner with donation or resale organizations to facilitate the responsible disposal of unwanted furniture or appliances during move-outs. This reduces unnecessary waste and promotes a circular economy.

Sustainable Building Practices:

- **Incentives for Green Upgrades:** Consider offering incentives (e.g., discounted listing fees) to landlords who make energy-efficient upgrades to their properties. This could encourage investment in sustainable building practices and create a more environmentally friendly rental stock.
- **Promoting Sustainable Building Materials:** If the service expands to include new construction listings, explore ways to promote the use of sustainable building materials and green building certifications within the platform.

Data Analysis and User Behavior:

- **Tracking User Choices:** Analyze user data to understand how renters search for and choose properties. This can inform future platform features that promote energy-efficient options or highlight sustainable living practices.
- **Monitoring Environmental Impact:** As the platform grows, explore ways to measure and track the potential environmental impact of our service. This could involve analyzing data on energy consumption in listed properties or tracking the number of local moves facilitated.

By implementing these sustainability measures, we aim to:

- Reduce the environmental footprint of the rental market.
- Encourage energy-efficient practices among renters and landlords.
- Promote responsible waste management during move-ins and move-outs.
- Support the adoption of sustainable building practices within the rental market (if applicable).

This sustainability plan is a commitment to continuous improvement. We will regularly evaluate its effectiveness and adapt our strategies based on data and user feedback. Our ultimate goal is to create a home rental service that fosters a more sustainable and responsible housing ecosystem.

6.5 Summary

Briefly summarize the key takeaways from this chapter. Reiterate the positive societal and environmental impacts our application can potentially create in Savar, while acknowledging any ethical considerations and outlining our commitment to a sustainable development plan.

CHAPTER 7

Conclusion and Future Scope

7.1 Conclusions

The proposed home rental service has the potential to revolutionize the rental market by offering a user-friendly, efficient, and ethical platform. By prioritizing user experience, promoting transparency, and integrating sustainability practices, we can create a positive impact on both renters and landlords, while contributing to a more responsible and environmentally conscious housing environment. This win-win scenario will not only benefit individual users but also foster a stronger and more sustainable rental ecosystem overall.

7.2 Further Suggested Works

Our home rental service has a strong foundation, but there's always room for innovation. Here are some exciting possibilities for future development:

- **Community Building Features:** Integrate features that foster a sense of community among renters, such as neighborhood guides, resident forums, or local event listings. This can enhance the overall rental experience and create a sense of belonging for renters in their new communities.
- **Verified Reviews and Ratings:** Implement a system for verified reviews and ratings from both renters and landlords. This can increase trust and transparency on the platform, allowing users to make informed decisions based on real-life experiences.
- **AI-powered Matching:** Explore the potential of artificial intelligence (AI) to refine search results and suggest suitable properties based on user preferences, past behavior, and rental history. This can improve matching accuracy and reduce time spent searching for unsuitable listings.
- **Neighborhood Vibe Analysis:** Develop features that analyze neighborhood data (e.g., noise levels, crime rates, amenities) to provide renters with a more comprehensive

understanding of the vibe and character of potential rental areas.

- **Smart Home Integration:** Explore partnerships with smart home device providers to enable renters to search for and filter listings with integrated smart home features. This can cater to the growing demand for technology-enabled living spaces.
- **Market Trend Analysis:** Utilize user data and rental trends to provide insights into local rental markets. This data can be valuable for both renters and landlords, informing decisions about pricing, location choices, and overall market dynamics.

These are just a few ideas to spark further innovation. By staying at the forefront of technological advancements and user needs, our home rental service can continue to evolve and offer an unmatched experience for renters and landlords alike. The future of the rental market is bright, and our service can be a driving force in shaping a more efficient, transparent, and sustainable housing ecosystem.

7.3 Limitations/ Conflict of Interests

Limitations: Acknowledge any limitations of our application in its current state. This could involve:

- Features that haven't been fully implemented yet.
- Potential challenges regarding user adoption or integration into the existing rental market.

Conflict of Interests: If applicable, disclose any potential conflicts of interest related to the development of the application. This could involve personal or professional interests that might influence the application's design or functionality.

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Appendix A

Complex Engineering Problems (EP) and Complex Engineering Activities (EA) Analysis

Title: Enhancing Home Rental Services with Seamless Healthcare and Transportation Solutions

Students ID:201-15-3193 ,201-15-3402

CO Description for FYDP

CO	CO Descriptions	PO
Phase -I		
CO1	Integrate recently gained and previously acquired knowledge to identify a web-based home rental management problem for the Final Year Design Project (FYDP)	PO1
CO2	Analyze different aspects of the goals in designing a solution for this FYDP	PO2
CO3	Explore diverse problem domains through a literature review, delineate the issues, and establish the goals for the FYDP	PO4
CO4	Perform economic evaluation and cost estimation and employ suitable project management procedures throughout the development life cycle of the FYDP	PO11
Phase -II		

CO5	Design and develop technical solutions and system components or processes that meet specified requirements, ensuring compliance with public health and safety standards, as well as considering cultural, socioeconomic, and environmental factors in this FYDP	PO3
CO6	Choose and apply appropriate methodologies, resources, and contemporary engineering and IT technologies to address complex engineering processes, encompassing prediction and modeling, while adhering to relevant constraints in this FYDP	PO5
CO7	Analyze societal, health, safety, legal, and cultural considerations, along with associated responsibilities, in the context of professional engineering practice and the resolution of this problem, employing logical reasoning guided by contextual understanding.	PO6
CO8	Comprehend and evaluate the enduring sustainability and impact of professional engineering endeavors in addressing intricate engineering challenges within social and environmental frameworks.	PO7
CO9	Implement ethical principles and adhere to professional standards and norms in this FYDP	PO8
CO10	Capable of operating proficiently both individually and as a team member or leader across diverse teams and interdisciplinary settings in this FYDP.	PO9
CO11	Proficiently communicate with the engineering community and broader society regarding complex engineering endeavors, including the ability to comprehend and generate comprehensive reports and design documentation, as well as provide and receive clear instructions throughout this FYDP.	PO10
CO12	Acknowledge the importance of self-directed and lifelong learning within the evolving landscape of technology, and possess the readiness and capability to engage in lifelong learning endeavors.	PO12

Addressing CO (1 to 8), Knowledge Profile (K), Attainment of Complex Engineering Problems (EP), and Attainment of Complex Engineering Activities (EA)

Addressing CO (1 to 8), Knowledge Profile (K), Attainment of Complex Engineering Problems (EP):

S N	EP Definition	Attainment	CO	Justification (with Knowledge Profile)	References
1	EP1: Depth of Knowledge required	Yes	CO1, CO2, CO3, CO5, CO6, CO7, and CO8	The project covers engineering fundamentals (K3) through the use of Django for backend development and HTML/CSS and bootstrap for frontend. It integrates various design and interaction principles (K4)	Page no: [24, 14-16, 30]
2	EP2: Range of Conflicting Requirement s	Yes	CO2, CO7	Addressing challenges like integrating diverse features while maintaining usability, security, scalability, and compliance with regulations.	Page no: [11]
3	EP3: Depth of analysis required	Yes	CO2, CO6	Selecting appropriate technologies and frameworks to optimize user experience and platform performance.	Page no: [17-20]
4	EP4: Familiarity of Issues	Yes	CO8	Integrating insights from property management systems and optimizing the platform for enhanced user experience and data security	Page no: [8-11]
5	EP5: Extent of application codes	NO	N/A	N/A	N/A
6	EP6: Extent of stakeholders involved and conflicting	NO	N/A	N/A	N/A

	requirements				
7	EP7: Interdependence	Yes		Addressing high-level problems across stages, ensuring data integrity, security, and performance in database implementation, optimizing user experience.	Page no: [8-11]

Addressing CO11 with Complex Engineering Activities (EA) [Some or all of the following]:

SN	EA Definition	Attainment	CO	Justification	References
1	EA1: Range of resources	Yes	CO11	Leveraging a skilled team, financial resource allocation, and tools like Django, Visual Studio Code, and various programming languages and databases for effective execution.	Page no: [20]
2	EA2: Level of interaction	No	N/A	N/A	N/A
3	EA3: Innovation	No	N/A	N/A	N/A
4	EA4: Consequences for society and environment	Yes	CO7	Emphasizing social impact and sustainability by enhancing rental efficiency, promoting sustainable practices, and ensuring ethical considerations like data privacy.	Page no: [26-31]
5	EA5: Familiarity	Yes	CO8	Evaluating market competitors to highlight unique features and inform strategic decisions for enhanced competitiveness and value proposition.	Page no: [7-10]

Addressing CO (4, 9, 10, and 12):

SN	COs	Attainment	Justification	References
1	CO4	Yes	The project captures CO4 by integrating financial management practices, including budgeting, resource allocation, cost management, and risk mitigation, ensuring efficient fund distribution, monitoring expenditures, and identifying optimization areas while maintaining quality.	Page no: [4-5]
2	CO9	Yes	Upholding ethical practices by prioritizing user privacy, maintaining transparency, and promoting accessibility.	Page no: [28]
3	CO10	No	N/A	N/A
4	CO12	Yes	Emphasizing lifelong learning through diverse testing protocols and continuous improvement practices.	Page no: [21-25]

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