

**A**

**Summer Project Report on**

**Rental System (Hamro Kotha)**

**Submitted by**

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Sudur Paschimanchal Campus

**A Summer Project Report Submitted to Faculty of Management, Tribhuvan University in partial fulfillment of the requirements for the degree of**

**Bachelor of Information Management**

**Under the Supervision of**

**Mr. Sandesh Yadav**

**Project Supervisor, SPA College**

# 

# **STUDENT DECLARATION**

This is to certify that I have completed the Summer Project entitled “**Hamro Kotha**” a web-based application, under the guidance of “ Mr. Sandesh Yadav” in partial fulfillment of the requirements for the degree of **Bachelor of Information Management** at Faculty of Management, Tribhuvan University. This is my Original Work and I have not submitted it earlier elsewhere.

Date:2080-03-20

Name: Bipin Poudel

Signature:…………

# **CERTIFICATE FROM THE SUPERVISOR**

This is to certify that the summer project entitled “**Hamro Kotha**” a web-based application, is an academic work done by “Bipin Poudel” submitted in the partial fulfillment of the required for the degree of **Bachelor of Information Management** at Faculty of Management, Tribhuvan University under my guidance and supervisor. To the best of my knowledge, the information presented by him in the summer project report has not been submitted earlier.

Signature: ………………

Name: Mr. Roshan Shrestha

Designation: Project Supervisor

Date:2080-03-20

# **ACKNOWLEDGMENT**

The Summer Project has been constructed for the partial fulfillment of the required degree of Bachelor of Information Management at Faculty of Management. The completion of this summer project would not have been possible without the help of the administration of Sudur Paschimanchal Campus. So, we would like to thank the entire administration of SPC as well as the faculty members of the BIM.

We are also thankful to teachers of SPC for their constant guidance and supervision regarding this project development. We would like to thank **Mr. Sandesh Yadav and Mr Roshan Shrestha, my supervisor** for his contribution to this project development process.

Lastly, I would like to thank all the people who were directly and indirectly associated with this project.

Bipin Poudel(11059/19)

BIM 6th Semester

Sudur Paschimanchal Campus

# **EXECUTIVE SUMMARY**

This **Rental System (Hamro Kotha)** is an online application designed to simplify and streamline the process of finding and renting rooms, houses, and flats. It addresses the challenges and inconveniences associated with the traditional rental system, providing a user-friendly platform for both property owners and potential tenants.

With this system, individuals seeking rental accommodations can easily browse through a wide range of available rooms, houses, and flats. They can access detailed information about each property, including features, amenities, location, and rental terms. This empowers tenants to make informed decisions based on their specific requirements and preferences.

For property owners, the system offers a convenient way to advertise and showcase their rental properties. They can create listings with comprehensive descriptions, high-quality images, and accurate rental details. The system provides a secure and verified platform where property owners can connect with potential tenants, ensuring a reliable and hassle-free renting experience for both parties.

Registration on the platform is free of cost, and once users are validated by the admin, they gain access to the full range of functionalities available. Tenants can search for suitable rental options based on their desired criteria, such as location, price and property type. Property owners and agents can effectively promote their properties to a wide audience, expanding their reach and increasing the chances of finding suitable tenants.

This rental system is particularly beneficial for individuals, students with less time to search outward and lessor. It serves as a centralized platform for advertising and accessing rental accommodations, fostering a transparent and efficient rental process.

Overall, this **Rental System (Hamro Kotha)** revolutionizes the way rental properties are sought, advertised, and leased. It offers a seamless online experience, ensuring that tenants find comfortable and suitable accommodations, while property owners and agents effectively market their properties to the right audience. It minimizes the mediator and commission for mediators.

# 

# **ABBREVIATIONS**

App : Application

ANFSU : All Nepal National Free Students' Union

BIM : Bachelor of Information Management

CSS : Cascading Style Sheet

ER : Entity-Relationship

Gen : Generation

GUI : Graphical User Interface

HDD : Hard Disk Drive

HTML : Hypertext Markup Language

IDE : Integrated Development Environment

IT : Information Technology

OS : Operation System

RAM : Random Access Memory

ROM : Read Only Memory

SSD : Solid State Drive

SP : Summer Project

TC : Test Case

TU : Tribhuvan University

UC : Use Case

Win : Windows

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# **Chapter I: Introduction**

## **Background**

The **Rental System (Hamro Kotha)** was developed to address the challenges faced by individuals when searching for rental accommodations in various cities. Whether it is for educational purposes, job opportunities, or other reasons, finding suitable and affordable properties (such as rooms, houses, and flats) can be a daunting task.

Recognizing the need for a more efficient and convenient solution, we set out to create an online platform that would streamline the process of finding and renting rooms, houses, and flats. Our goal was to simplify the search process, reduce the associated difficulties, and provide a reliable and user-friendly experience for both tenants and property owners.

The rental management system offers a centralized platform where property owners can advertise their available rooms, houses, or flats for rent, and interested individuals can access comprehensive information about these properties. By utilizing the platform, potential tenants can easily search for rental options that meet their specific requirements, such as location, size, amenities, and budget.

To ensure the authenticity and reliability of the listed properties, our system incorporates a verification process. Property listings undergo a thorough review by our administration team to confirm their legitimacy, providing a secure environment for both tenants and property owners.

Registration for tenants is free of cost, and once their account is validated, they gain access to a range of features and functionalities. This allows them to explore available rental options, view property details, communicate with property owners, and make informed decisions.

The rental management system also benefits property owners, including companies, agents, and individuals, by providing them with a platform to showcase their properties and reach a broader audience. Property owners can efficiently manage their listings, respond to inquiries from potential tenants, and finalize rental agreements through the platform.

Initially, our focus is on serving a specific city or region, but we aim to expand our coverage based on user feedback and demand. As we grow, we plan to enhance the platform's features, introduce advanced search capabilities, and incorporate additional services to further simplify the rental process.

By generating revenue through strategic partnerships and targeted advertising, we aim to provide our services to tenants free of charge while sustaining the ongoing development and maintenance of the rental system.

The Rental System for Rooms, Houses, and Flats endeavors to revolutionize the rental market by offering a reliable, transparent, and user-friendly platform that connects tenants with suitable rental accommodations, simplifying the process for all parties involved.

## 1.2 Introduction to market

Welcome to the Rental System, your go-to platform for hassle-free rental property solutions. We understand the challenges individuals face when searching for rooms, houses, and flats to rent. Our user-friendly online platform aims to simplify the process by connecting tenants with a wide range of rental options.

Whether you're a student, professional, or someone in need of temporary accommodation, our Rental System provides a centralized hub to explore and find the perfect rental property. With our intuitive search tools, you can easily filter properties based on ac fan included, price range, and desired amenities.

Property owners can also benefit from our Rental System by listing their properties and attracting potential tenants. Our platform ensures that all listed properties meet quality standards and undergo thorough verification processes, providing peace of mind for both tenants and property owners.

Join us as we revolutionize the rental industry, offering a trusted and efficient solution for finding and managing rental properties. Experience the convenience and ease of our **Rental System (Hamro Kotha)**, and discover the perfect rental property that meets your needs and preferences.

The project development first step is to gather data and identify problems. Therefore for requirement analysis the organization named **Sudur Paschimanchal Academy** was visited and two different individual questionnaire sessions were organized with an additional one mass questionnaire approach. Two individuals named **Ashok Bohara** and **Amrita Mahara** are asked for pre-defined sets of questionnaires to ensure real data collection. In conclusion to the questionnaire session the main problem is high efforts and expense of more money for unsatisfied services.

This project development includes market survey with questionnaire technique. Structured questionnaire model is used to gather data from people where a fixed set of questions are pre-defined ensuring consistency in data collection. Two individual and one mass questionnaire is performed to know about market problems and effect of this project to the market area. From the survey it is known that mainly students and job holders who migrate from hilly or Himalayan to terai had problems searching rooms or flats. As per random questions to people they state a problem of effort and money at the time of searching rooms. Interviewers want to minimize their efforts and price by using the internet. They also state that the platform should be trustworthy and provide true information.

This project is being built using Django due to several mentioned features and benefits. This software is based on the C2C business model. Each and every expense related to this project is funded by ANFSU of Aishwarya Multiple Campus, Dhangadhi. According to market study and survey the market coverage is wide if there would be better marketing strategy. Rather than marketing, customers can be attracted by an easy and simple interactive interface.

## **1.3 Current situation of the market**

In the current market, the demand for rental properties is on the rise. With shifting lifestyles, job mobility, and an increasing number of students and professionals seeking temporary accommodation, the rental market has become highly competitive. Tenants are looking for affordable, well-maintained properties that offer convenience and amenities.

On the other hand, property owners and landlords have a unique opportunity to capitalize on the growing rental market. By providing desirable rental properties, they can attract a steady stream of tenants and generate a reliable source of income. However, in this fast-paced market, it is essential for property owners to stay updated with the latest trends and demands to effectively market their properties and stand out among the competition.

Overall, the rental market presents both challenges and opportunities. As the market evolves, innovative solutions like our Rental System aim to bridge the gap between tenants and property owners, providing a seamless and efficient rental experience for all parties involved.

## **1.4 Problem statement**

Demography of the city is increasing day by day. Population is growing immensely due to several reasons. The main reason for the increase in population is migration from other places or rural areas to cities. Due to which, several problems to the people migrated. Here the main problem for the migrated people is to find rooms or houses or flats. So after diagnosing this problem we have come to our conclusion that there should be an easier way to communicate with the landlord and find a better room for oneself. Therefore we have created one website called **“HAMRO KOTHA”** to minimize the problem of finding rooms and flats and houses. This website stores information about the landlord and address of the rooms or flats or house with some of the images. This information and images helps other people to locate their desired rooms or flat or house. Though there are others websites like ours but they are not getting their visitors due to complex design. So our main motive is providing simple and interactive websites to the people for interaction and decreasing communication gap.

## **1.5 Literature Review**

The rental system project aims to address the challenges faced by individuals and families in finding suitable rental accommodations. With the advancement of technology and the growing demand for convenient housing solutions, online platforms have emerged as a popular choice for rental services.

Existing research and industry insights reveal that an efficient rental system should focus on user satisfaction and ease of use. Providing a user-friendly interface, comprehensive property listings, and robust search functionality are key aspects highlighted in the literature. Additionally, secure property information, reliable property management, and responsive customer service contribute to building trust and ensuring a positive user experience.

Furthermore, staying updated with market trends and user preferences is crucial for the success of the rental system. Regular feedback collection, data analysis, and market research facilitate continuous improvement and adaptation to changing needs.

By integrating these insights into the development of the rental system, it offers a seamless and convenient solution for individuals seeking rental accommodations. The project provides an intuitive platform that streamlines the search, selection, and transaction processes, ultimately enhancing the overall rental experience for users.

## **1.6 Objective of the study**

The main purpose of “Hamro Kotha” is to achieve following objectives:

### 1.6.1 General objectives

* To partial fulfillment of the requirement for the degree of Bachelor of Information management
* To build a web app to keep track of available rooms or flat or house for rent.
* To build a web app to keep records of services.
* To provide simple interactive website for users
* To provide an easier way of communication to the landlord.
* Provide an easier way of advertising a house or flat or rooms.

### 1.6.2 Specific objectives

* To make searching procedures faster and automated.

## **1.7 Methodology**

Primary method of data collection was used in gathering information. The interview schedule was administered to the people who are new to this area or who have migrated recently. A short meeting was also conducted between students who had shifted to this area for higher education purposes.

### 1.7.1 Data and Information

The data and information play vital roles for the identification of possible threads and opportunities of any organization. Data were collected from different sources from the different real estate and rental sites. Following are the major sources from where the data are obtained.

* **Primary Data**

Primary data plays a crucial role in research as it is collected directly from the original source, making it highly valuable and reliable. For the rental system project, primary data was gathered through direct interaction with potential users and stakeholders involved in the rental industry.

Therefore for requirement analysis and primary data collection the organization named **Sudur Paschimanchal Academy** was visited and two different individual questionnaire sessions were organized with an additional one mass questionnaire approach. Two individuals named **Ashok Bohara** and **Amrita Mahara** are asked for pre-defined sets of questionnaires to ensure real data collection. In conclusion to the questionnaire session the main problem is high efforts and expense of more money for unsatisfied services.

The collected data was then carefully analyzed to identify common problems and issues encountered in the rental process. This analysis helped in understanding the specific needs and preferences of renters, as well as the pain points faced by property owners and managers.

* **Secondary Data**

The secondary data for the system were collected from different online rental and real estate sites. Different articles and journals were studied for the collection of the data about online rental systems.

### 1.7.2 Project framework

The project management framework can be broken into six parts:

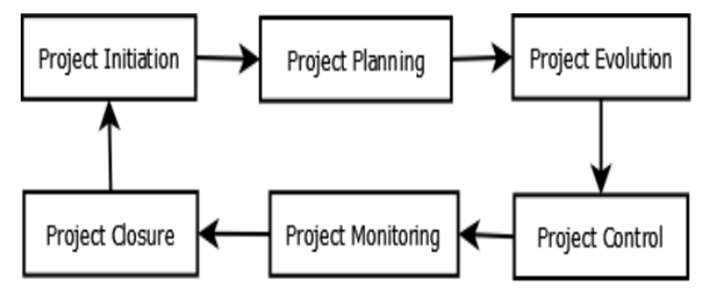


Fig 1.1.: Project Framework of Rental system.

* **Initiation**

This is where the project was actually defined. The outline of the objectives in the project were listed and identification of potential risks were done.

* **Planning**

In this phase, all the project tasks were listed in a detailed roadmap. Estimation of how long each one will take, create deadlines, and add assignees were done.

* **Execution**

The plan was put into action. Work commenced on project tasks and aligned their schedules to achieve key deliverables.

* **Monitoring and Controlling**

Project managers oversaw the progress by tracking performance, creating reports, and readjusting priorities if necessary.

* **Closure**

The final phase incorporated the results achieved when all project tasks are completed. A project manager analyzed these results and planned the next steps.

### 1.7.3 Tools and technologies used

The tools and techniques used in this project are mentioned as:

* **Observation**

Different online rental sites were observed before designing **Hamro Kotha** to get data and information about design, working and other ideas for my project.

* **Interview**

This session was conducted to get primary information and necessity about users and stakeholders. One mass with two individual interview session was conducted for reliable data collection.

* **Technologies**

Following are the technologies used to develop this system:

1. PC (i3 6th generation, Win10, 12gb RAM, 256gb SSD, 1TB HDD)
2. Browser (Microsoft Edge)
3. IDE (Visual Studio Code)
4. Internet (Wi-Fi)

### 1.7.4 Technique of the project report analysis

* + - * **Problem Analysis**

The rental market currently lacks a known and user-friendly solution for individuals to easily find available rooms, houses, or flats for rent. Existing options are fragmented and offer limited information, making it difficult for renters to efficiently explore their options and make informed decisions. Traditional methods of finding rentals are time-consuming and unreliable, leading to frustration and a lack of trust in the process. To address these challenges, there is a pressing need for an innovative and centralized rental system that provides a seamless and convenient experience for both renters and property owners.

* **Feasibility analysis**

The feasibility analysis of the rental system project indicates that it is viable in terms of time and cost. The project utilizes various open-source tools, which significantly reduce expenses and maintenance requirements. The availability of open-source technologies ensures cost-effectiveness throughout the development and implementation phases. Moreover, these tools offer flexibility, scalability, and robust features that can meet the evolving needs of the rental system. By leveraging open-source resources, the project can optimize its budget allocation while ensuring the development of a reliable and efficient solution. The feasibility analysis highlights the project's potential to deliver a cost-effective and sustainable rental system that can provide value to both property owners and renters in the market.

* **Data Collection Methods**

The data for the rental system project was collected through various methods. Surveys were conducted to gather information from tenants, landlords, and other stakeholders in the rental market. Interviews were conducted with industry experts and professionals to gain valuable insights. Additionally, data from online platforms and real estate listings were collected and analyzed.

* **Interpretation of Findings**

The analyzed data was interpreted to derive key findings about the rental system. These findings included factors influencing rental prices, popular locations, preferred property types, and tenant satisfaction levels. The interpretation of findings involved a comprehensive understanding of the rental market dynamics, customer preferences, and market demand-supply dynamics. These insights were crucial for making informed decisions and improving the rental system.

* **Limitations and Assumptions**

It is important to acknowledge the limitations and assumptions that may have influenced the analysis and interpretation of the project report. Limitations could include sample size constraints, data availability, and potential biases in survey responses. Assumptions made during the analysis, such as the representativeness of the sample, should be disclosed. Recognizing these limitations and assumptions helps provide a clear context for the findings and ensures transparency in the reporting.

# 

# **Chapter II: Task and Activities Performed**

## **2.1 Analysis of task, activities, problems, issues**

### 2.1.1 Analysis of task,activities

The task analysis conducted for the rental system project encompassed a thorough examination of the tasks, activities, problems, and issues associated with the process of finding and renting accommodations. The initial focus was on understanding the requirements and expectations of users seeking rental properties. This involved conducting market research, gathering insights from potential users, and analyzing their preferences, needs, and pain points. By comprehending the specific tasks and activities users engaged in during their search for rental properties, the project team could design a system that effectively addressed their needs.

Furthermore, the analysis aimed to identify the challenges and issues faced by both tenants and property owners in the current rental market. This included factors such as limited availability of accurate and up-to-date property information, lack of transparency in rental pricing, difficulties in property search and comparison, and inefficient communication between tenants and property owners. By delving into these issues, the project team could develop strategies to mitigate them and improve the overall rental experience for all parties involved.

Based on the findings from the task analysis, potential solutions were thoroughly examined and evaluated. This process involved considering various technological, operational, and user experience aspects to develop a comprehensive system that would effectively address the identified challenges and provide an optimal user experience. In addition, industry best practices and successful rental platforms were studied to gain insights and inspiration for creating an innovative and user-friendly rental system.

Throughout the task analysis phase, all findings were documented and analyzed meticulously. This ensured that the project team had a deep understanding of the tasks, activities, problems, and issues related to the rental process, enabling them to design and develop a solution that met the needs of users and effectively tackled the identified challenges.

### 2.1.2 Problem and issue

When analyzing problems and issues in the rental system, the following topics can be included:

1. User Interface and User Experience Challenges: Identify any difficulties or limitations users may face when interacting with the rental system, such as complex navigation, unclear instructions, or a lack of intuitive design.

2. Data Management Issues: Discuss any challenges related to data storage, retrieval, and manipulation within the rental system. This may include issues with data accuracy, data integrity, data security, or data synchronization.

3. Performance and Scalability Problems: Highlight any performance-related issues encountered during the development or usage of the rental system. This could involve slow response times, system crashes, or difficulties in handling a large number of concurrent users or data.

4. Technical Limitations and Constraints: Identify any technical limitations or constraints that affected the development or functionality of the rental system. This may include hardware limitations, software dependencies, or constraints imposed by the chosen development framework or programming language.

5. Security and Privacy Concerns: Discuss any potential security vulnerabilities or privacy concerns associated with the rental system. This could involve issues such as unauthorized access to user data, inadequate encryption measures, or vulnerabilities in the authentication and authorization processes.

6. Legal and Regulatory Compliance: Address any challenges or issues arising from legal or regulatory requirements relevant to the rental system. This may include compliance with data protection laws, consumer rights regulations, or industry-specific guidelines.

7. Training and Support Difficulties: Discuss any challenges encountered in providing training and support to users of the rental system. This could involve issues with user onboarding, documentation, or the availability of resources for troubleshooting and assistance.

8. Maintenance and Upkeep Concerns: Identify any ongoing maintenance or upkeep challenges associated with the rental system. This may include difficulties in identifying and resolving software bugs, managing system updates and upgrades, or ensuring system availability and reliability.

## **2.2 Analysis of possible solution**

### 2.2.1 Requirement Analysis

The main objective of requirement analysis is to identify and evaluate the requirement of the proposed system. It helps to know about user requirements, system requirements and non-functional requirements for 'Hamro Kotha for People'.

* **Functional Requirement**

It describes the functions of a system and its components. The functional requirements of the system are as follows:

1. Users should login with legitimate username and password to perform different activities on the site.
2. In this system, the users can post property for anytime they want.
3. Users can view the details about their property.
4. Admin can create/add property and its details.
5. Admin can update information added by customers.
6. Admin can manage enquiries.
7. Admin can manage the pages.
8. Admin panel helps the administrator to update add or delete any property or users data.

* **Non Functional Requirement**

The qualities and characteristics of a system required for smooth operation of system refers non functional requirements.Some of the non functional requirements of rental system are:

1. Performance: The rental system should be able to handle a large number of concurrent users and process rental requests quickly and efficiently, ensuring fast response times and minimal downtime.

2. Security: The system should prioritize the security and privacy of user data, implementing robust measures such as encryption, secure authentication, and authorization mechanisms to protect sensitive information from unauthorized access or breaches.

3. Usability: The user interface of the rental system should be intuitive, user-friendly, and accessible, allowing users to easily navigate through the platform, search for rentals, and complete transactions without encountering difficulties.

4. Reliability: The rental system should be reliable and available at all times, minimizing system failures, crashes, and data loss. It should have backup and recovery mechanisms in place to ensure the continuity of services.

5. Scalability: The system should have the capability to scale and handle increasing demands as the number of users and rental listings grows. It should be able to accommodate future growth without significant performance degradation.

### 2.2.2 Feasibility Analysis

Structured sets of questions are asked to two individuals and one mass ensures consistency in data collection. Questions are predefined and asked to get the view of people which helps in the feasibility study of software development. Some of the major feasibility studies done are:

* **Time Schedule / Schedule Feasibility:**

The time feasibility of a project involves careful planning and regular monitoring to ensure that the project stays on track and that any potential risks are identified and managed. It is essential to build in some flexibility in the project timeline to accommodate unforeseen delays and changes.

The project is scheduled as:

Table 1.1 : Gantt Chart of Rental system(Hamro Kotha)

| **Tasks** | **Months** | | | |
| --- | --- | --- | --- | --- |
| **Apr** | **May** | **Jun** | **Jul** |
| Problem Identification |  |  |  |  |
| Proposal  Submission |  |  |  |  |
| Requirement Analysis |  |  |  |  |
| System Designing |  |  |  |  |
| Coding  & Verification |  |  |  |  |
| Implementation  & Testing |  |  |  |  |
| Maintenance |  |  |  |  |
| Documentation |  |  |  |  |
| Final  Presentation |  |  |  |  |

* **Economic Feasibility:**

**Existing System Economic Status:**

There exist several software similar to this project with satisfied customers. Most available software follows the C2B (Customer to Business) business model. Websites work as a middleman between lessor and tenant. When a customer visits their websites then to get services he/she book service by filling out a form provided by the website and then later software handler checks out information and contact those people. Here now the middleman and tenant meet and discuss services and finalize the results. Later the tenant visits the landlord and finalizes services if he/she is satisfied. Somehow these software handlers manage to get payment from different sources like commission from owners, commission from tenants, advertisement, etc.

**Proposed System Economic Status:**

This project removes middlemen and with available information on websites, a customer can directly communicate with owners. This system is based on the C2C (Customers to customers) business model. According to my research the existing system is developed for profit motive but this project is going to be developed for social service. This project is only developed for service with no profit motive. Each and every expense related to this project is being funded by All Nepal National Free Students' Union Aishwarya Multiple Campus, Dhangadhi. Being a starting phase, this project covers Dhangadhi city as a market coverage area. Later with time and updates in software features this could expand on other cities.

Table 2.1: Economic Status of Hamro Kotha

| **S/N** | **Components** | **Price (Rs.)** |
| --- | --- | --- |
| 1 | DomainName | 2500 |
| 2 | Documentation | 1000 |
| 3 | Graphics Designing | 1000 |
| 4 | Hosting | 3000 |
|  | Total (RS.) | 7500 |

* **Technical Feasibility**

The study of the technical environment states what needed technology in the software development process is and what are recommended technologies to run the proposed system. This technical feasibility can be stated as:

**Technology used to develop**

1. Laptop (i3 6th gen with win10)
2. RAM, ROM (12gb,256gb SSD/1TB HDD)
3. Browser ( Brave)
4. IDE (Visual Studio Code)
5. Django ( 4.2)
6. HTML, CSS, Bootstrap
7. Python (3.11.3)

**Technology used to run system**

1. Device with browser
2. Internet

* **Legal and Contractual Feasibility**

This project will not interfere with any kinds of legal laws. In the case of privacy we are planning to think and have closed strong security of data under surveillance.

* **Operational Feasibility**

The measure of how well a proposed system aligns with the operational capability of the market is defined in operational feasibility. It studies whether a system is worth demonstrating in the market or not. This study analyzes several other factors like technical feasibility, legal feasibility, and financial feasibility.

This software is operable to new customers without any training. If a customer is familiar with the internet and is a daily user who surfed the internet can simply visit our website and get desired services.

## 2.3 System Design

### 2.3.1 Flowchart

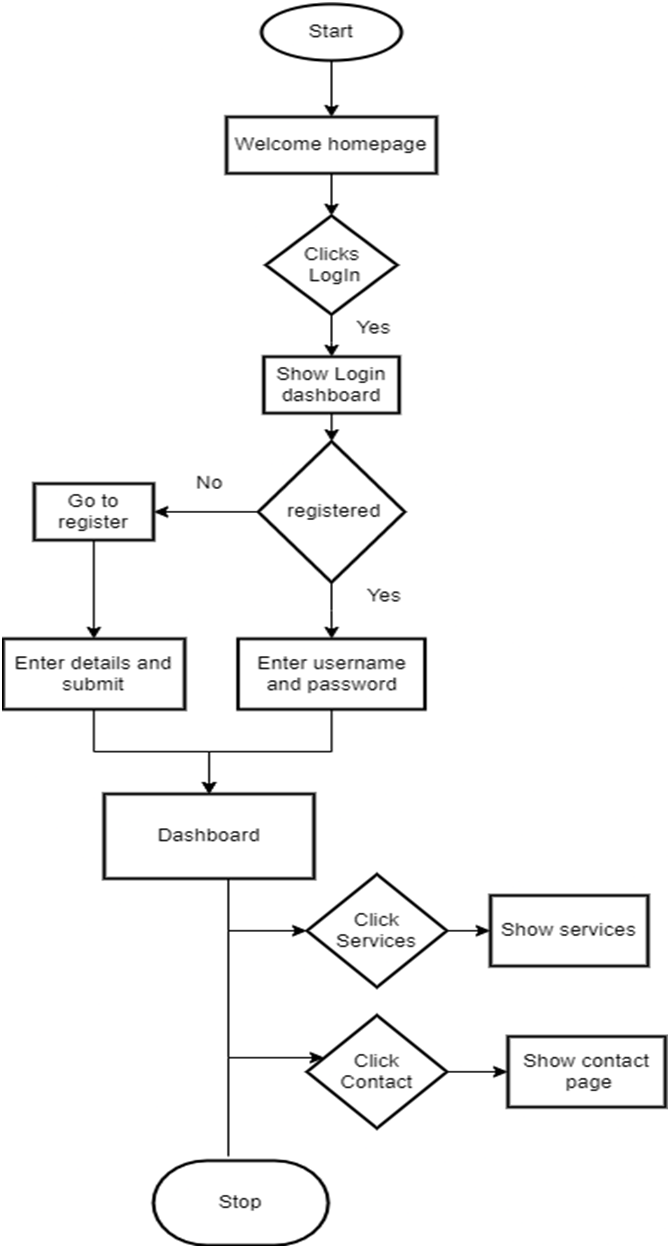


Fig 2.1 : Flow Chart of rental system (Hamro Kotha)

### 2.3.2 ER Diagram

The relationship between the entities are shown by ER diagram in figure below:

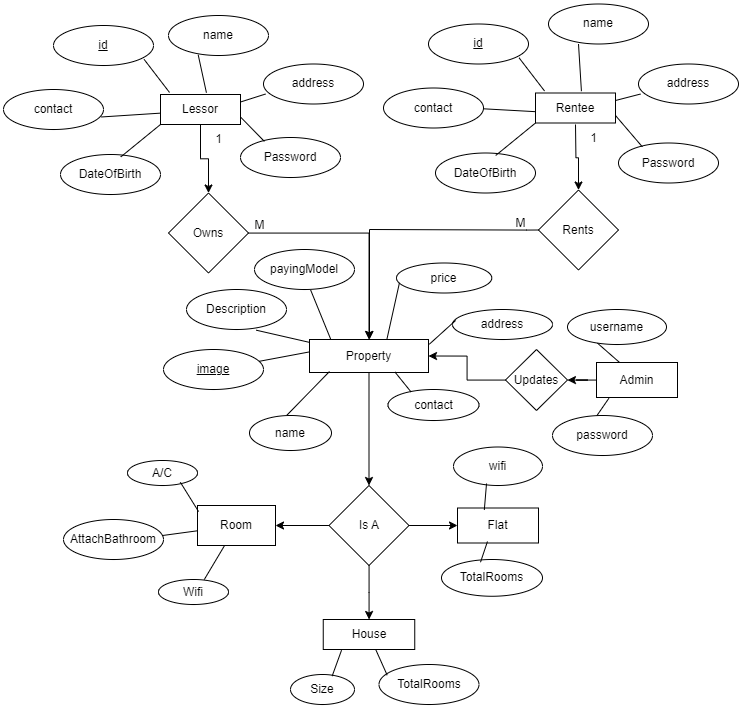


Fig 2.2 : ER diagram of rental System (Hamro Kotha)

### 2.3.3 Activity Diagram

**Activity Diagram for User**

The activity diagram shows that the Rental system for users starts with the registration. After the registration the users can login. The login details are verified. If the credentials match, login is successful. The users can search properties.

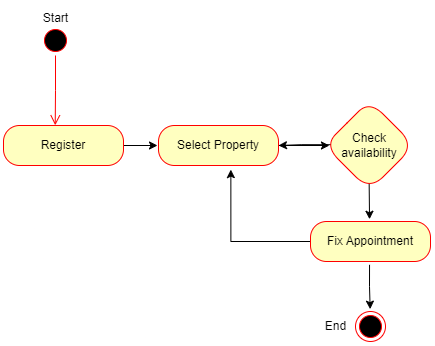


Fig 2.3 : Activity diagram of Rental System User (Hamro Kotha)

### 2.3.4 Use Case diagram

There are two actors in this system. One is Admin and another is User. Admin can directly login with his/her credentials. Admin can add users and properties . Admin can modify the property and its information. Users need to register first to login to the website. Users can search desired property and can post the properties for rent.

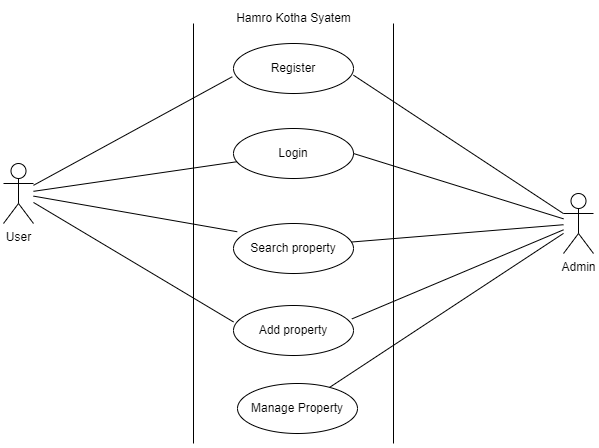


Fig 2.4 : Use Case of Rental System (Hamro Kotha)

### 2.3.5 Class Diagram

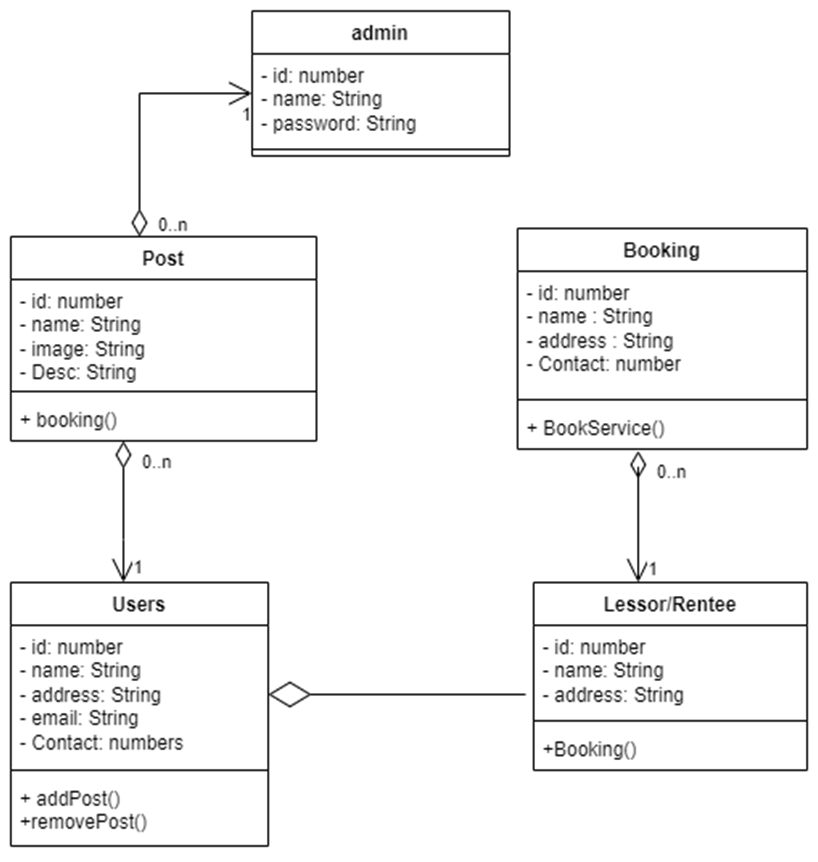


Fig 2.5 : Class Diagram of Rental System (Hamro Kotha)

## 2.4 Implementation

### 2.4.1 Tools Used

Following are the tools and framework used for development of this system:

**HTML, CSS, Bootstrap**

These languages are used in this system to create different pages and design them. Different blocks, information, links, heading, etc are created using html. The contents of html are decorated and designed to give best user experience by CSS.

**Django**

This framework is used for easy and responsive backend development. It uses MVT approach of architecture in system development.

**Python**

This language is used to create models and views. It is also used in templates to access models and display information.

**MySQL**

System needs a database to store data and information. So MySQl database is used to store data and perform CRUD operations.

### 2.4.2 Implementation Details of Modules

Some of the modules in this system are :

**Admin Module**

1. Admin can add/delete/update property details.
2. Admin can manage appointments.
3. Admin manages any issues regarding the system.
4. Admin manages inquiries.

**User Module**

1. Users can register their own details.
2. Users can login the system with credentials.
3. Users can book property.
4. Users can add properties.

## 2.5 Testing

In this phase, testing be conducted in accordance with the Software Requirement specification to meet the standards. The prime focus remains on the empty field’s submission, direst passing the query string. The test will be performed for each module for its proper functionality.

### 2.5.1 Unit Testing

In this individual units or components of a software will be tested. The purpose of this testing is to validate each unit of software code to perform as expected. This testing will be taken while developing the modules or units and coding phase of development only after successful validation of the module.

**Test Cases for Unit Testing**

In unit testing, we designed the entire system in a modularized pattern and each module is tested. Until we get the accurate output from the individual module, we work on the same module. The input forms are tested so that they do not accept invalid input.

Table 2.2 Login

| Use-Case Identifier | UC1: Log into the system |
| --- | --- |
| Primary Actor | Admin, Store staff, User |
| Secondary Actor | None |
| Description | The Admin/Store Staff/User can login to the system through a login form for security. |
| Pre-condition | The Admin/Store Staff/User has to know the required username and password. |
| Post-condition | The Admin/Store Staff/User can perform the required action in the system. |
| Success Scenario | Enter into logged in homepage |
| Failure Scenario | Stays in same page |

Table 2.3 Registration

| Use-Case Identifier | UC2: Registration |
| --- | --- |
| Primary Actor | User |
| Secondary Actor | None |
| Description | The user can perform registration through a form. |
| Pre-condition | The user should enter valid information. |
| Post-condition | The database must be updated after the registration. |
| Success Scenario | Redirects to logged in homepage |
| Failure Scenario | Registration failure message should be  displayed. |

Table 2.4 Add Property

| Use-Case Identifier | UC6: Add Property |
| --- | --- |
| Primary Actor | User |
| Secondary Actor | Admin |
| Description | The Staff adds a new property record into the system. |
| Pre-condition | The user should be logged-in to the system. |
| Post-condition | The new record can be viewed in the database. |
| Success Scenario | The new property is available in the system for viewing as well as booking. |
| Failure Scenario | Not received success message. |

Table 2.5 Fixing Appointment

| Use-Case Identifier | UC7: Fixing Appointment |
| --- | --- |
| Primary Actor | User |
| Secondary Actor | Admin |
| Description | The user makes a booking for the required property through  a button/form. |
| Pre-condition | The user should be logged into the system. |
| Post-condition | The user successfully places the booking into the system. |
| Success Scenario | The booking details are recorded into the system. |
| Failure Scenario | The database is not connected or misconfigured and the order is not placed. |

### 2.5.2 Integrated Testing

Table 2.6 System Testing

| **step** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/**  **Fail)** | **Notes** |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | Navigate to login page |  | Login page should open | As expected, user is navigated to login page | pass |  |
| 2 | Provide valid username and password | Username: poudel  Password: bipin123 | User is able to login with valid username and password | As expected, | pass |  |
| 3 | Navigate to main page |  | User is navigated to main page | As expected, | pass |  |
| 4 | Select service module |  | User is able to view services | As expected, | pass |  |

In this phase, tests will be conducted in accordance with the Software Requirement specification to meet the standards. The prime focus remains on the empty field’s submission, direct passing the query string. The test will be performed for each module for its proper functionality.

Testing is the process where the code along with the system is tested during the software development phase. Similarly, it is the process of finding the faults in the software development process. The test result may be negative. The positive test result shows that there is error free in the system whereas the negative test result indicates the error in the system. The testing also continues after the user uses the product.

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# Chapter III: Discussion and Conclusion

## **3.1 Discussion**

The rental system project addresses a key problem identified during the market visit, which revolves around the challenge of finding and accessing available rooms, houses, and flats for rent. To overcome this problem, a software solution has been developed, enabling the system to store and manage relevant information such as service details and lessor information. This system is anticipated to be highly beneficial for the market, as it streamlines the process of searching and accessing rental properties, providing convenience and efficiency to both renters and lessors. By offering a centralized platform for property listings and information, the rental system aims to enhance the overall experience of finding and renting properties, ultimately meeting the needs and expectations of the market.

## **3.2 Conclusion**

In conclusion, the rental system project has been successfully completed within the specified timeline, meeting all the objectives set forth. Through evaluation and feedback from supervisors, it is expected that the system will fulfill the requirements and prove to be highly beneficial for users. The project has provided valuable practical knowledge and experience in working within a real organizational environment, enhancing skills and abilities to effectively contribute in such settings.

The development of this rental system aims to address the existing challenges in the current property access system, providing users with a streamlined and efficient platform for property search and access. The system emphasizes data security and user authentication, ensuring that only registered and verified users can access and utilize the system. The objective is to create a user-friendly and effective system that meets the needs of individuals searching for rental properties.

As the project progresses, we anticipate gathering valuable user feedback to further evaluate and enhance the system's effectiveness and convenience. This summer project has proven to be a valuable opportunity to acquire practical knowledge, improve skills, and gain the ability to work in real-world environments. Overall, the rental system project is expected to offer a reliable and efficient solution for property seekers, simplifying the process of finding and accessing rental properties.

## **3.3 Recommendation**

Some of the recommended features to enhance the system are mentioned as:

1. Advanced Search Filters: Implementing advanced search filters based on location, price range, amenities, and other relevant criteria can help users find suitable rental properties more efficiently, saving time and effort.

2. User Reviews and Ratings: Introducing a user review and rating system allows tenants to share their experiences and provide feedback on the properties they have rented. This feature enables other users to make more informed decisions when selecting rental properties.

3. Mobile Application Development: Developing a mobile application for the rental system enables users to access property listings, submit inquiries, and manage their rental transactions on the go, providing convenience and accessibility.

4. Social Media Integration: Integrating social media platforms allows users to easily share property listings, attract more potential tenants, and expand the reach of the rental system to a wider audience.

5. Implement OTP (One Time Password) Functionality: Adding OTP functionality during the login and password reset processes can provide an additional layer of security, ensuring that only authorized users can access the system.

By incorporating these additional recommendations, the rental system can offer improved search functionality, user feedback, mobile accessibility, and social media integration, enhancing the overall user experience and expanding the system's capabilities.

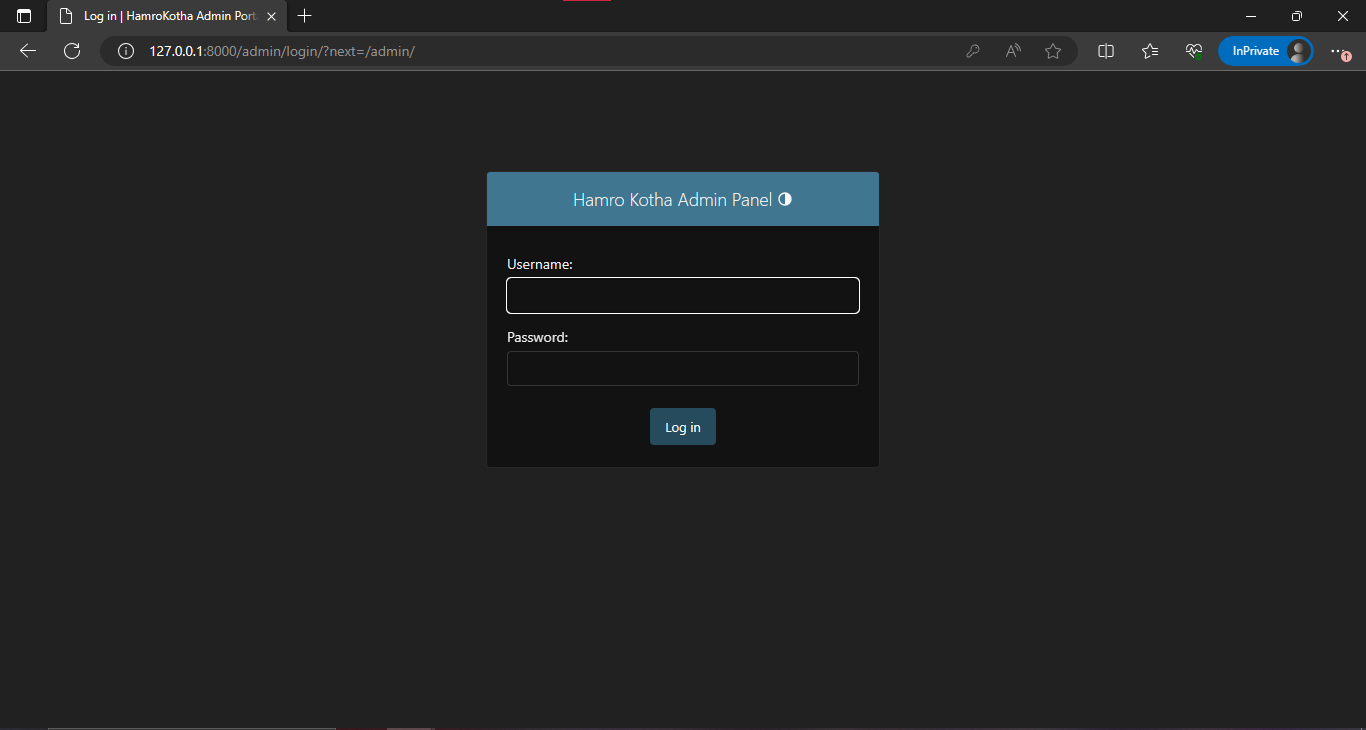
# References:

[1] Feasibility Study:<https://chat.openai.com/chat>

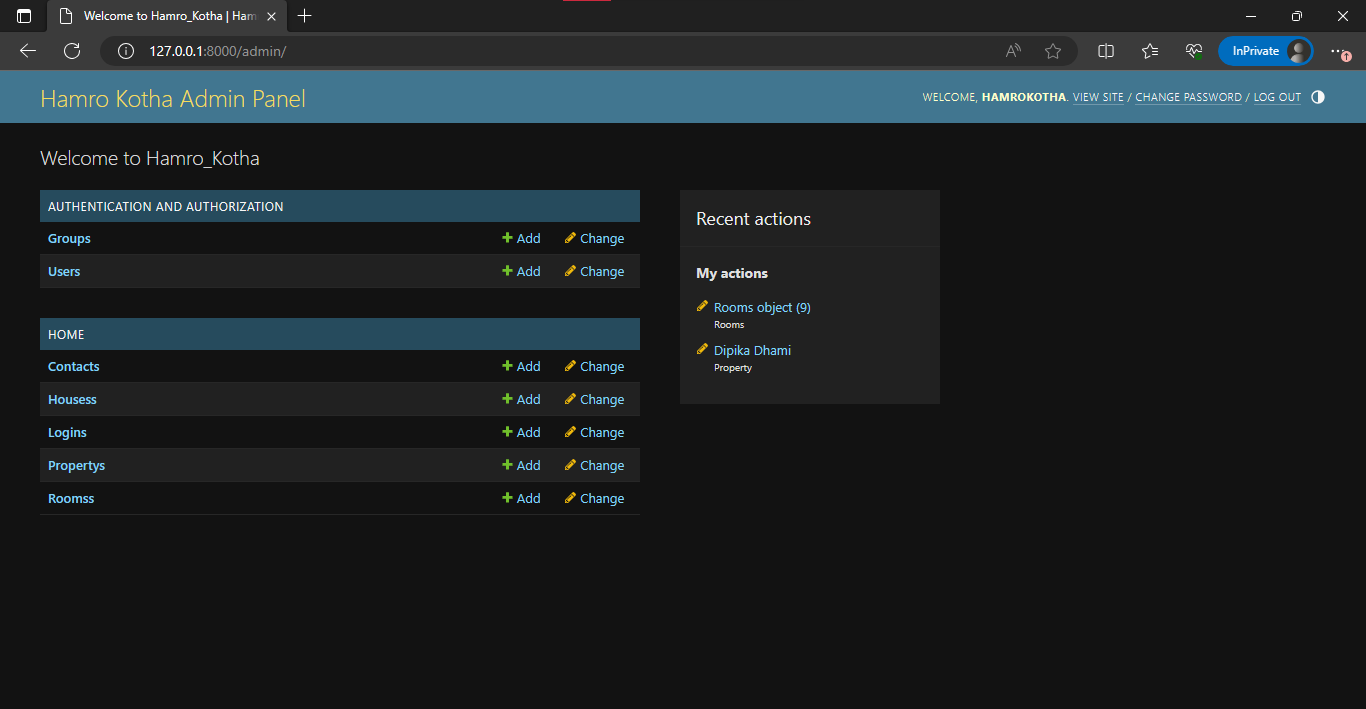
[2] For drawing system diagrams:<https://app.diagrams.net/>

# Appendices

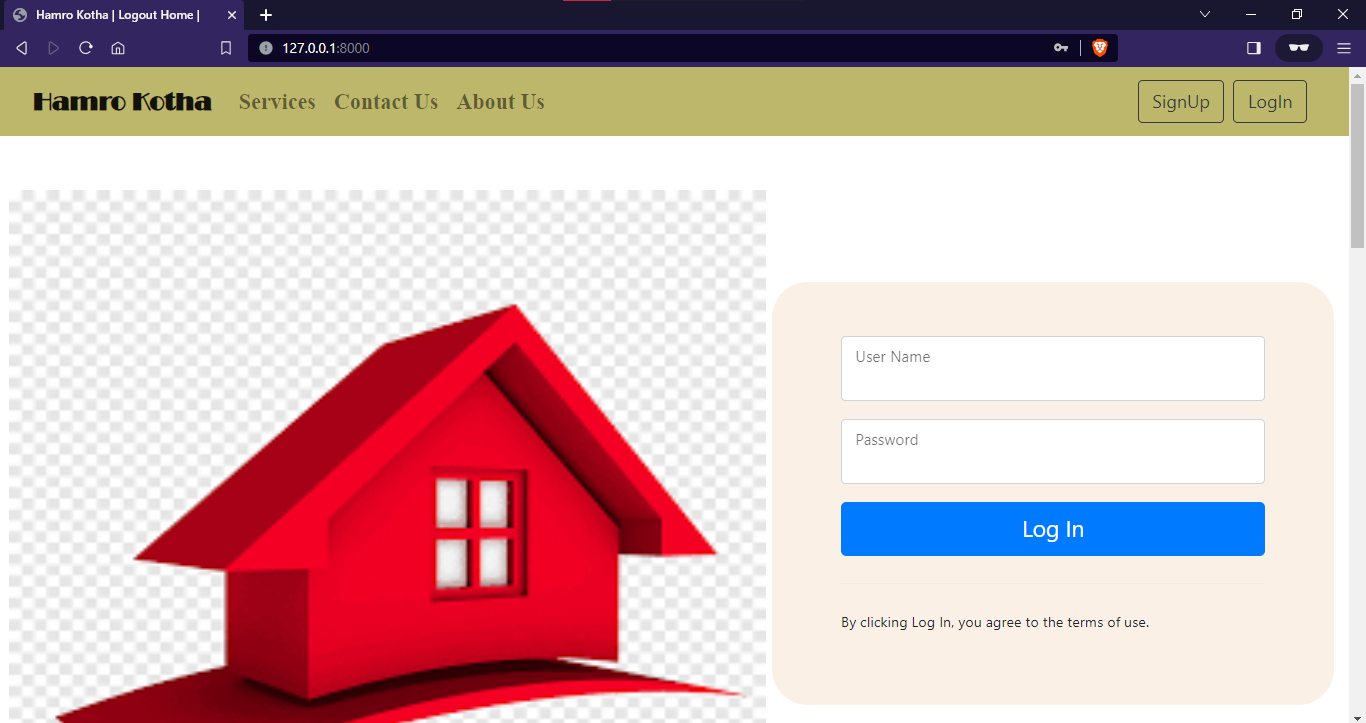
Note: All the information placed in the Annex is imaginary and dummy.



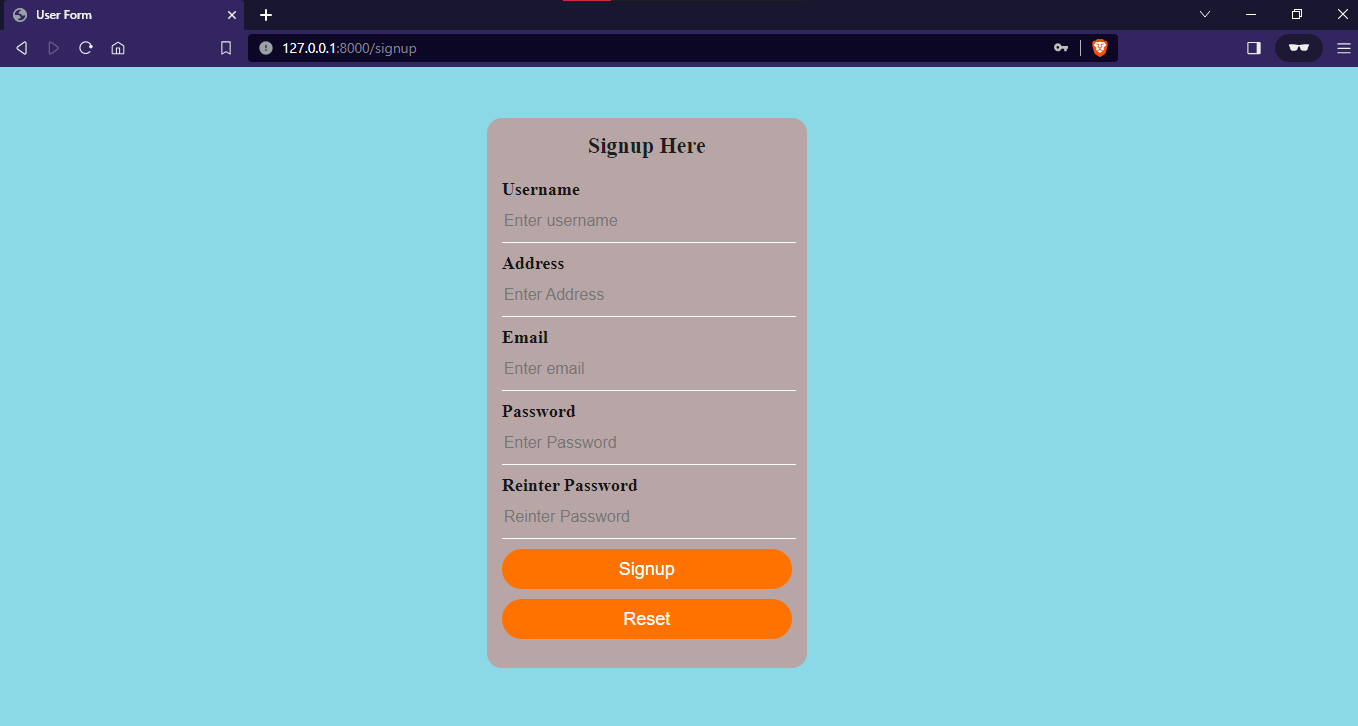
**Annex 1: Admin Login Page**



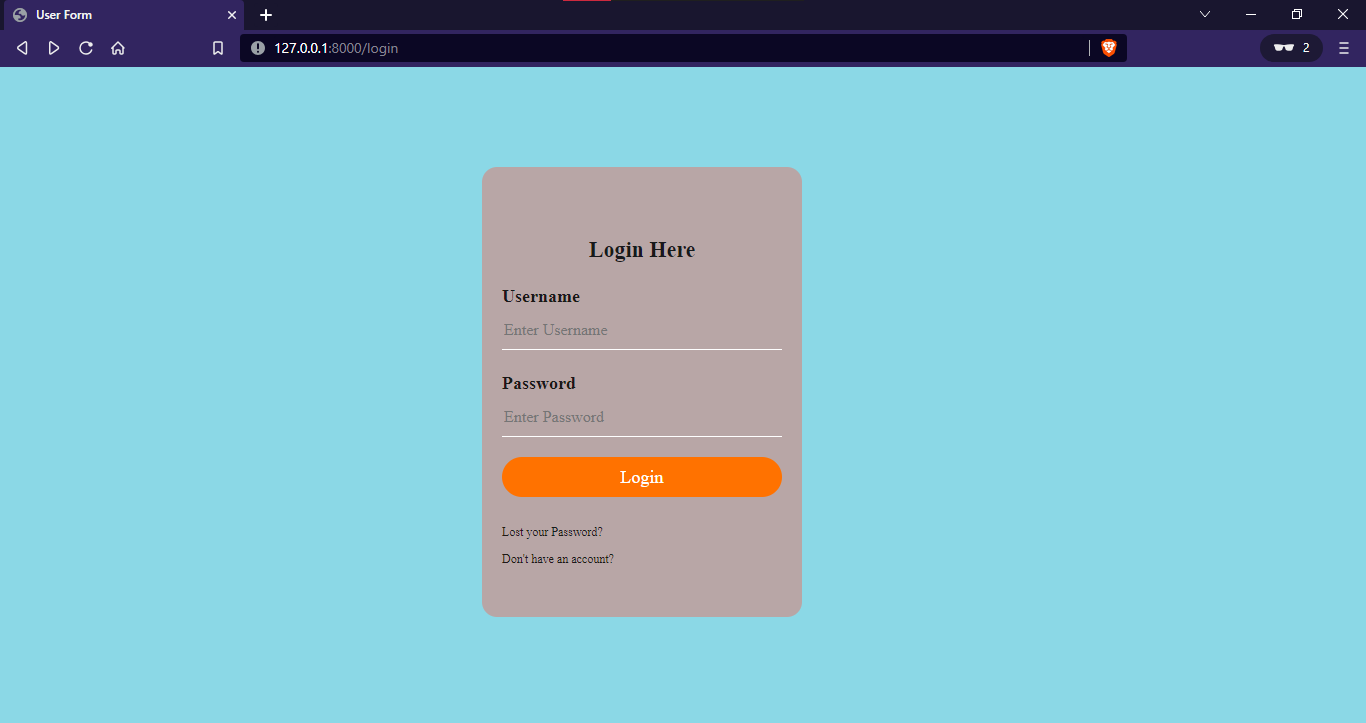
**Annex 2: Admin Panel**

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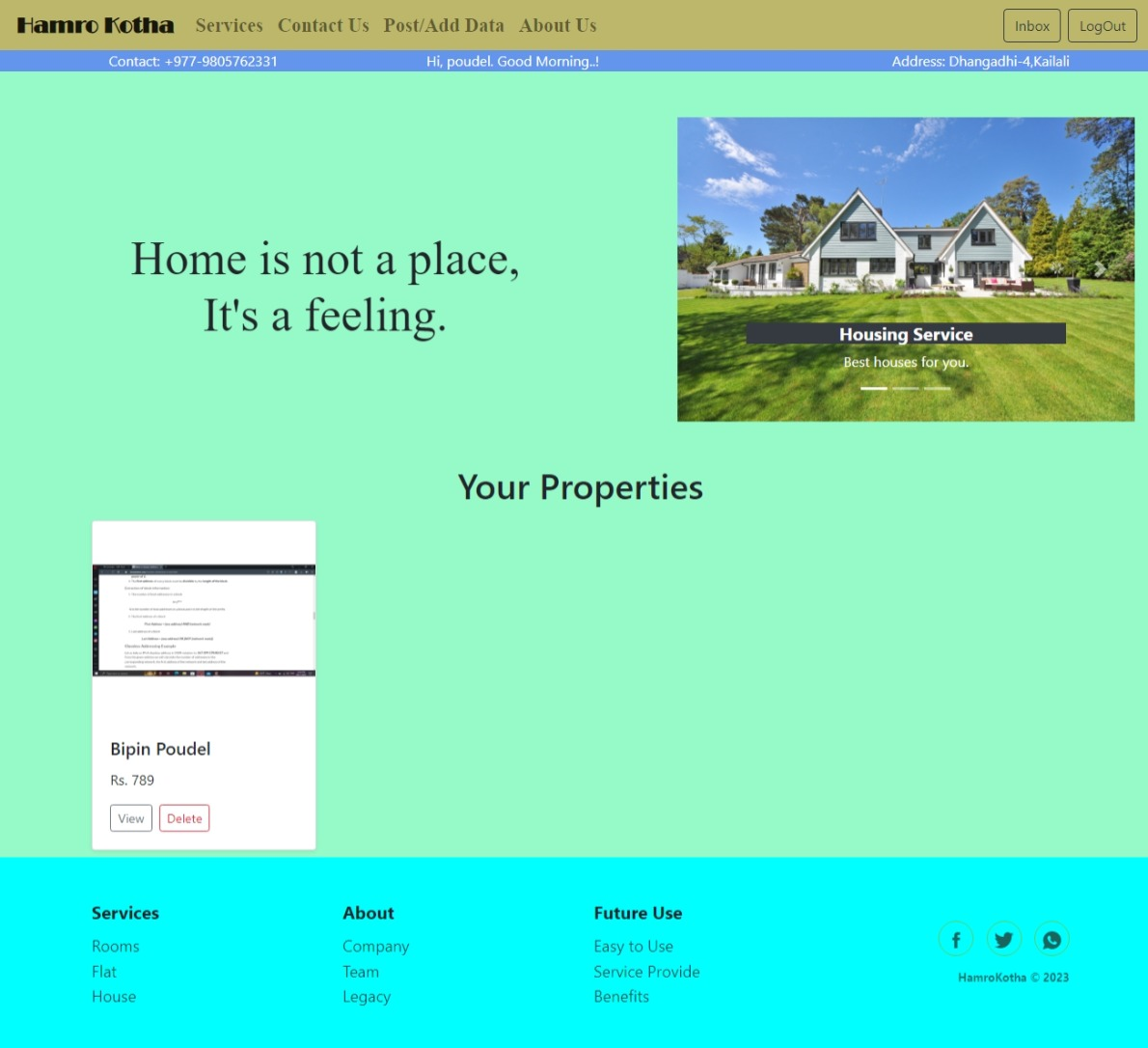
**Annex 3: Log out homepage**

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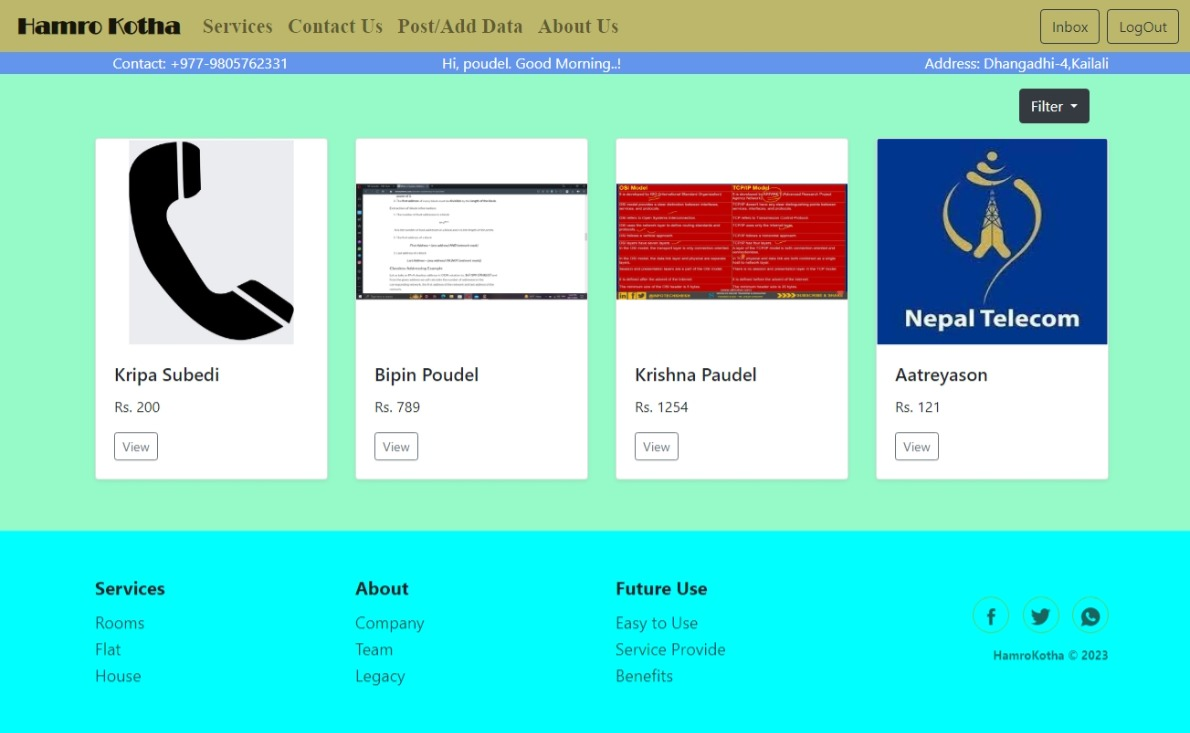
**Annex 4: Signup / Register Module**

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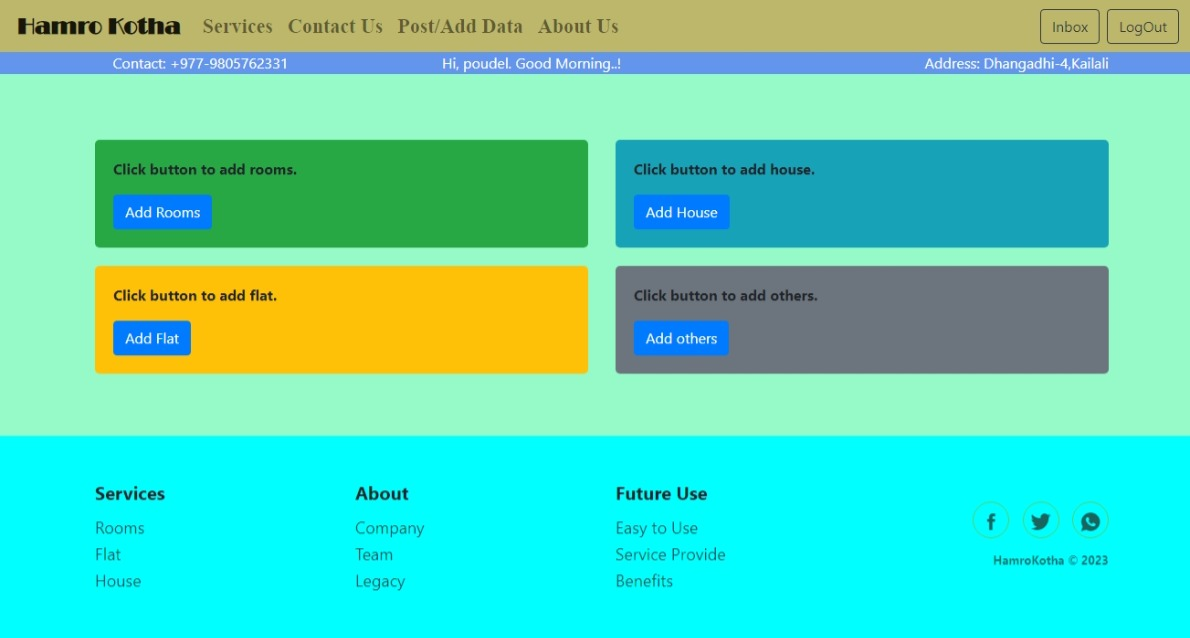
**Annex 5: Login Page**

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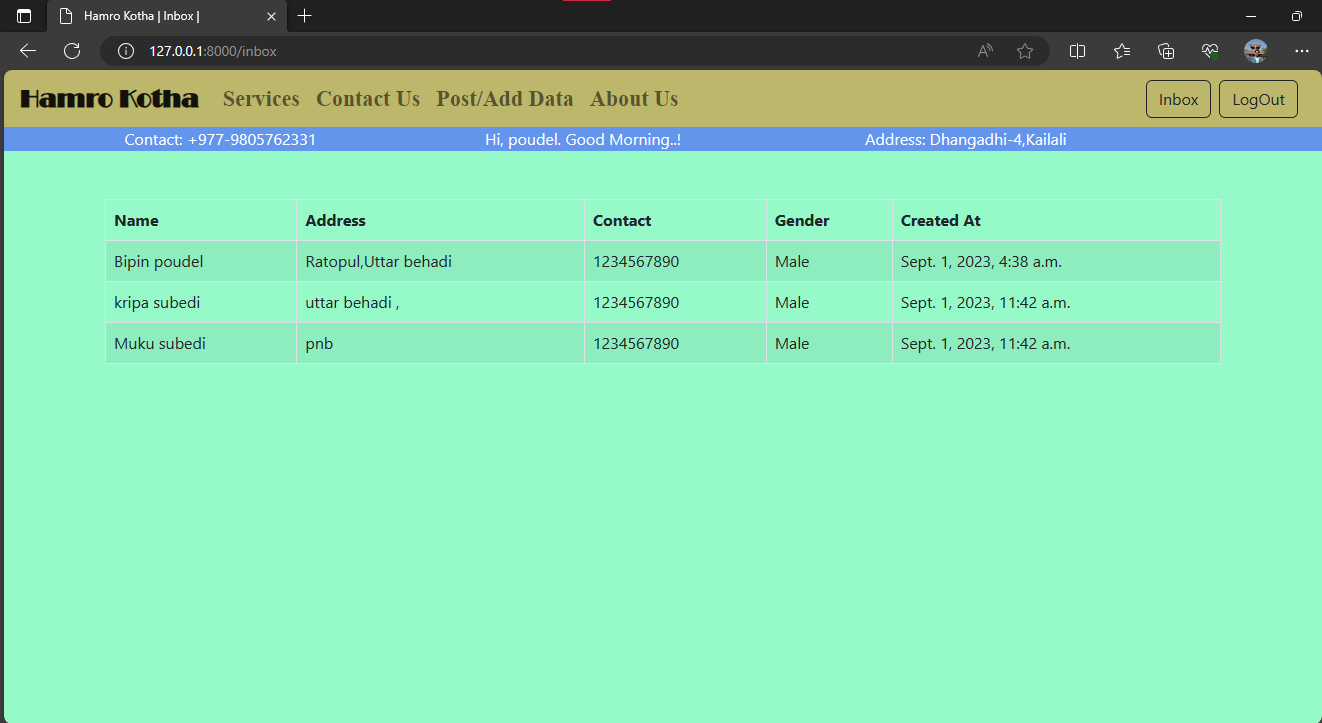
**Annex 6: Logged In Dashboard**

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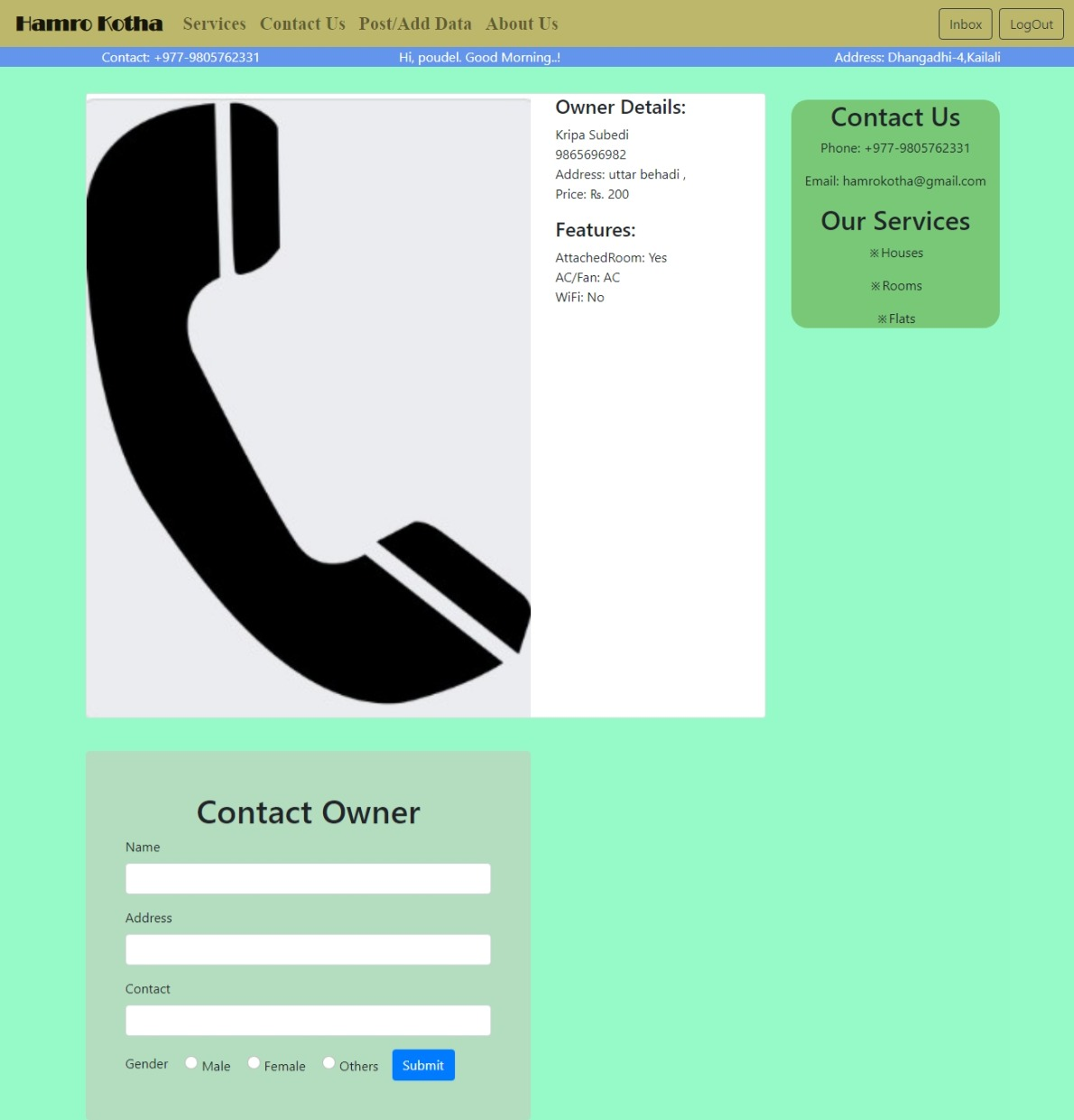
**Annex 7: Service page**

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**Annex 8: property posting page**

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**Annex 9: inbox Page**

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**Annex 10: Service Details page**