A Project Report On "PG HUNT"

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as

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Under the Guidance of

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Company Name: CALCS PVT. LTD.

Submitted To

Parul Institute of Computer Application,

Faculty of IT & Computer Science

Parul University





PARUL INSTITUTE OF COMPUTER APPLICATION

CERTIFICATE

This is to certify that **Khushi Mukesh Goda, Jayswal Ajay**the\students at Parul Institute of Computer Application, have satisfactorily completed the project entitled **"PG HUNT"** as a part of course curriculum in BCA semester-VI for the academic year 2023-2024 under guidance of **Prof. Saumil Trivedi.**

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Quality of work	Grade	Sign	of	Internal
		guide		
Poor / Average /	B /B+ / A / A+			
Good /				
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			ion:

HOD, Principal,

Dr. Hina Chokshi Dr Priya Swaminarayan

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1. Company Profile

CALCS Company Profile

Ganesh Nagar, Link Road kandivali West Mumbai 400067

Overview

CALCS: A Software-Powered Enterprise Empowering Businesses

In the heart of the dynamic metropolis of Mumbai, CALCS stands tall as a cutting-edge software company that seamlessly integrates training services to foster growth and success. Their expertise extends beyond traditional training services, encompassing the development and implementation of SAAS (Software as a Service) products. CALCS seamlessly blends these two domains, catering to the diverse needs of businesses seeking comprehensive solutions to enhance their operations and achieve their goals.

The Essence of CALCS: A Fusion of Expertise:

CALCS's prowess lies in its ability to harmonize training services with SAAS product development. They recognize that training is not merely an isolated activity but an integral part of the overall growth strategy. Their SAAS products are designed to seamlessly integrate with training programs, providing a holistic approach to skill development and organizational advancement.

Tailored SAAS Solutions for a Precise Fit:

CALCS understands the unique requirements of each business, and their SAAS products are meticulously crafted to address these specific needs. They employ agile development methodologies, ensuring that their solutions evolve alongside the changing demands of the market. CALCS's SAAS products are renowned for their flexibility, adaptability, and ease of use, empowering businesses to optimize their operations and gain a competitive edge.

Training Services: Nurturing Human Capital:

Alongside their SAAS expertise, CALCS is deeply committed to nurturing human capital through comprehensive training services. They believe that empowering individuals is the cornerstone of organizational success. Their training programs are designed to equip employees with the knowledge, skills, and mindset required to excel in their respective roles.

CALCS extends the learning experience beyond the classroom, fostering a collaborative and supportive learning environment. Their trainers are not just instructors; they are facilitators of knowledge sharing and

continuous learning. CALCS encourages active participation, meaningful discussions, and a culture of lifelong learning.

Partnering with Businesses for Success:

CALCS's approach is not merely about providing products or services; it's about forging partnerships with businesses to achieve their strategic objectives. They collaborate closely with clients to understand their specific needs and tailor their solutions accordingly. CALCS is committed to providing exceptional value and ensuring that their clients realize a tangible return on investment.

Empowering Businesses, Achieving Excellence:

With its expertise in SAAS development and training services, CALCS is a driving force behind organizational growth and success. They empower businesses to harness the power of technology and human capital simultaneously, propelling them towards excellence. CALCS is a trusted partner that businesses can rely on to achieve their goals and revolutionize their operations.

Goals

Become a leading provider of SAAS products and training services in India.

Expand its client base to include businesses of all sizes and industries.

Develop innovative SAAS products that address the evolving needs of businesses.

Create a reputation for providing high-quality training services that deliver tangible results.

Empower businesses to achieve their strategic objectives through technology and human capital development.

Contribute to the growth and development of the Indian economy.

Featured:

- ✓ https://boroktimes.com/manoj-kambers-calcs-from-startup-to-sensation-now-the-top-company-in-gujarats-tech-scene/
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- ✓ https://www.instagram.csom/calcs_cs/

2. Project Profile

2.1. Project Definition:

PG Hunt is a comprehensive web application designed to simplify and streamline the process of finding paying guest accommodations. The platform is built on a robust technology stack that includes HTML, CSS, JavaScript, Bootstrap, MongoDB, NodeJS, Express. JS, and Socket.io, ensuring a seamless and responsive user experience. The primary objective of PG Hunt is to address the challenges faced by individuals seeking suitable PG accommodations in an unfamiliar city. With the rising trend of migration for education and work, finding reliable and comfortable PGs has become a crucial aspect of settling into a new place. PG Hunt aims to bridge the gap between landlords offering PG facilities and individuals in search of well-suited accommodations. The user interface is designed to be intuitive and user-friendly, allowing users to easily navigate through the platform. The home page provides a search bar where users can input their preferences, such as location, budget range, and amenities. The advanced search functionality is powered by MongoDB, ensuring efficient and accurate results. The listing page displays detailed information about available PGs, including photographs, amenities, rental costs, and contact details. Users can filter, and sort results based on their specific requirements, facilitating a tailored search experience. Integration with Socket.io enables realtime updates, ensuring that users receive immediate notifications about new listings or changes in availability. To enhance the user experience further, PG Hunt incorporates a user authentication system. Registered users can create profiles, save preferred searches, and track their communication with landlords. Additionally, the platform integrates a secure payment gateway for rental transactions, providing a convenient and secure way for users to finalize their bookings. The administration panel, powered by NodeJS and Express's, allows landlords to create and manage their PG listings. Landlords can update property details, upload images, and communicate with potential tenants through an integrated messaging system. This two-way communication feature fosters transparency and trust between landlords and tenants. The incorporation of ReactJS ensures a dynamic and responsive front-end, delivering a seamless user experience across devices. The mobile responsiveness of PG Hunt is crucial, considering the on-the-go nature of users searching for PG accommodations. Overall, PG Hunt aims to be a comprehensive solution for both landlords and individuals seeking PG accommodations. It leverages cutting-edge technologies to provide a reliable, secure, and userfriendly platform that simplifies the otherwise daunting task of finding and securing suitable PGs. Through its intuitive interface, advanced search capabilities, and real-time updates, PG Hunt is positioned to revolutionize the way people search for and secure PG accommodations, making the process efficient, transparent, and user-centric.

2.2. Project Description: -

PGHunt is an innovative web-based application designed to streamline the process of finding suitable accommodation for students and professionals looking for paying guest (PG) facilities. The platform aims to simplify the search for PG accommodations by providing a user-friendly interface and powerful search capabilities.

Key Features: User Registration and Profile Management: Users can create accounts, manage personal information, and set preferences related to accommodation. Secure authentication ensures the safety of user data.

Advanced Search Functionality:

Robust search filters allowing users to specify location, budget, amenities, and other preferences.

Real-time search results with detailed information about available PG accommodations.

Property Listings: Property owners can list their PG accommodations with detailed descriptions, images, and pricing. Verified listings to ensure the accuracy of information.

Interactive Maps:

Integration of maps to show the location of each PG accommodation. Users can explore the neighbourhood and nearby amenities.

Communication Platform:

In-app messaging system for direct communication between users and property owners. Notifications for new messages and updates on selected properties.

Reviews:

Users can leave reviews for the PG accommodations they have experienced.

Helps build a community-driven feedback system for trust and transparency.

Booking and Reservation System:

Secure booking system with payment integration for reservation of chosen accommodations.

Calendar view to manage booking dates.

Dashboard and Alerts:

Personalized user dashboards for managing saved searches, favourite listings, and ongoing bookings.

Email or push notifications for new listings and updates based on user preferences.

Admin Panel:

Admin dashboard for monitoring and managing user accounts, property listings, and resolving disputes.

Tools for ensuring the quality and legitimacy of listings.

Technologies Used:

Frontend: HTML, CSS, JavaScript.

Backend: Node.js, Express.js

Database: MongoDB

Maps Integration: Google Maps API

Authentication: JWT (JSON Web Tokens)

Payment: Stripe or other secure payment gateways

Benefits:

PGHunt simplifies the process of finding and booking PG accommodations, saving users time and providing a trustworthy platform for both property owners and seekers. This project not only demonstrates your technical skills but also addresses a real-world problem, making it relevant and valuable. Ensure to discuss and adapt these features based on the actual goals and scope of your project.

2.3. Existing/Legacy System

Description: "PGHunt" is a current-generation web-based platform designed to assist individuals, particularly students and professionals, in finding suitable paying guest (PG) accommodations. While it represents a significant advancement over traditional methods, there are still areas where improvements can be made to enhance user experience and address emerging needs.

Feature	Existing System	New System
User Interface	Cluttered and outdated	Modern, intuitive, and user-friendly
Database	Limited data and sources	Expanded database with more sources
Application Process	Manual and paperwork Intensive	Online application with document upload
Mobile Accessibility	Limited or no mobile support	Responsive design for mobile compatibility
Data Security	Basic security measures	Enhanced data encryption and privacy features
Feedback Mechanism	Limited or no feedback on applications	Automated feedback and application tracking
Integration	Limited integration with other systems	Seamless integration with university systems
Analytics	Minimal data analytics capabilities	Robust analytics for tracking trends and patterns
Cost	High operational and maintenance costs	Optimized for cost- effectiveness and efficiency

2.4. Problem Statement:

The current accommodation search process is inefficient, making it challenging for users to quickly and accurately find paying guest accommodations that match their preferences in terms of location, budget, and amenities.

Outdated Listing Information:

Problem Statement: Property listings lack real-time updates, resulting in outdated information for users. This leads to potential frustrations, wasted time, and a lack of trust in the accuracy of the platform.

Manual Communication Bottlenecks:

Problem Statement: The communication between accommodation seekers and property owners is predominantly manual, causing delays and miscommunication. There's a need for a more streamlined and real-time communication system within the platform.

Complex Booking Processes:

Problem Statement: The current booking process is complex and may involve manual steps, hindering a smooth and efficient experience for users. Simplifying and automating the booking process is essential for user satisfaction.

Lack of Transparent Feedback:

Problem Statement: Users face challenges in assessing the quality of accommodations due to the absence of a standardized rating and review system. Implementing a transparent feedback mechanism is crucial for building trust among users.

Limited Security Measures:

Problem Statement: Users may have concerns about the security of their personal information and transactions on the platform. Strengthening security measures is vital to ensure user data protection and build user confidence.

Poor Mobile Accessibility:

Problem Statement: The platform may not be optimized for mobile devices, limiting accessibility for users who prefer to search for accommodations on smartphones. Enhancing mobile responsiveness is crucial for user convenience.

Unstandardized Listing Format:

Problem Statement: Property listings may lack a standardized format, leading to inconsistencies and difficulties in comparing different accommodations. Establishing a uniform structure for listings will improve user experience and decision-making.

Geographical Information Gaps:

Problem Statement: The platform may not effectively utilize geographical information to provide insights into the neighbourhood and nearby amenities. Integrating interactive maps and comprehensive neighbourhood details can significantly enhance user experience.

Scalability Concerns:

Problem Statement: The current system may face challenges in accommodating a growing user base and an increasing number of property listings. Addressing scalability issues is essential for ensuring a seamless experience as the platform expands.

2.5. Needs for New System:

Certainly, based on the context of your project "PGHunt," here are the needs that justify the development of a new system:

Current Situation: The existing system lacks advanced search functionality, making it challenging for users to find specific paying guest accommodations based on detailed preferences.

Need for a New System: Implementing advanced search features will enhance user satisfaction, allowing users to filter and find accommodations based on specific criteria such as location, budget, and amenities.

Efficient Booking Processes: -Efficient booking processes are crucial for the success of a platform like "PGHunt" to provide a seamless and user-friendly experience for both accommodation seekers and property owners. Here's how efficient booking processes can be implemented in the context of "PGHunt":

User-Friendly Booking Interface: -

Creating a user-friendly booking interface for the "PGHunt" platform is crucial for providing a seamless and positive experience for users seeking paying guest accommodations. The booking interface is a critical touchpoint where users interact with the platform to make reservations, and its design and functionality play a significant role in influencing user satisfaction. Here's a detailed description of key elements and considerations for crafting a user-friendly booking interface:

Clean and Intuitive Design:

The booking interface should feature a clean and intuitive design that minimizes clutter and presents information in a straightforward manner. The use of a clear color scheme, consistent typography, and visually appealing elements contributes to a visually pleasing and easy-to-navigate interface. The design should guide users through the booking process logically, ensuring that each step is clear and intuitive.

Accommodation Availability Checks:

A user-friendly booking interface should incorporate a feature that allows users to quickly and easily check the availability of accommodations for their preferred dates. This could involve a calendar view where users can input their desired check-in and check-out dates and instantly see which accommodations are available for booking.

Transparent Pricing:

Clarity on pricing is essential for user trust and satisfaction. The booking interface should clearly display the total cost of the reservation, including any additional fees, before users confirm their booking. Itemizing the costs, such as accommodation fees, taxes, and any applicable service charges, provides transparency and helps users understand the breakdown of expenses.

Detailed Accommodation Information:

Each accommodation listing within the booking interface should provide comprehensive details, including high-quality images, amenities, house rules, and any other relevant information. Users should be able to access all the information they need to make an informed decision about the accommodation they are booking.

Secure and Trustworthy Payment Process:

The payment process is a critical component of the booking interface, and it should instil confidence in users. Implement a secure and widely trusted payment gateway to handle transactions. Clearly communicate the security measures in place, such as SSL encryption, to reassure users that their financial information is safe.

Feedback and Review Integration:

The booking interface should encourage users to leave feedback and reviews after their stay. Integrating a feedback and review system contributes to transparency and builds trust within the community. Users appreciate the opportunity to share their experiences, and reviews can serve as valuable information for future users.

Mobile Responsiveness:

In today's mobile-centric world, ensuring that the booking interface is optimized for mobile devices is crucial. A mobile-responsive design allows users to make bookings seamlessly on their smartphones or tablets. Elements such as touch-friendly buttons and a simplified layout contribute to a positive mobile experience.

Accessibility Features:

Inclusivity is key to user-friendliness. Ensure that the booking interface adheres to accessibility standards, making it usable for individuals with disabilities. This includes providing alternative text for images, ensuring keyboard navigation, and using clear and concise language.

Progressive Disclosure:

Adopt a progressive disclosure approach, presenting information to users progressively as they move through the booking process. This prevents overwhelming users with too much information at once and ensures that they focus on one step at a time.

In conclusion, a user-friendly booking interface for "PGHunt" encompasses a holistic design that prioritizes clarity, transparency, and ease of use. By incorporating these elements and considerations, the platform can offer a booking experience that delights users and encourages them to make reservations confidently. A well-designed booking interface contributes not only to the functionality of the platform but also to the overall satisfaction and trust of its users.

2.6. Proposed System: -

The proposed system for "PGHunt" aims to overcome the limitations of the existing system and introduce new features to create a more efficient, user-friendly, and comprehensive platform for finding paying guest accommodations. Here's an outline of the proposed system:

Real-Time Communication Platform:

- Integrate a real-time messaging system within the platform to facilitate direct and efficient communication between accommodation seekers and property owners.
- Notifications for new messages and updates to keep users informed about their interactions.

Comprehensive Property Listings:

- Allow property owners to create detailed listings with comprehensive information, including high-quality images, a list of amenities, house rules, and any other relevant details.
- Ensure real-time updates of property listings to maintain accuracy and relevance.

Standardized Rating and Review System:

- Implement a standardized rating and review system where users can leave feedback and ratings for the accommodations they have experienced.
- Display reviews prominently on property listings to help users make informed decisions.

Enhanced Security Measures:

- Strengthen security measures to ensure the protection of user data and transactions. Implement secure authentication methods and use encryption protocols to safeguard sensitive information.
- Provide clear privacy policies and transparent data handling practices to build trust among users.

Mobile Optimization:

- Optimize the platform for mobile devices to enhance accessibility and cater to users who prefer searching for accommodations on smartphones and tablets.
- Ensure a responsive design that provides a seamless experience across various devices.

Standardized Listing Format:

- Establish a standardized format for property listings to improve consistency and make it easier for users to compare different accommodations.
- Include essential information in a structured format, enhancing the overall user experience.

Geographical Information Integration:

- Utilize geographical information to enhance property listings with interactive maps, allowing users to explore the neighbourhood and nearby amenities.
- Provide location-based insights to help users make more informed decisions.
- Implement robust infrastructure and database management to support future expansion.

User-Friendly Dashboard:

- Develop a personalized dashboard for users, allowing them to manage saved searches, Favourite listings, ongoing bookings, and communication history.
- Provide a clear and intuitive interface for users to navigate and customize their preferences.

Notification System:

- Implement a notification system to alert users about new listings, messages, booking confirmations, and other relevant updates.
- Allow users to customize notification preferences based on their needs.

The proposed system for "PGHunt" combines these features to create a comprehensive and efficient platform, addressing the identified challenges and providing a superior user experience for both accommodation seekers and property owners.

2.7. Scope: -

The scope of the "PGHunt" system project encompasses the features, functionalities, and goals that the project aims to achieve. Below is an outline of the potential scope for the "PGHunt" system:

User Registration and Authentication:

- Allow users to create accounts securely.
- Implement authentication mechanisms to ensure the confidentiality and security of user data.

Property Listings:

- Enable property owners to list their accommodations with detailed information, including pricing, amenities, house rules, and high-quality images.
- Implement a standardized format for property listings to improve consistency and user experience.

Real-Time Communication:

- Integrate a real-time messaging system for direct communication between accommodation seekers and property owners.
- Implement notifications for new messages and updates to keep users informed.

Automated Booking System:

- Develop a secure and automated booking system that allows users to check availability, select dates, and complete reservations within the platform.
- Provide confirmation notifications and details for both users and property owners.

Review System:

- Implement a standardized rating and review system where users can leave feedback and ratings for accommodations.
- Display reviews prominently on property listings to aid users in making informed decisions.

Security Measures:

- Strengthen security measures to ensure the protection of user data and transactions.

- Implement secure authentication methods and encryption protocols to safeguard sensitive information.

Mobile Optimization:

- Optimize the platform for mobile devices to enhance accessibility and user experience.
- Ensure a responsive design that provides a seamless experience across various devices.

Geographical Information Integration:

- Utilize geographical information to enhance property listings with interactive maps.
- Provide location-based insights to help users explore the neighbourhood and nearby amenities.

Admin Dashboard:

- Develop a user-friendly dashboard that allows admin to manage, Favourite listings, ongoing bookings, and communication history.
- Provide a clear and intuitive interface for users to navigate and customize their preferences.

Admin Panel:

- Develop an admin panel for platform administrators to manage user accounts, property listings, resolve disputes, and monitor overall system performance.

The scope of the "PGHunt" system project is comprehensive, covering the entire user journey from registration and accommodation search to booking and communication. It aims to address the identified challenges and provide a robust, user-friendly platform for both accommodation seekers and property owners.

2.8. Outcome of PGHunt: -

The outcome of the "PGHunt" project is a fully functional and user-friendly web-based platform that revolutionizes the process of finding and securing paying guest accommodations. The project aims to address existing challenges in the accommodation search process and introduce innovative features to enhance the overall user experience. Here are the detailed outcomes of the "PGHunt" project:

User-Friendly Platform:

Description: The platform provides an intuitive and user-friendly interface, ensuring that users can easily navigate and access the functionalities of "PGHunt" without encountering usability issues.

Advanced Search and Filtering:

Description: Users can perform detailed searches based on criteria such as location, budget range, amenities, and other preferences. Advanced filtering options empower users to find accommodations that precisely match their needs.

Comprehensive Property Listings:

Description: Property owners can create detailed listings with comprehensive information, including pricing, amenities, house rules, and high-quality images. A standardized format improves consistency and enhances the overall user experience.

Real-Time Communication:

Description: The platform incorporates a real-time messaging system, allowing direct and efficient communication between accommodation seekers and property owners. Users receive notifications for new messages, facilitating prompt interaction.

Real-time communication is a crucial aspect of modern digital platforms, playing a significant role in enhancing user experiences and facilitating instant interactions between users. For the "PGHunt" platform, which involves the search and booking of paying guest accommodations, integrating real-time communication features is essential for connecting accommodation seekers with property owners, fostering timely interactions, and providing a dynamic and responsive user environment.

Understanding Real-Time Communication:

Real-time communication refers to the instantaneous exchange of information between users or systems, typically with minimal delay. In the context of digital platforms, real-time communication enables users to interact with each other or receive updates instantly, creating a more dynamic and engaging experience.

Key Components of Real-Time Communication for PGHunt:

Messaging System:

Description: Implement a real-time messaging system that allows accommodation seekers and property owners to communicate seamlessly within the platform.

Justification: A messaging system facilitates direct and instant communication, enabling users to discuss accommodation details, ask questions, and make arrangements in real-time.

Notification System:

Description: Integrate a notification system that informs users about new messages, booking confirmations, and other relevant updates.

Justification: Notifications keep users informed and engaged, ensuring they are promptly aware of important events or communications related to their accommodation search or bookings.

Live Chat Functionality:

Description: Incorporate live chat functionality for real-time conversations between users. This can be especially useful for immediate assistance or inquiries.

Justification: Live chat enhances the immediacy of communication, providing a quick and efficient way for users to get information or resolve queries without delays.

Status Indicators:

Description: Display status indicators to show users when their messages have been sent, delivered, and read by the recipient.

Justification: Status indicators improve transparency in communication, letting users know the current state of their messages and whether the other party has seen or responded to them.

Real-Time Updates on Listings:

Description: Provide real-time updates on accommodation listings, including changes in availability, pricing, or new property additions.

Justification: Real-time updates ensure that users have the latest and most accurate information, helping them make informed decisions about their accommodation choices.

2.9. Tools & Technology Used with Short Justification: -

Hardware Requirements

Name of Components	Specification
Processor	Intel core I3, /I5
RAM	4GB/8GB
Hard Disk	512GB/1TB

Software Requirements

Name of Components	Specification
Operating System	Windows 10 pro
Software development Kit	MongoDB, Express, React, Node
Tools & languages	Visual Studio Code, JavaScript

The "PGHunt" project incorporates a range of tools and technologies to ensure the development of a robust and feature-rich platform. Each tool is carefully selected based on its suitability for the specific requirements of the project. Here are some key tools and technologies used in the "PGHunt" project, along with brief justifications for their inclusion:

Programming Languages:

JavaScript (Node.js, HTML): JavaScript is used for both server-side (Node.js) and client-side (React) development. Node.js provides a scalable and efficient server environment, while React facilitates the creation of interactive user interfaces.

Backend Framework:

Express.js: A minimal and flexible Node.js web application framework, Express.js is employed for building the server-side components of "PGHunt." Its simplicity and robust features make it suitable for handling server-side logic.

Database:

MongoDB: A NoSQL database, MongoDB is chosen for its flexibility in handling unstructured data and scalability. It stores property information, user data, and other relevant details efficiently.

Authentication:

JSON Web Tokens (JWT): JWT is utilized for user authentication. It provides a secure way to transmit information between parties and verifies the authenticity of users during their interactions with the platform.

Frontend Framework and UI Library:

State Management:

Redux: Redux is utilized for state management in the frontend, providing a predictable state container that makes it easier to manage the state of the application, especially in complex and dynamic environments.

Real-Time Communication:

Socket.IO: Socket.IO is used for real-time bidirectional communication between the server and clients. It facilitates instant updates and notifications, ensuring timely communication between accommodation seekers and property owners.

Automated Testing:

Jest and Enzyme: Jest is a JavaScript testing framework, and Enzyme is a testing utility for React components. Together, they enable automated testing of the frontend components, ensuring code reliability and identifying potential issues early in the development process.

Deployment:

Docker: Docker is employed for containerization, providing a consistent and reproducible environment across different stages of development and deployment. It simplifies the deployment process and enhances scalability.

Version Control:

Git: Git is the version control system of choice, facilitating collaborative development and ensuring a structured approach to managing code changes.

Continuous Integration/Continuous Deployment (CI/CD):

Jenkins: Jenkins is used for implementing CI/CD pipelines. It automates the building, testing, and deployment processes, ensuring a systematic and efficient release cycle.

Frontend Styling:

Styled Components: Styled Components are used for styling React components. This CSS-in-JS solution allows for the creation of dynamic styles based on props, enhancing the flexibility and maintainability of the frontend.

Security:

HTTPS (SSL/TLS): Secure Socket Layer (SSL) or Transport Layer Security (TLS) is implemented to ensure secure data transmission over the web. This is crucial for protecting user data and maintaining the integrity of the platform.

Geographical Information Services:

Google Maps API: The Google Maps API is integrated to provide geographical information and interactive maps, enhancing the user experience by offering insights into the neighbourhood and nearby amenities.

Each tool and technology chosen for the "PGHunt" project serves a specific purpose, contributing to the development of a secure, scalable, and user-friendly platform for finding and securing paying guest accommodations. The combination of these technologies ensures a cohesive and efficient development process from backend to frontend and deployment.

2.10. Project Plan: -

Creating a project plan for "PGHunt" involves breaking down the development process into manageable tasks, assigning responsibilities, and setting timelines. Below is a simplified project plan outlining the key phases and activities for the "PGHunt" project:

Phase 1: Project Initiation

Define Project Scope and Objectives:

- Clearly outline the goals and features of the "PGHunt" platform.
- Identify the target audience and stakeholders.

Gather Requirements:

- Conduct thorough discussions with stakeholders to gather detailed functional and non-functional requirements.
- Identify key features, user stories, and acceptance criteria.

Create Project Charter:

- Develop a project charter outlining the project's purpose, scope, objectives, and high-level deliverables.
- Define roles and responsibilities of team members.

Phase 2: Planning

Create Work Breakdown Structure (WBS):

- Break down the project into smaller, manageable tasks.
- Organize tasks into a hierarchical structure.

Resource Planning:

- Identify the required team members, their roles, and responsibilities.
- Allocate resources effectively based on skill sets.

Timeline and Milestone Definition:

- Develop a project timeline with key milestones.
- Define project phases and deadlines for each deliverable.

Risk Analysis and Mitigation:

- Identify potential risks associated with the project.
- Develop mitigation strategies and contingency plans.

Select Development Methodology:

- Choose an appropriate development methodology (e.g., Agile, Scrum) based on project requirements.

Phase 3: Development

Backend Development:

- Develop the server-side components using Node.js and Express.js.
- Implement MongoDB for database storage.

Frontend Development:

- Design and develop the user interfaces using Node. Js.
- Implement Redux for state management.

Real-Time Communication Integration:

- Integrate Socket.IO for real-time bidirectional communication.
- Implement messaging features for accommodation seekers and property owners.

Database Implementation:

- Set up and configure MongoDB databases.
- Implement data models for users, accommodations, bookings, and reviews.

Security Implementation:

- Implement secure authentication using JWT.
- Set up HTTPS (SSL/TLS) for secure data transmission.

Phase 4: Testing

Unit Testing:

- Conduct unit tests for individual components using Jest and Enzyme.
- Ensure code reliability and identify potential issues.

Integration Testing:

- Test the integration of backend and frontend components.
- Verify that all modules work seamlessly together.

User Acceptance Testing (UAT):

- Invite stakeholders to participate in UAT.
- Gather feedback and make necessary adjustments.

Phase 5: Deployment

Containerization with Docker:

- Containerize the application using Docker for consistency in different environments.
- Ensure seamless deployment.

Continuous Integration/Continuous Deployment (CI/CD):

- Set up Jenkins for CI/CD pipelines.
- Automate building, testing, and deployment processes.

Deploy to Production:

- Deploy the application to a production environment.
- Monitor for any issues and address them promptly.

Phase 6: Monitoring and Maintenance

Monitoring and Analytics:

- Implement analytics tools to track user behavior and platform usage.
- Set up monitoring tools for performance tracking.

User Support and Maintenance:

- Provide ongoing user support.
- Address any bugs or issues that arise post-launch.

Documentation:

- Document the system architecture, codebase, and any necessary user guides. - Ensure that future development teams can understand and build upon the existing system.

Phase 7: Project Closure

Evaluate Project Success:

- Assess whether project goals and objectives were met.
- Gather feedback from stakeholders.

Lessons Learned:

- Conduct a retrospective to identify lessons learned.
- Document insights for future projects.

Project Closure Report:

- Create a project closure report summarizing achievements, challenges, and recommendations.
- Hand over documentation and codebase to relevant stakeholders.

This project plan provides a structured approach to the development of "PGHunt," ensuring that each phase is carefully executed and contributing to the successful delivery of the accommodation search platform. Adaptations can be made based on the project's specific needs and any unforeseen circumstances that may arise during the development process.

3. Requirement Analysis

It seems like you're looking for assistance with a project related to "PG Hunt" and requirement analysis. However, your request is a bit vague, and I could use more details to provide you with more targeted assistance.

1. Define the Scope:

- Clearly outline the objectives of the PG Hunt project. What are you trying to achieve?
- Specify the features and functionalities you want to include in the PG Hunt system.

2. Identify Stakeholders:

- Determine who the key stakeholders are. This might include students, landlords, administrators, etc.
- Understand their needs and expectations regarding the PG Hunt system.

3. Gather Requirements:

- Conduct interviews, surveys, or workshops to gather detailed requirements.
- Categorize requirements into functional and non-functional (e.g., usability, performance, security).

4. Prioritize Requirements:

- Identify critical features that must be included for the system to be successful.
- Prioritize features based on importance and feasibility.

5. Create Use Cases:

- Develop use cases to illustrate how different users will interact with the system.
- Specify the system's behavior in different scenarios.

6. Data Modelling:

- Identify the data entities involved (e.g., users, properties, reviews).
- Define the relationships between these entities.

7. System Design and Architecture:

- Outline the high-level architecture of the PG Hunt system.
- Consider technologies, platforms, and databases that will be used.

8. Non-functional Requirements:

- Specify performance expectations, security measures, and other non-functional aspects.
- Consider scalability, reliability, and maintainability.

9. Validation and Verification:

- Establish criteria for validating that the system meets the requirements.
- Develop a plan for testing and quality assurance.

10. Documentation:

- Create comprehensive documentation for all requirements.
- Ensure that the documentation is accessible and understandable for all stakeholders.

11. Review and Approval:

- Conduct regular reviews with stakeholders to ensure that the requirements align with their expectations.
- Obtain formal approval of the requirements before proceeding to the next phases of the project.

12. Iterative Process:

- Recognize that requirement analysis is an iterative process. Changes may be necessary as the project progresses.

Remember, the success of the PG Hunt project heavily depends on the accuracy and completeness of the initial requirement analysis. Regular communication with stakeholders and a flexible approach to accommodate changes are crucial throughout the project lifecycle.

3.1. Feasibility Study

A feasibility study is a critical step in determining whether a project, such as PG Hunt, is viable and worth pursuing. Here's a guide on how to conduct a feasibility study for the PG Hunt project:

- 1. Define the Project Scope:
- Clearly outline the goals and objectives of the PG Hunt project.
- Identify the target audience (e.g., students, landlords) and the geographical scope of the platform.
- 2. Market Analysis:
- Research the demand for such a platform in the target market.
- Identify competitors and analyse their strengths and weaknesses.
- Evaluate market trends and potential opportunities.
- 3. Technical Feasibility:
- Assess the technological requirements for PG Hunt.
- Evaluate whether the necessary technology is available or needs to be developed.
- Consider scalability, integration with other systems, and potential technical challenges.
- 4. Legal and Regulatory Compliance:
- Identify and understand the legal and regulatory requirements related to property rentals in the target area.
- Ensure compliance with data protection laws and other relevant regulations.
- 5. Operational Feasibility:
- Assess the operational aspects of running PG Hunt.
- Consider the resources needed, including personnel, facilities, and technology.
- Evaluate the efficiency of processes and workflows.
- 6. Financial Feasibility:

- Estimate the initial investment required to develop and launch PG Hunt.
- Project operating costs, including maintenance, marketing, and staff salaries.
- Develop revenue model and project potential earnings.
- 7. Risk Analysis:
- Identify potential risks and uncertainties associated with the PG Hunt project.
- Develop a risk mitigation plan for each identified risk.
- Assess the impact of external factors (e.g., economic changes, technological advancements).
- 8. Environmental Impact:
- Evaluate the environmental impact of the PG Hunt project.
- Consider sustainability practices and assess any potential negative effects on the environment.
- 9. Social and Cultural Factors:
- Consider the social and cultural factors that may impact the success of PG Hunt.
- Evaluate how the platform aligns with societal norms and values.
- 10. Conclusion and Recommendations:
- Summarize the findings of the feasibility study.
- Provide clear recommendations on whether to proceed with the PG Hunt project or not.
- If the project is recommended, outline the next steps and an action plan.
- 11. Document the Feasibility Study:
- Compile all the information gathered into a comprehensive feasibility study report.
- Clearly present data, analysis, and conclusions for stakeholders' understanding.

Remember, a well-conducted feasibility study provides a solid foundation for decision-making and helps ensure that the PG Hunt project is viable and aligned with the goals and expectations of stakeholders. Regularly review and update the feasibility study as the project progresses and circumstances change.

Feasibility Study of our Proposed System

Technical Feasibility: -

Project is PG HUNT Website a complete Node Js based application. The main technologies and tools that are associated with this application are.

- Node Js Back-end
- HTML, CSS, JS, EJS FILE.
- Diagram Drawing tools: -Draw.io.
- Mongodb as a database.

Each of the technologies are freely available and the technical skills required are manageable. Time limitation of the product development and the case of implementing using their technologies are synchronized. For these it's clear that the project is technically feasible.

3.2. Users of the System

User 1: Admin

Admin, they have ability to control everything in this Website such as to Manage property, manage property details, User Management, Update System Information, Manage Account Details/Credentials, Login and Logout.

User 2: End-user

End User, they have ability to control some important things in this Website such as to View property Details, Login and Logout and payment Gateway

User 3: Owner

Owner, they have ability to control some important things in this Website such as to Add property, View property Details, Login and Logout.

3.3. Modules of the System

Modules 1: Manage Login Page: - The users will submit their credentials to access the data and functionality of the Application according to their roles or permissions.

Modules 2: Manage Admin Dashboard Page: - It will Manage it will show the all the modules and display the summary.

Modules 3: Manage Property: - It will Manage the Property Section like Add new Property, list all Property, Edit/Update Property Details, View Property Details, Delete Property.

Modules 4: Manage Payment Getaway: - It Will manage the Payment getaway.

Modules 6: Manage End User: - It Will manage the End-user details and payment method the end user can see and rent the house by contracting owner.

Modules 7: Manage Owner: - The owner has the ability to add the property details.

Modules 8: Manage Feedbacks: - The End-users and owner can add feedbacks and the Admin has the ability to list the Feedbacks details.

Modules 9: Manage Payments: - The End-users can do payments and the Admin has the ability to list the Payments details.

3.4 Process Model

A process model outlines the flow of activities and tasks within a system or project. Developing a process model for PG Hunt involves defining the key stages and activities involved in the lifecycle of the platform, from the initial concept to ongoing maintenance. Here's a high-level process model for PG Hunt: PG Hunt, a cutting-edge website dedicated to streamlining the search for Paying Guest accommodations, employs a sophisticated technology stack comprising HTML, CSS, JavaScript, Bootstrap, MongoDB, NodeJS, and ExpressJS. In addition to the powerful technology stack, the platform follows a well-defined process model to ensure efficiency, scalability, and a seamless user experience.

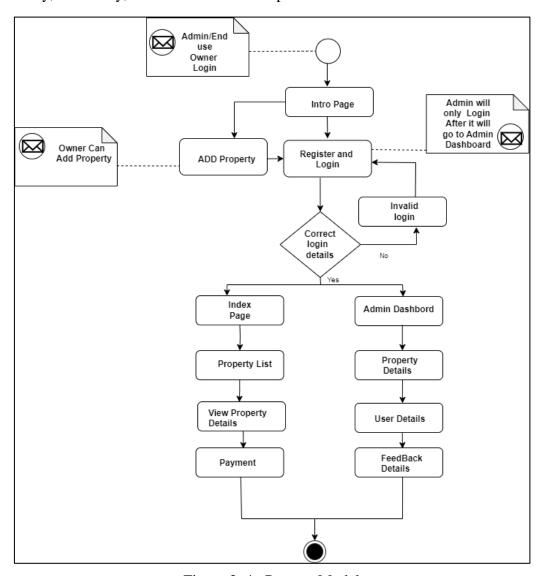


Figure 3. 4.. Process Model

3.5 Hardware & Software Requirements:

Hardware Components	Specification
Processor	Intel core I3, /I5 7 th generation
RAM	4GB/8GB
Hard disk	512GB/1TB
Monitor	15.6 color monitor or advance
Device	Keyboard, Mouse

Software of component	Specification
Operating System	Windows7 or above
Software development kit	Google Chrome, Internet Explorer, Firefox
Programming Language	HTMLCSS EJS, NODE JS, EXPRESS.JS.
Server	localhost:3000
Database	Mongodb
Editor	Visual Studio Code

4. Design

4.1 User Case Diagram.

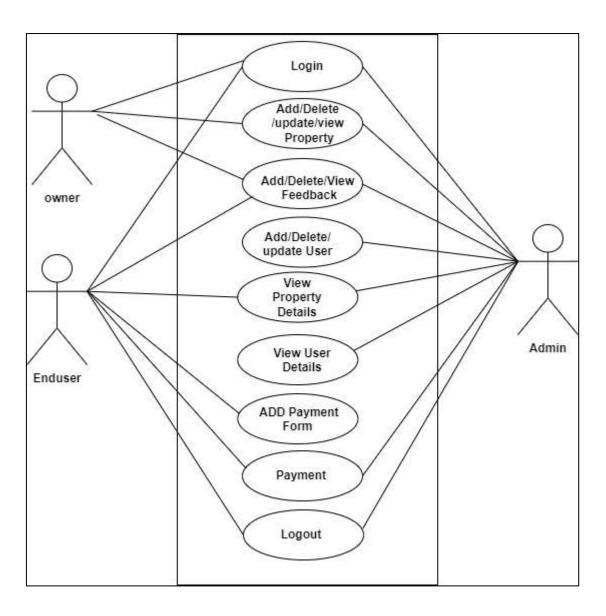


Figure 4. 1.. User Case

4.2. Diagrams [Structured OR OOAD] Structured:

4.2.1. Data Flow Diagram.

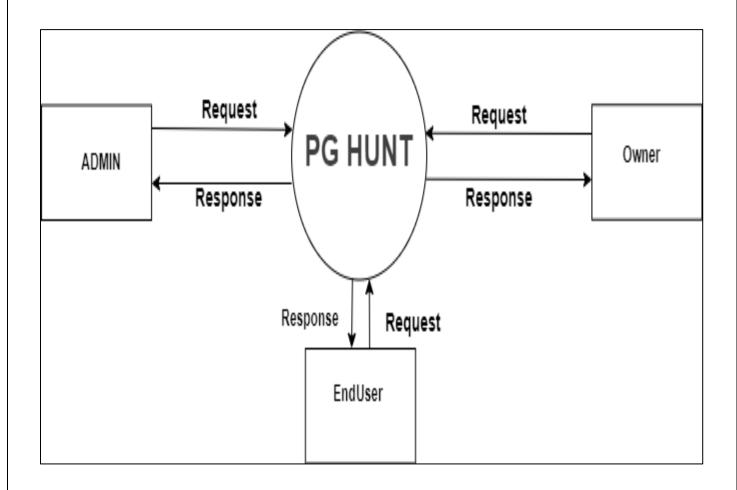


Figure 4.2.1. Context Level DFD

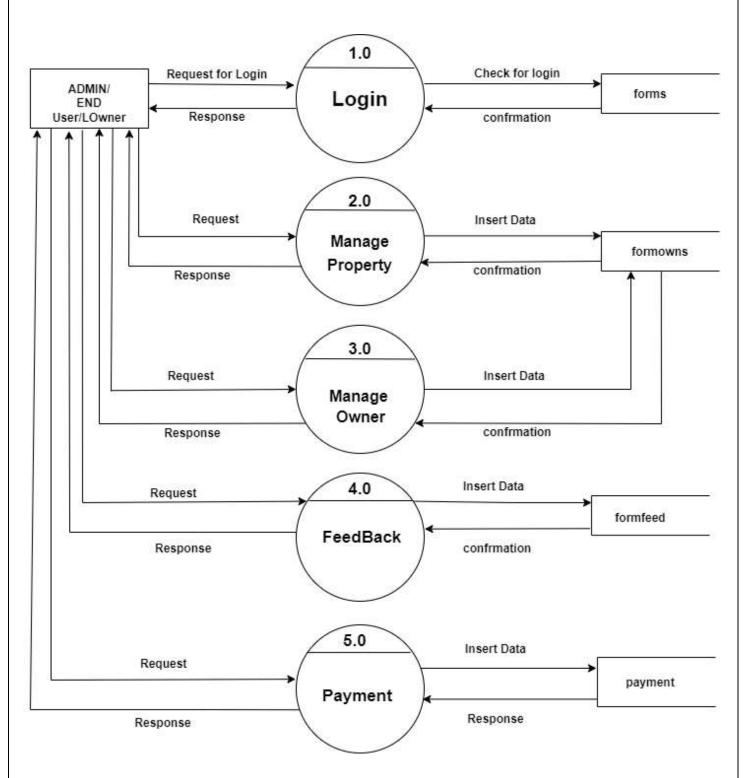


Figure 4.2.1. Level 1 DFD

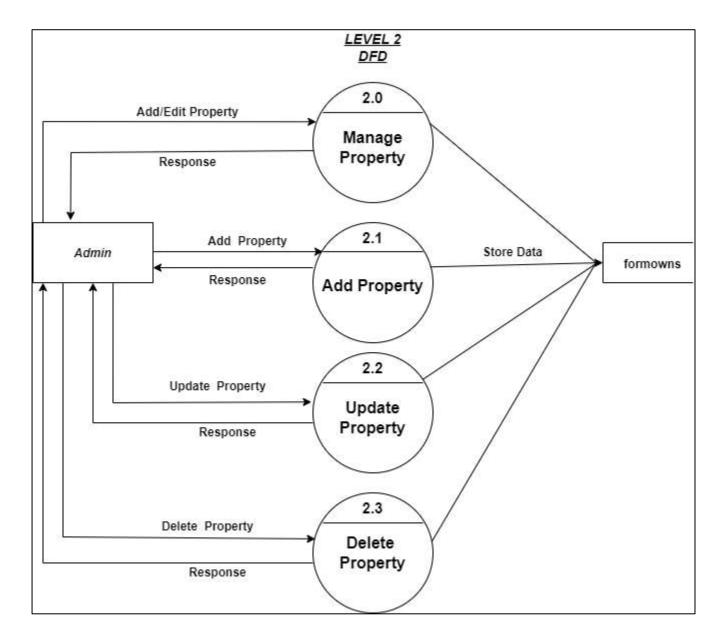


Figure 4.2.1. Level 2 Property DFD

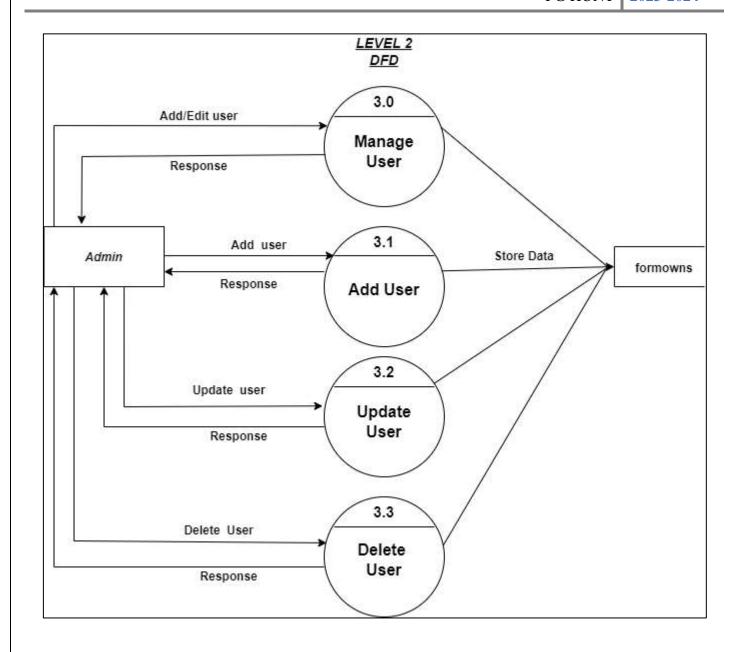


Figure 4.2.1. Level 2 User DFD

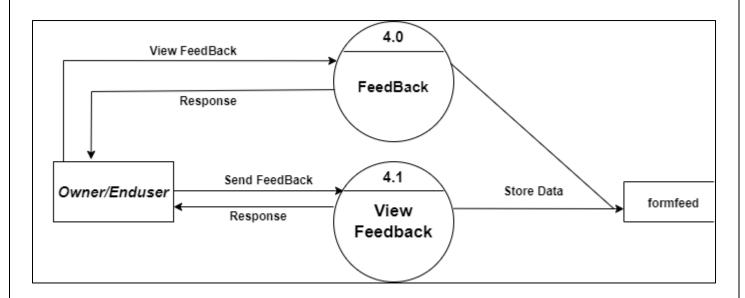


Figure 4.2.1. Level 2 Feedback DFD

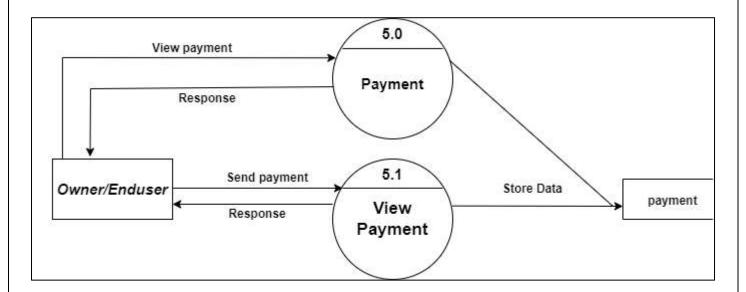


Figure 4.2.1. Level 2 Payment DFD

4.2.2. Flow Chart OOAD:

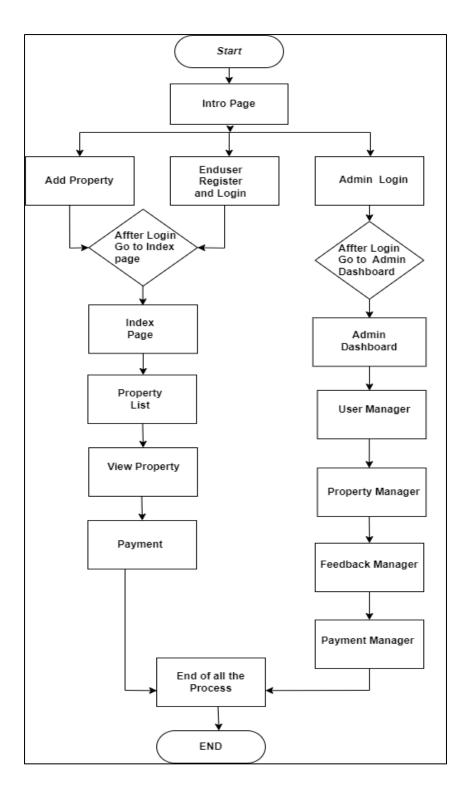


Figure 4.2.2. Flow Chart OOAD.

4.2.3. Class Diagram.

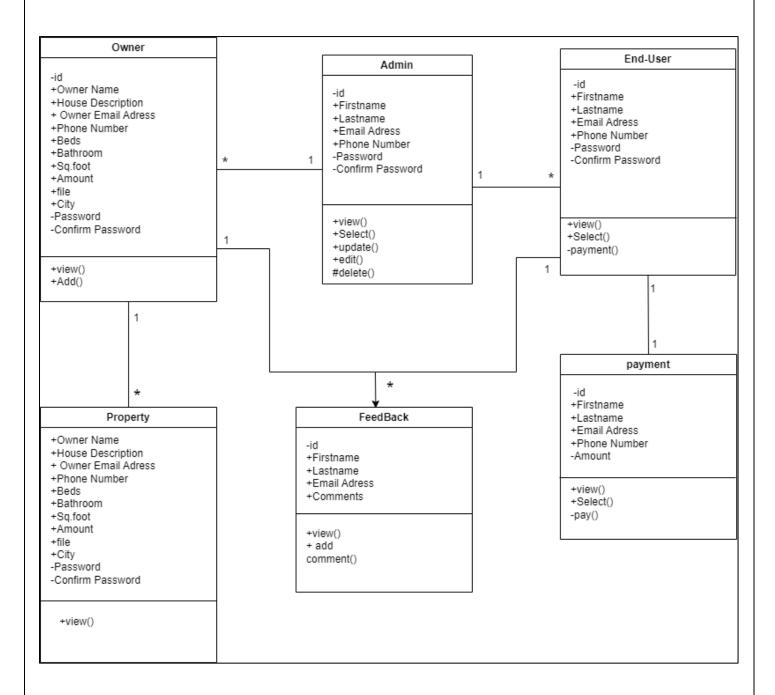


Figure 4.2.3. Class Diagram.

4.2.4. Sequence Diagram.

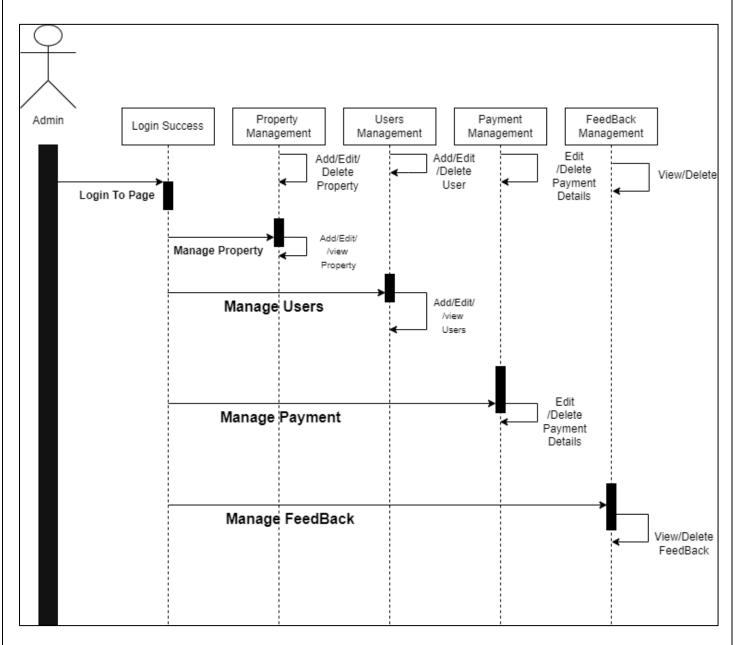


Figure 4.2.4. Sequence Diagram.

4.2.5. Activity Diagram.

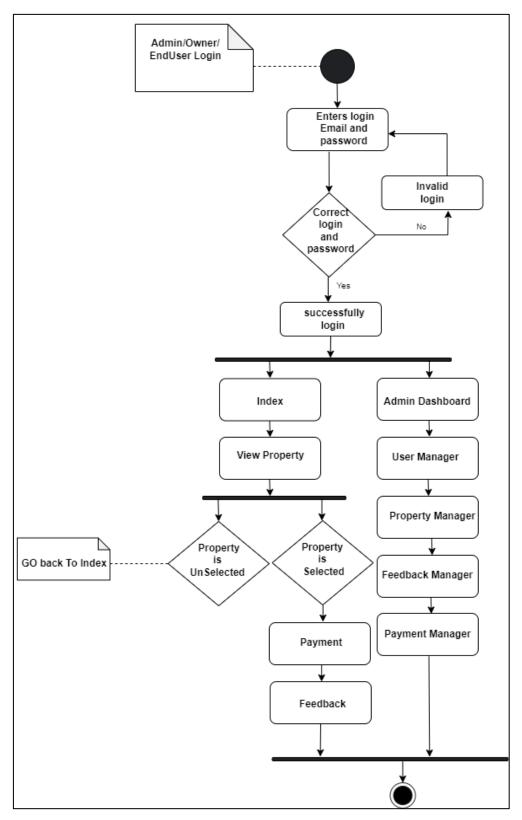


Figure 4.2.5. Activity Diagram.

4.2.6. Entity Relationship Diagram.

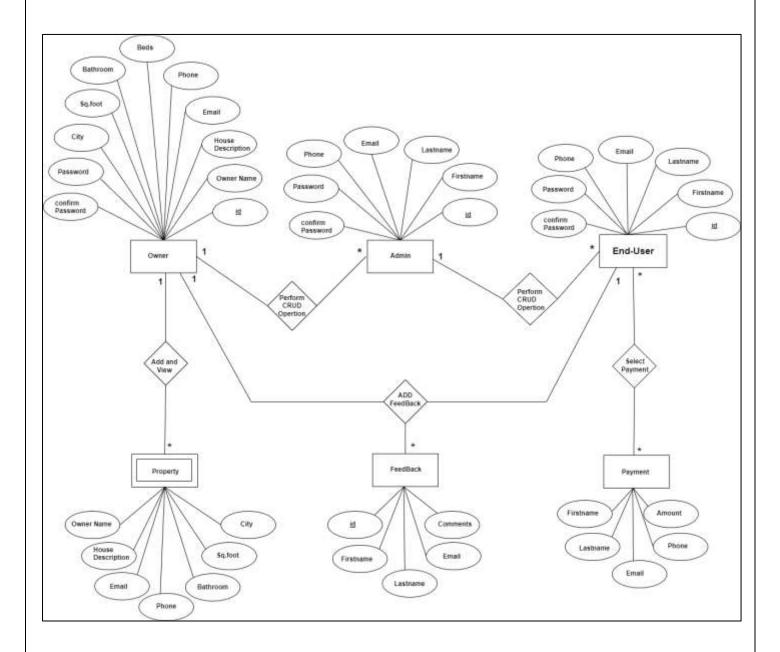


Figure 4.2.6. Entity Relationship Diagram.

4.2.7. Data Dictionary.

Table Name: Admin

Table Description: The table is used for Admin details.

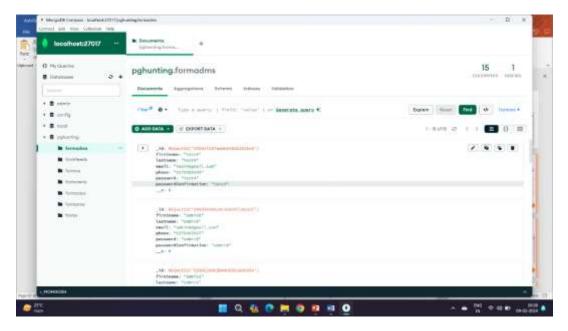


Table Name: Owners

Table Description: The table is used for Owners details.

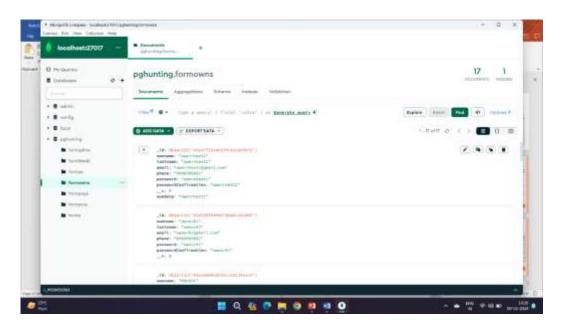


Table Name: End-Users

Table Description: The table is used for End-users details.

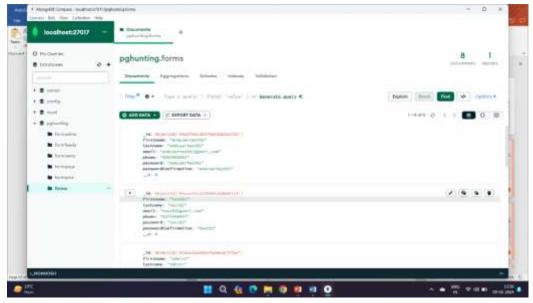


Table Name: Property's

Table Description: The table is used for Property's details.

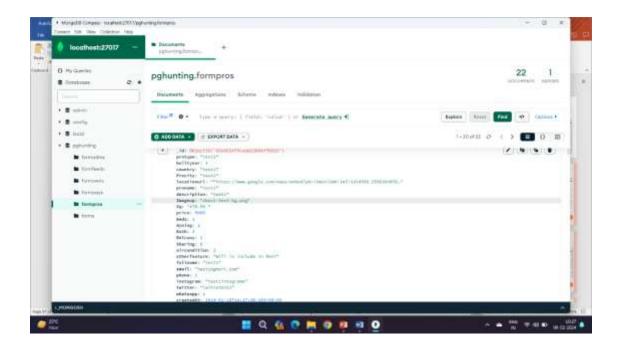


Table Name: Payment

Table Description: The table is used for Payment details.

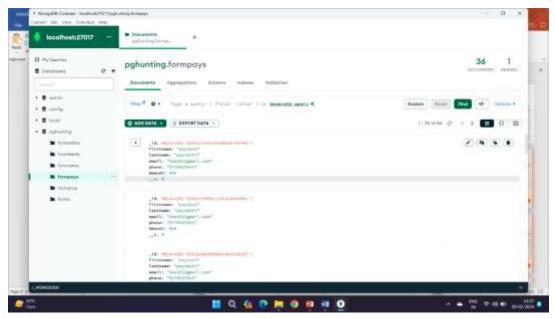
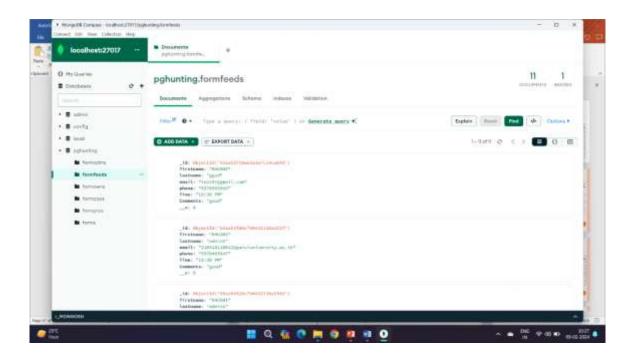


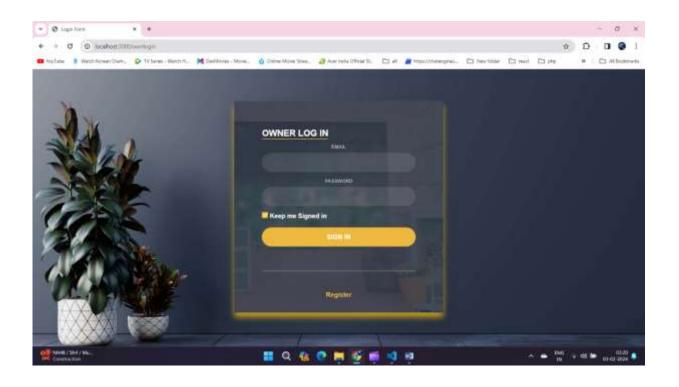
Table Name: Feedback's

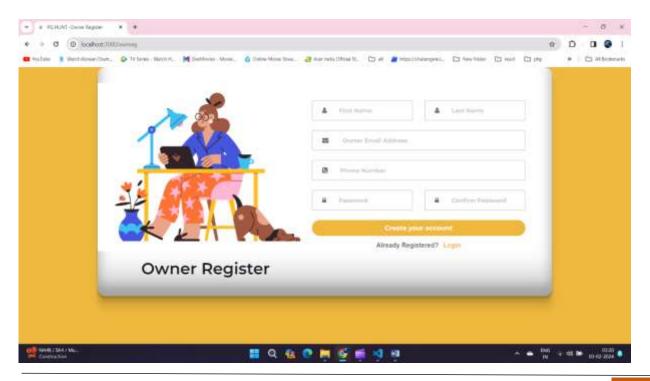
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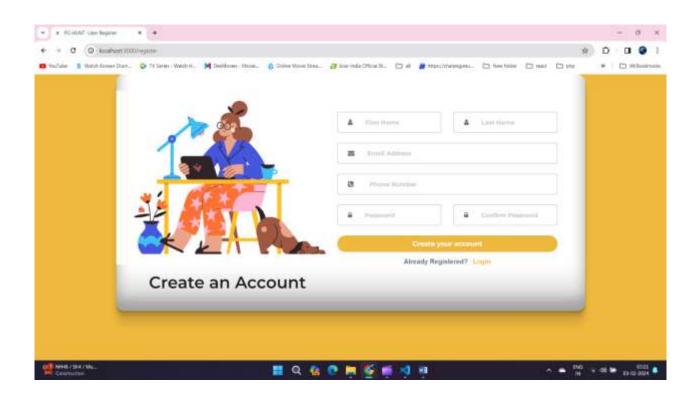


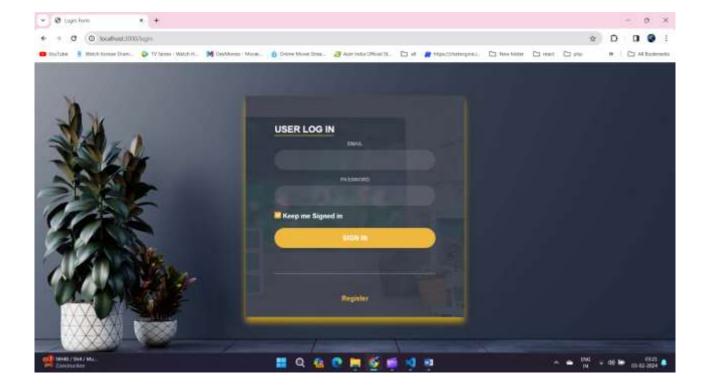
5. Implementation

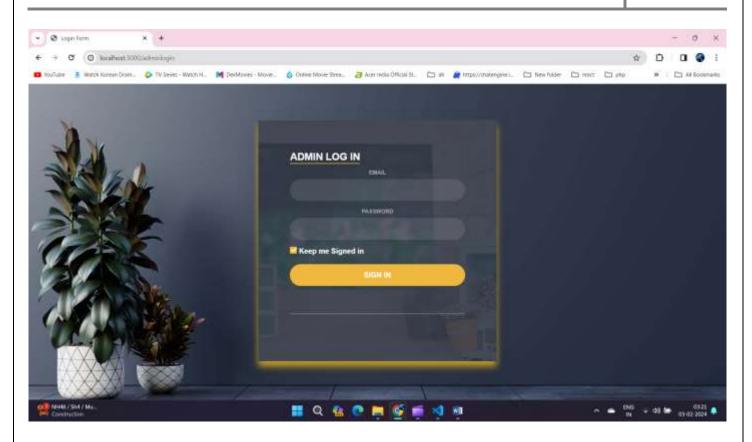
5.1 Form Layouts: - Register & Login Forms



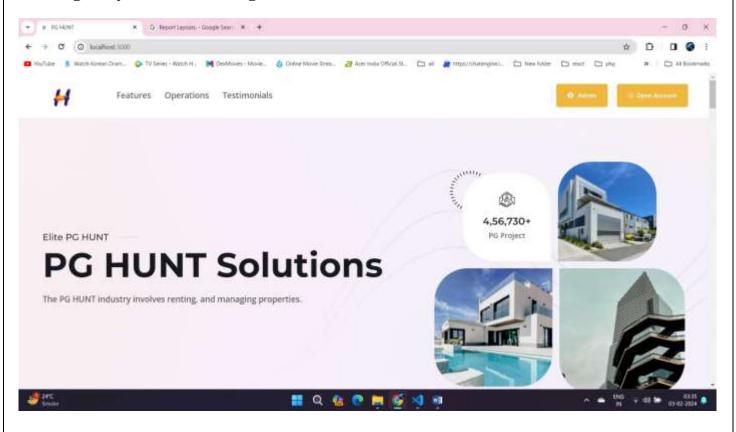


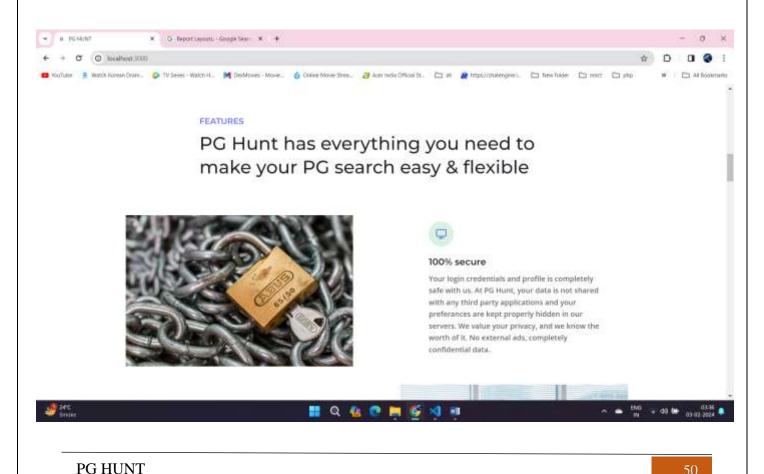


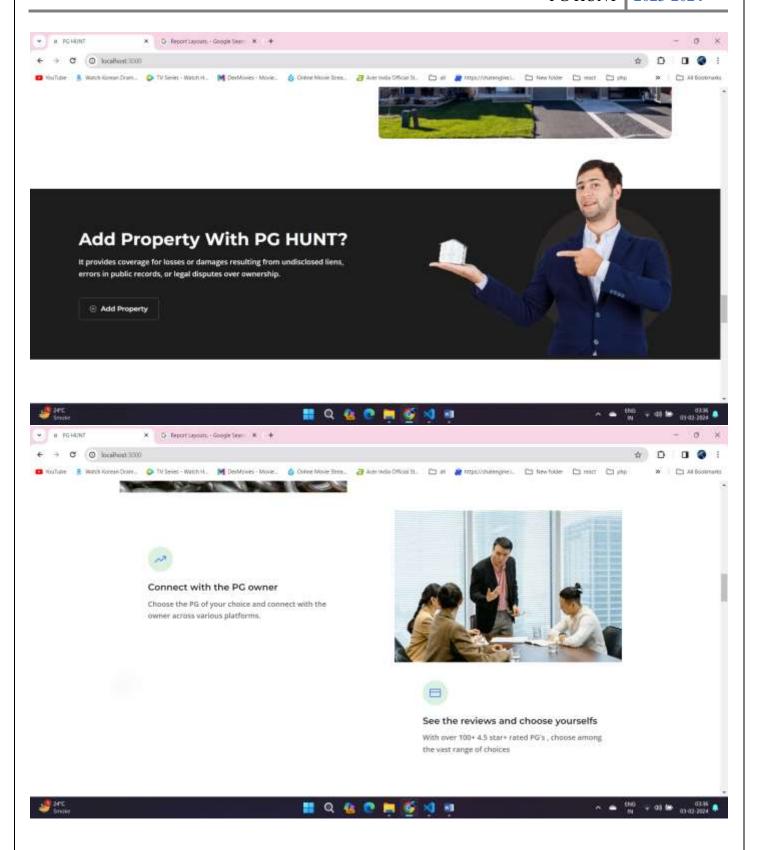


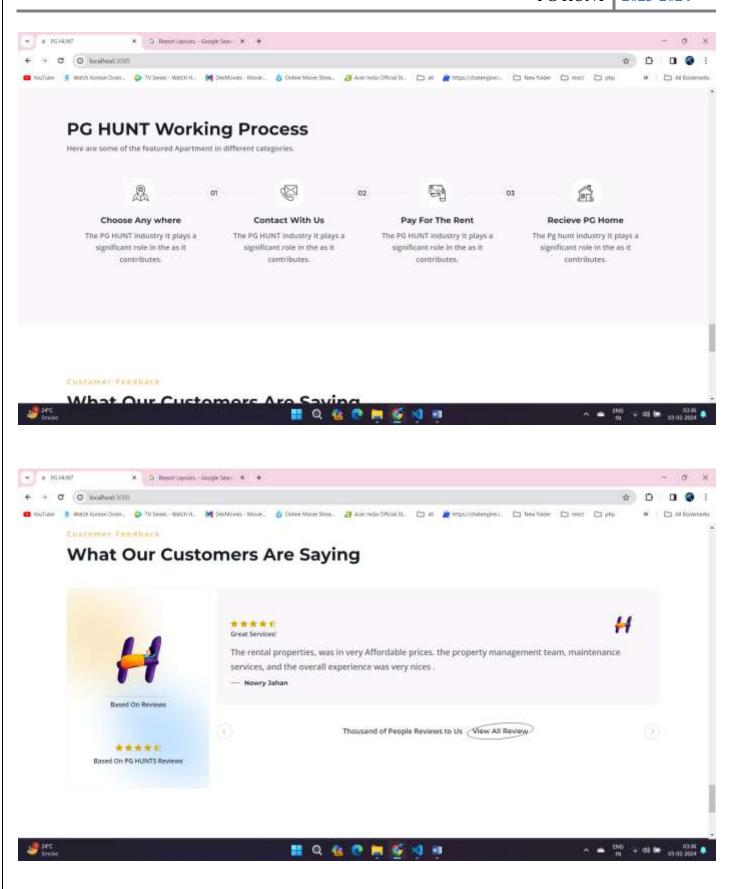


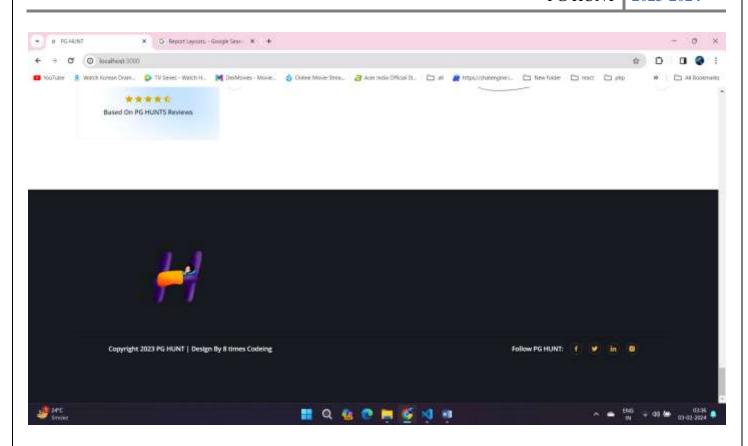
5.2. Page Layouts.: -Intro Page



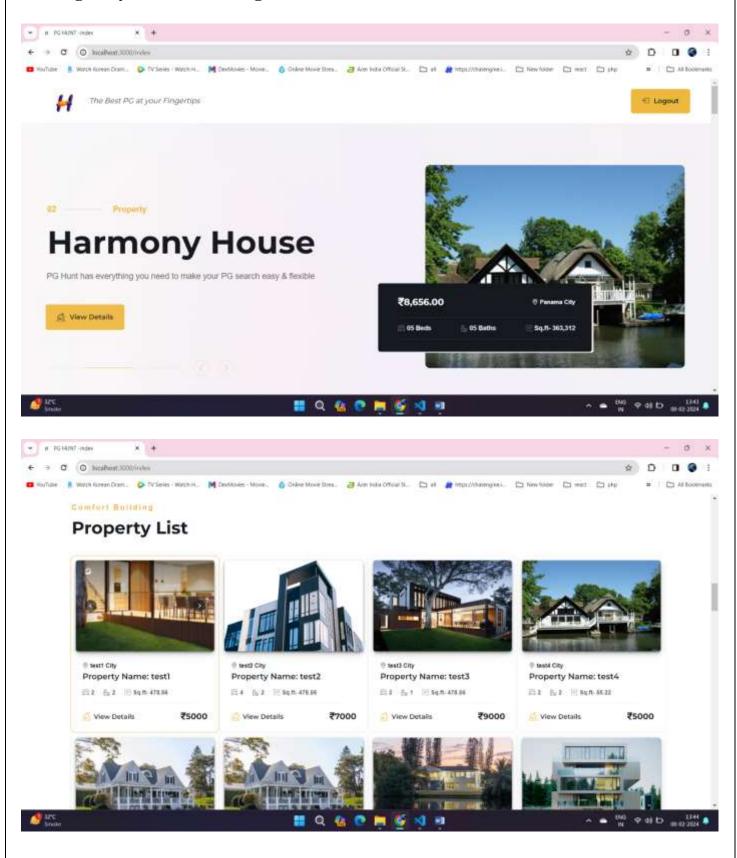


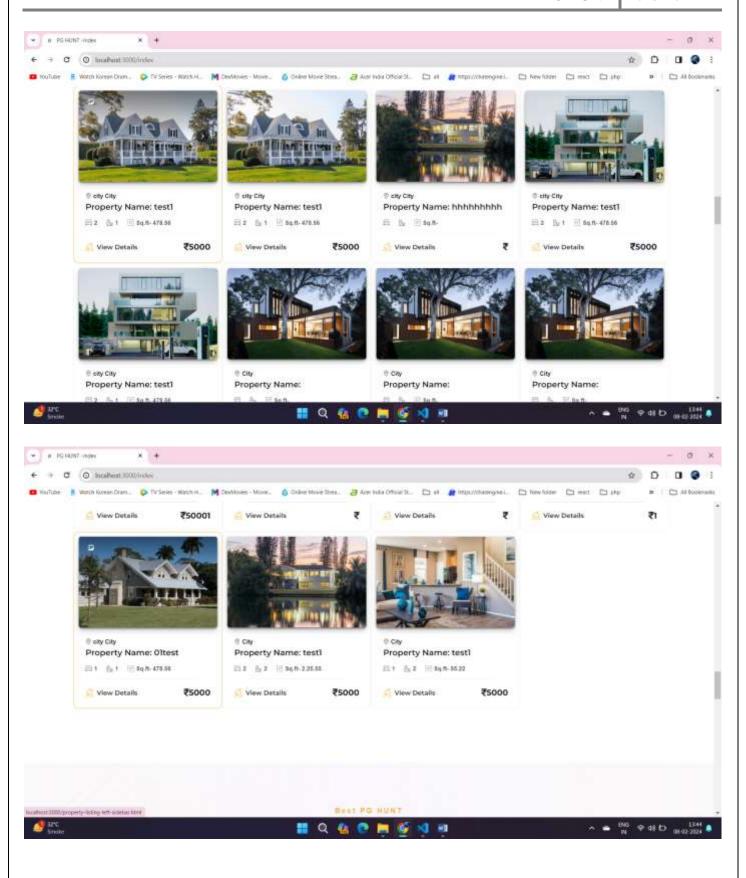


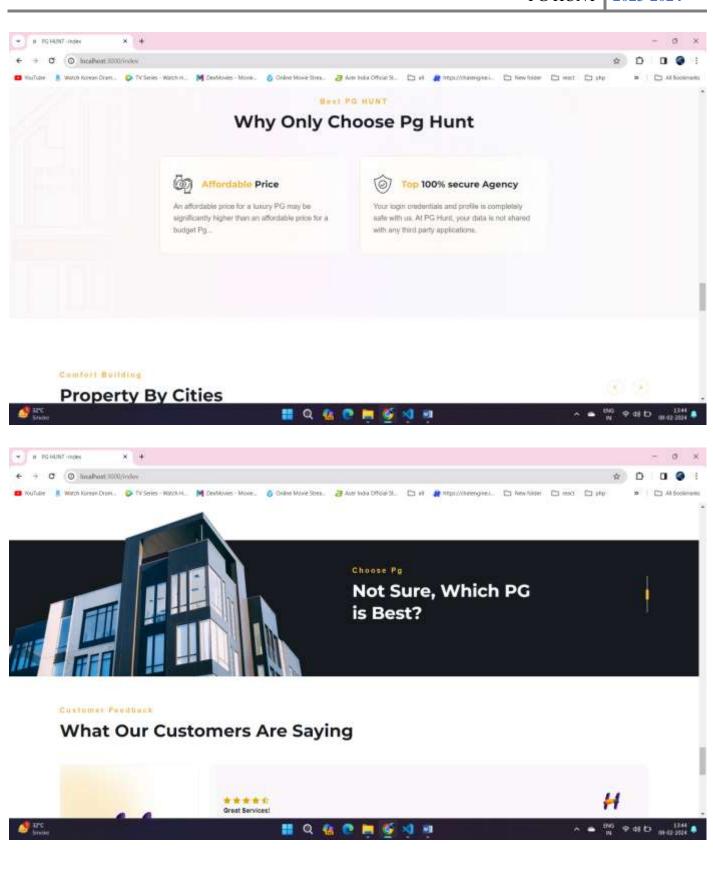


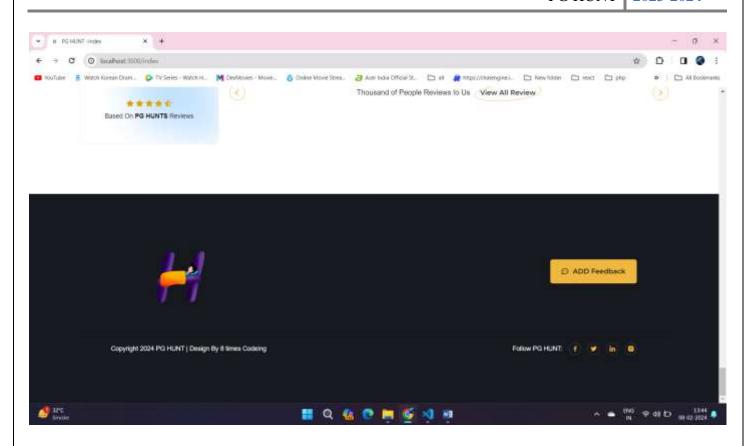


5.2. Page Layouts.: -Index Page

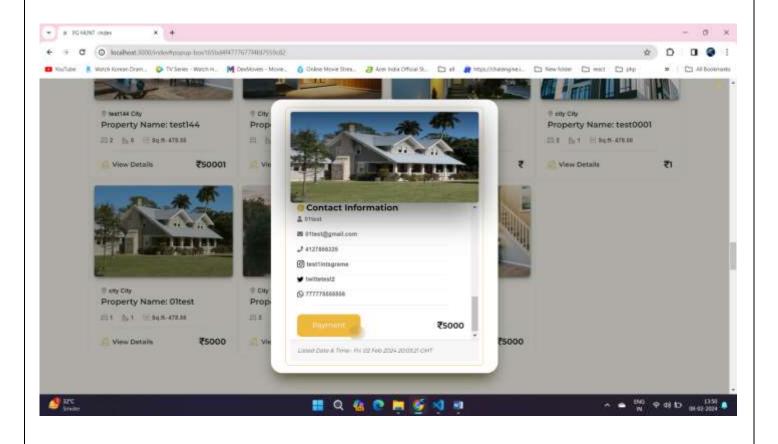


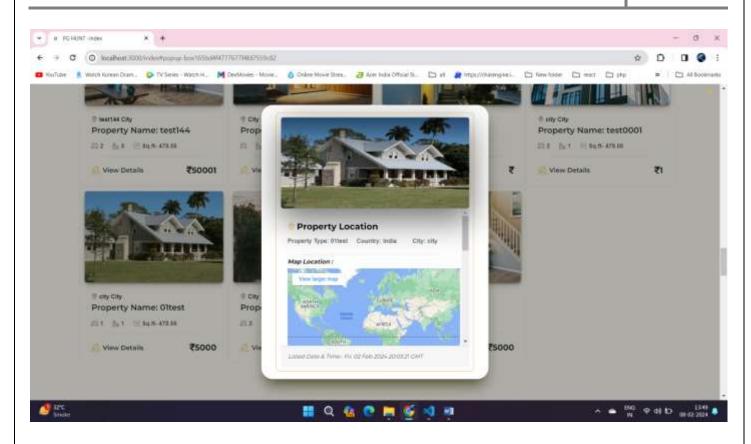


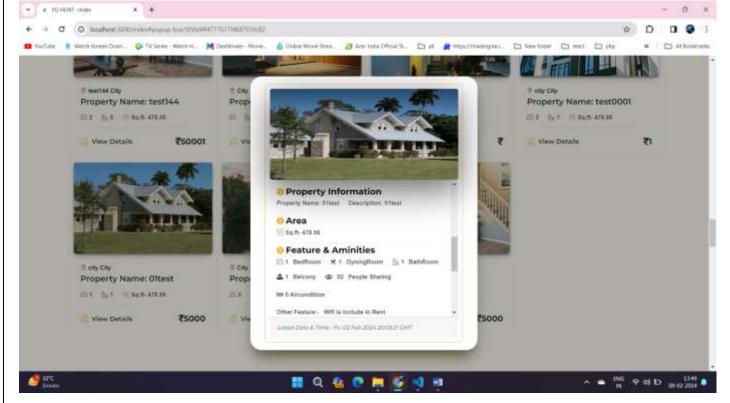




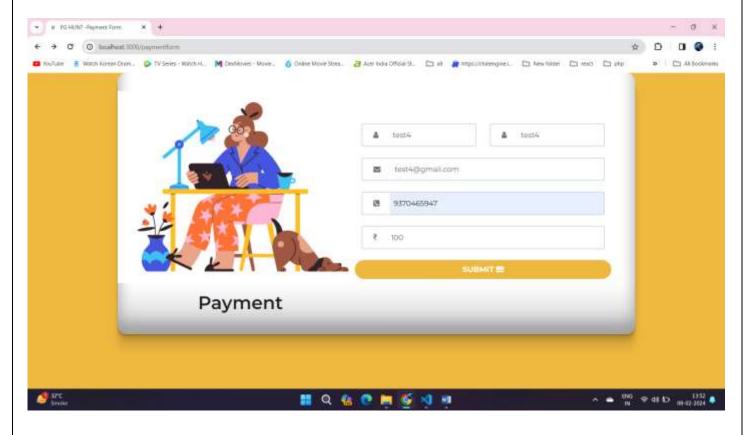
5.2. Page Layouts.: -Property Details.

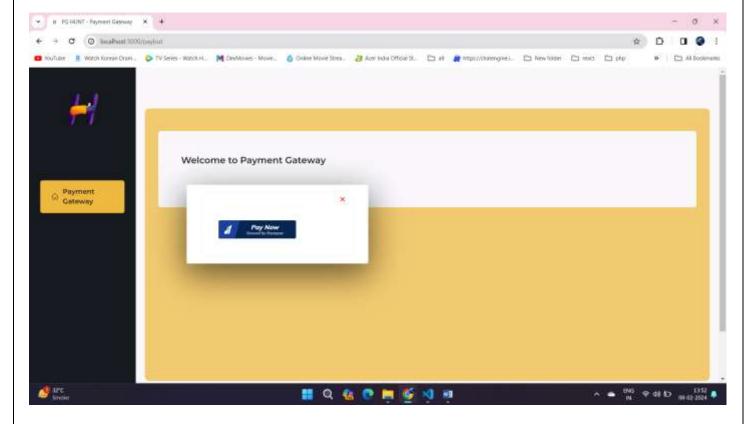


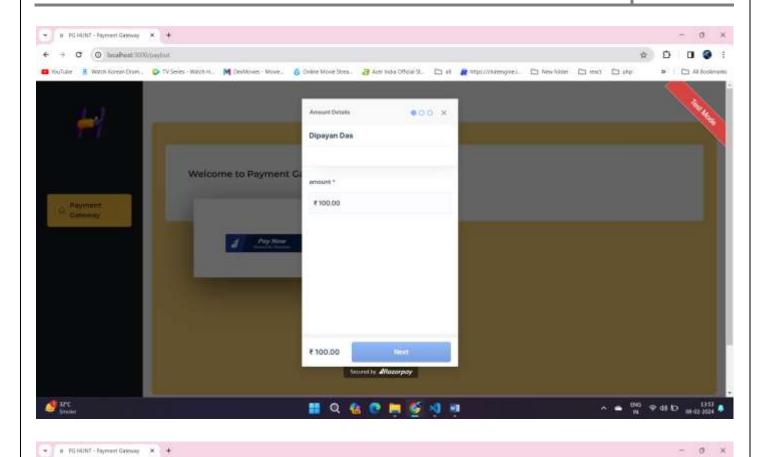


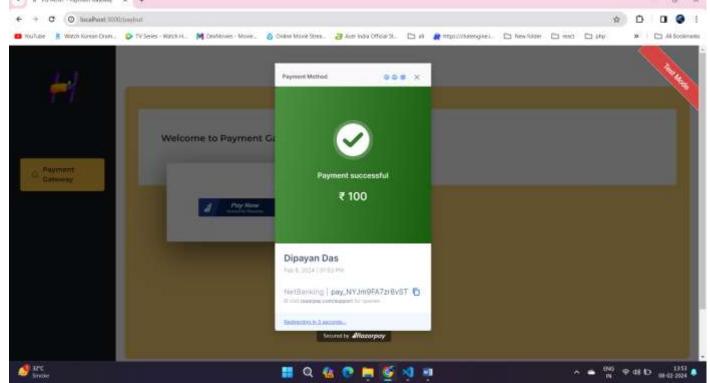


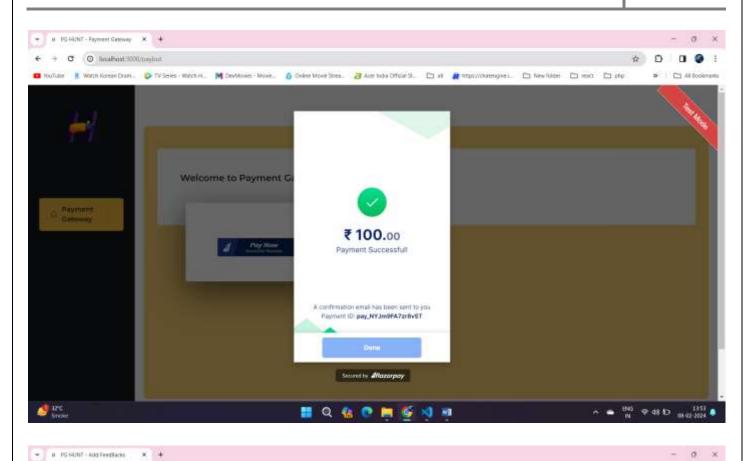
5.2. Page Layouts.: Payment Form & Payment

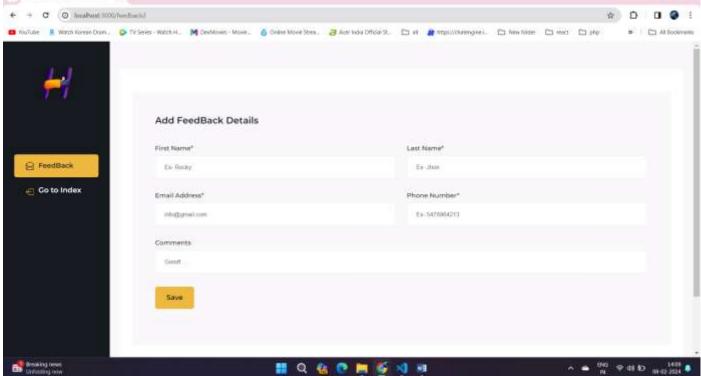




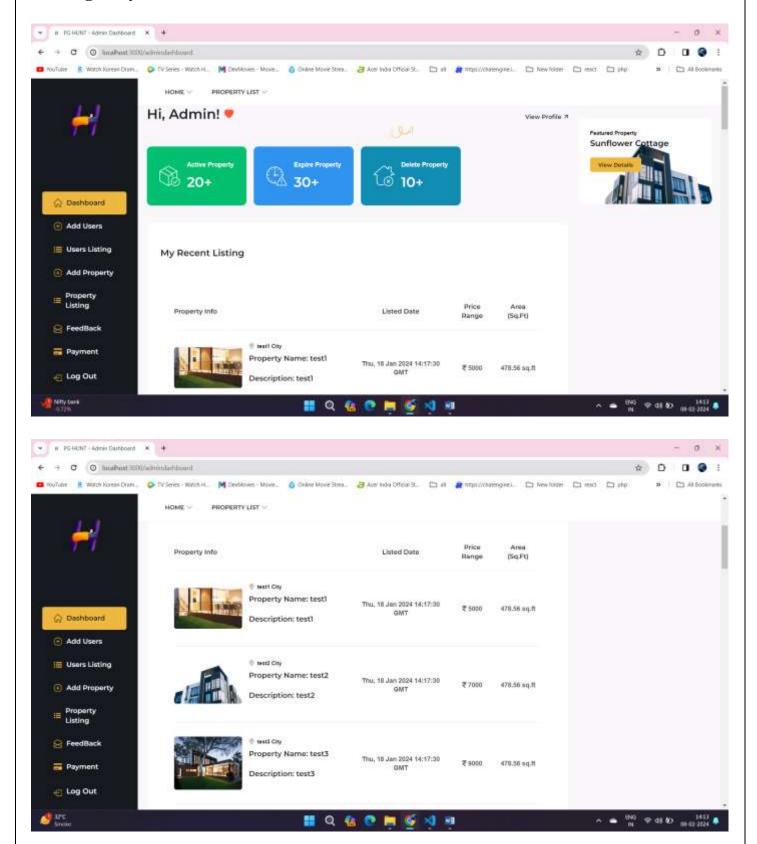


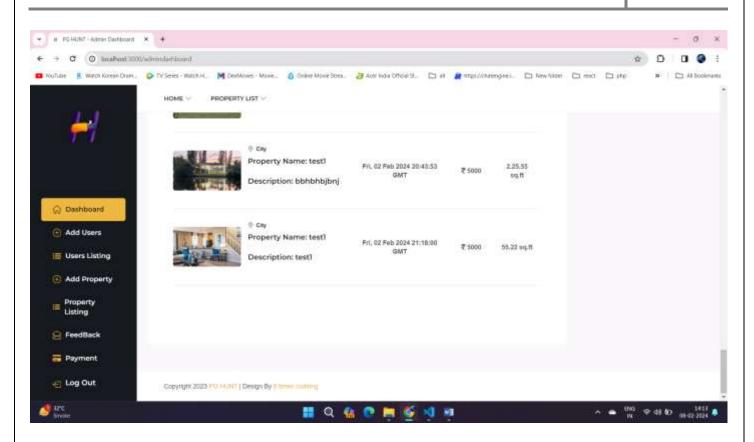




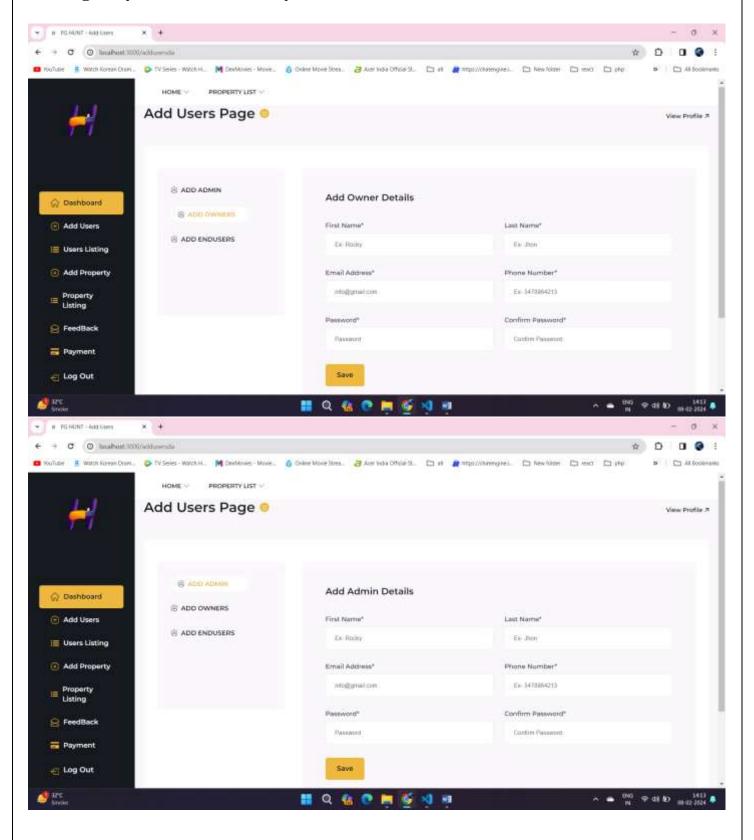


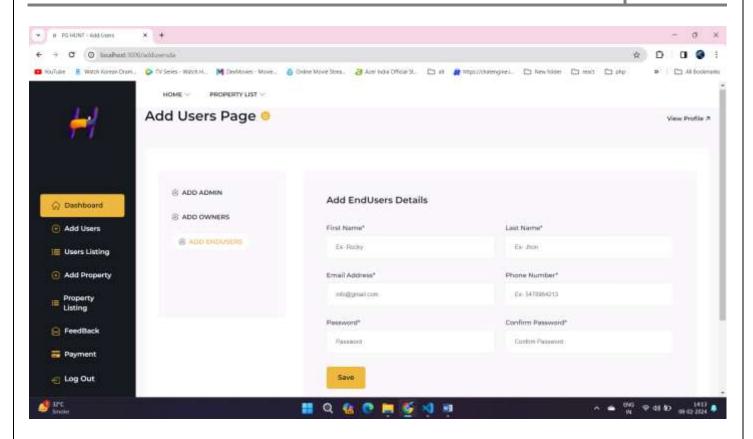
5.2. Page Layouts.: -Admin Dashboard



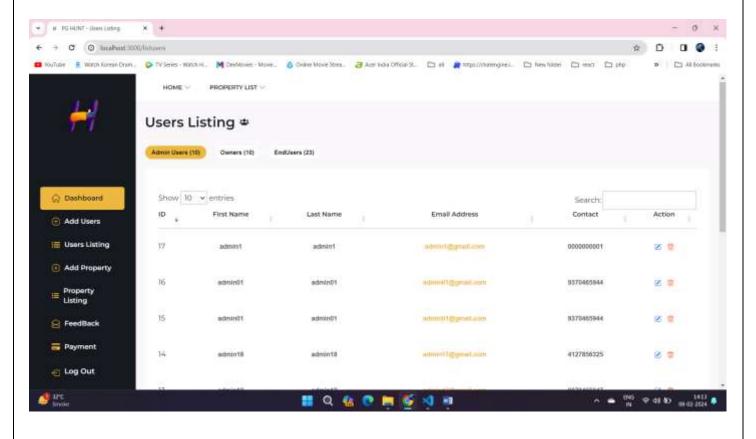


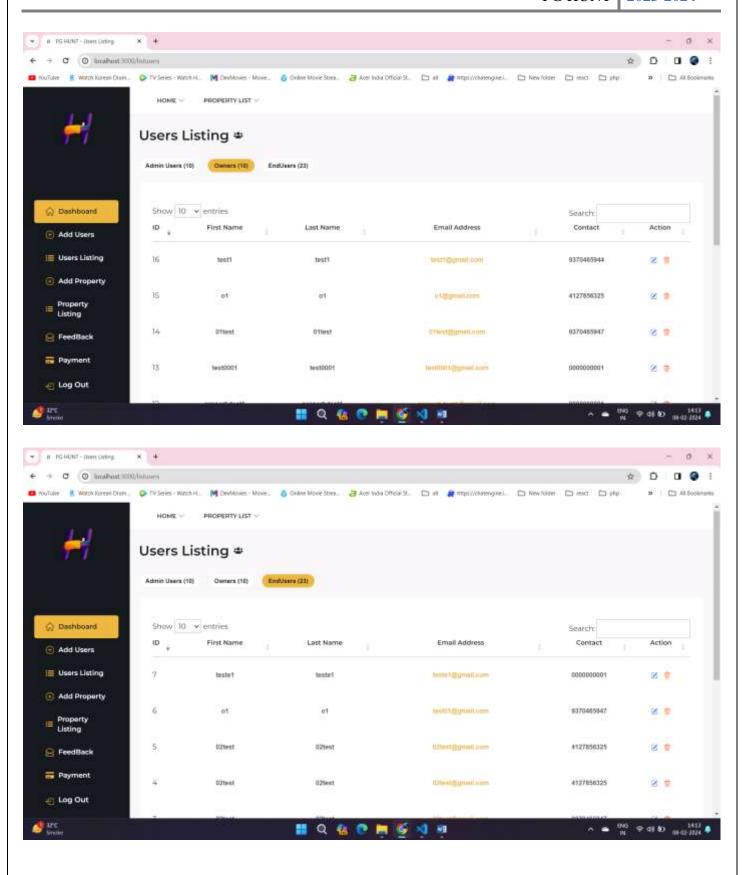
5.2. Page Layouts.: Add Users By ADMIN



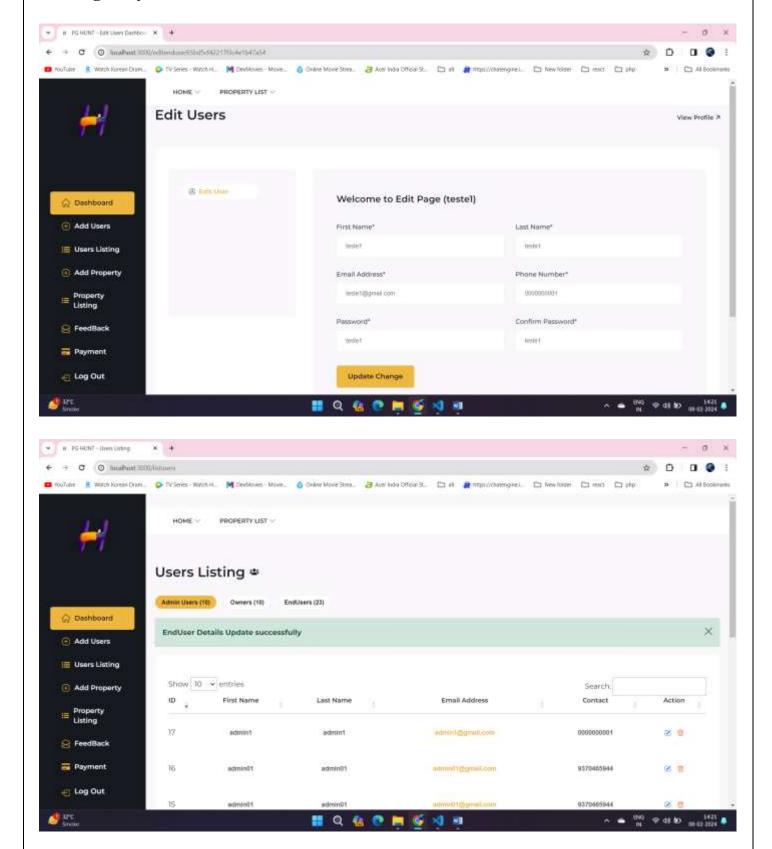


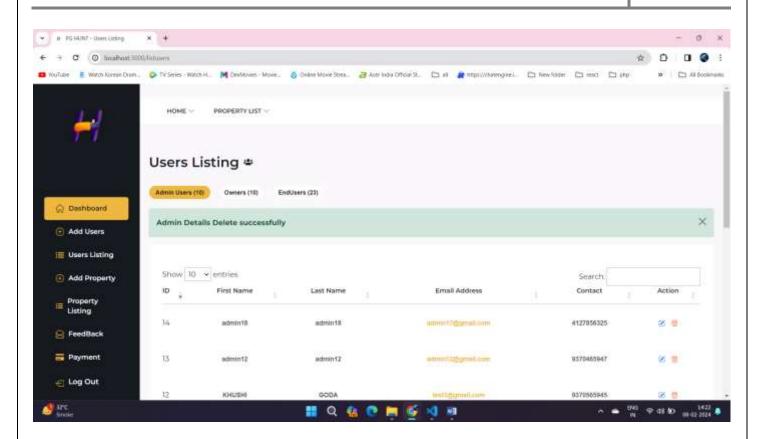
5.2. Page Layouts.: Users Lists Admin, End-users, Owner.



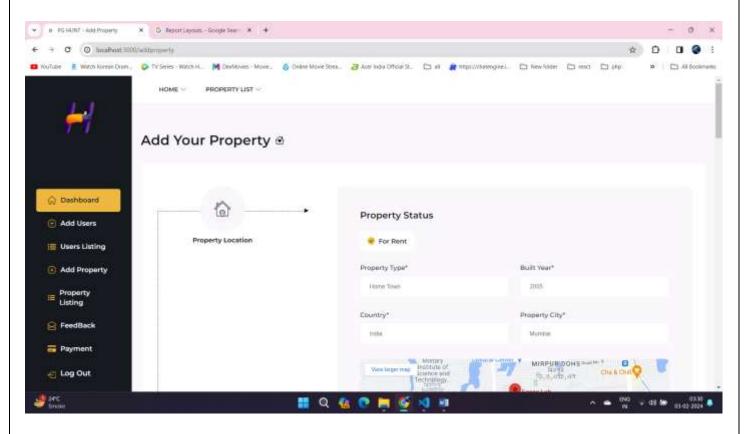


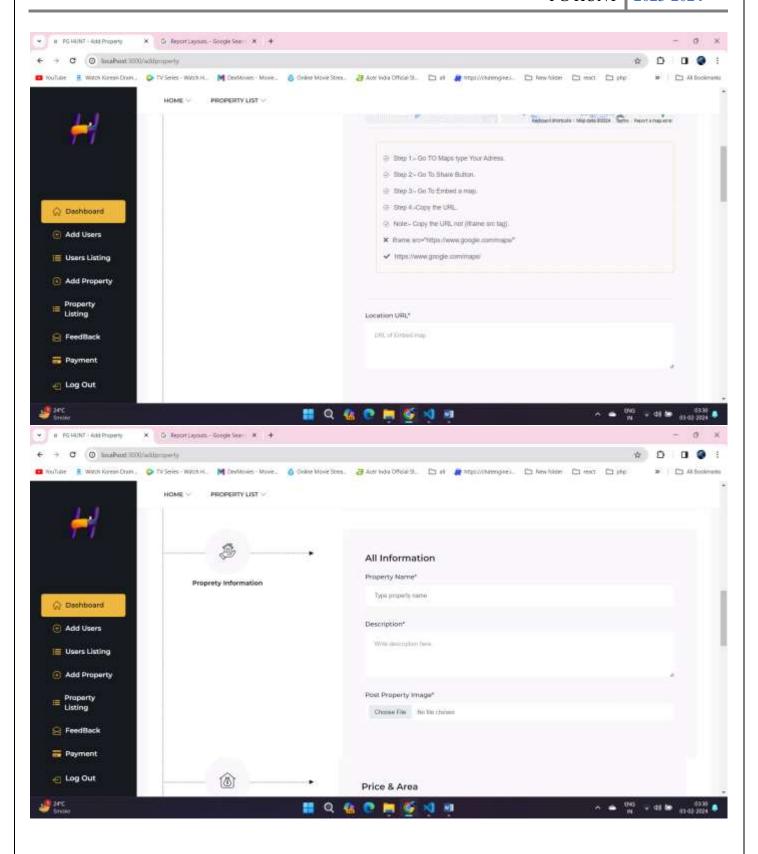
5.2. Page Layouts.: Edit and Delete of Users

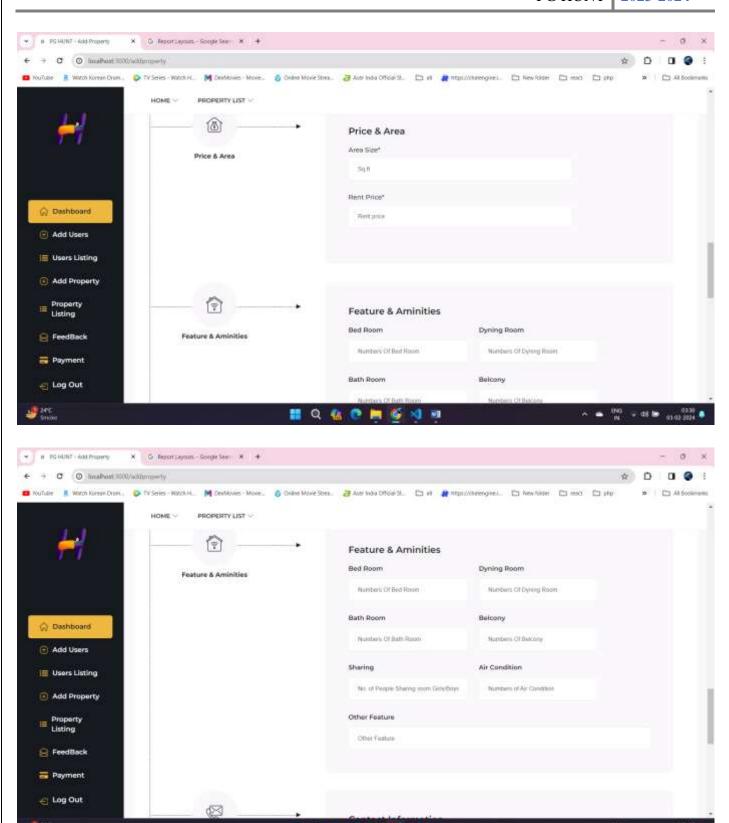


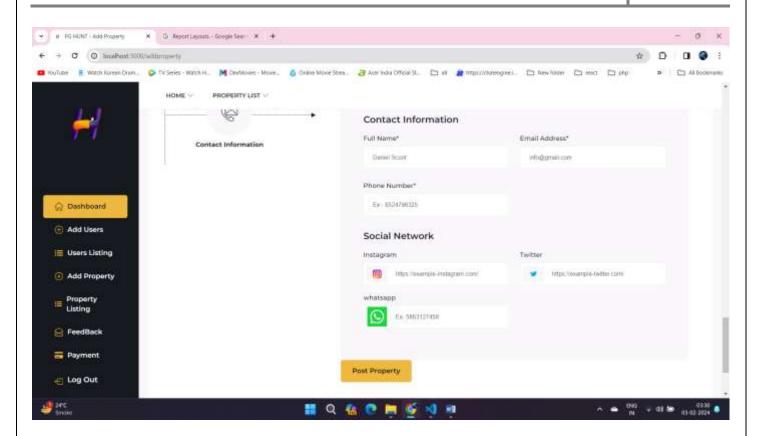


5.2. Page Layouts.: Add Property & Lists

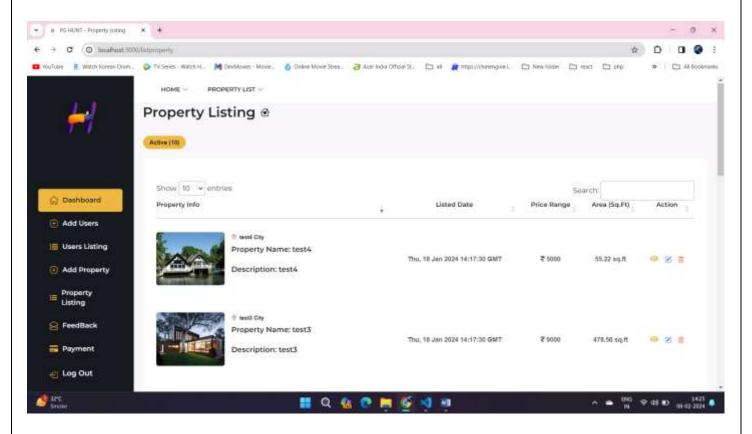


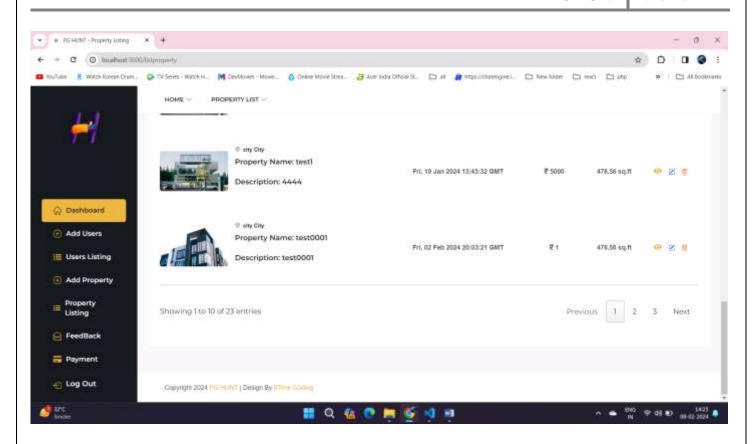




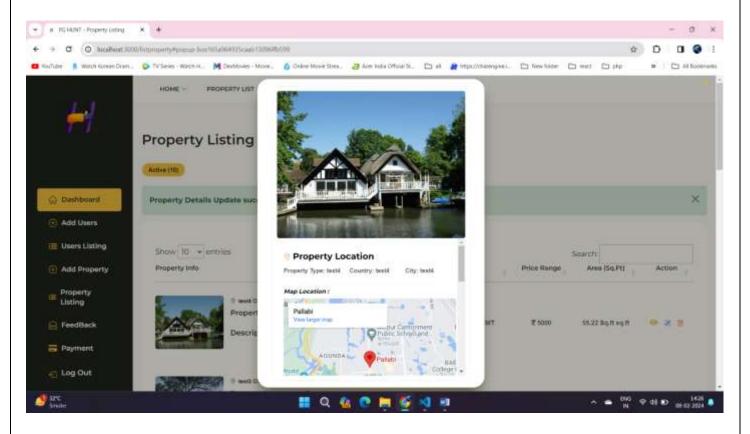


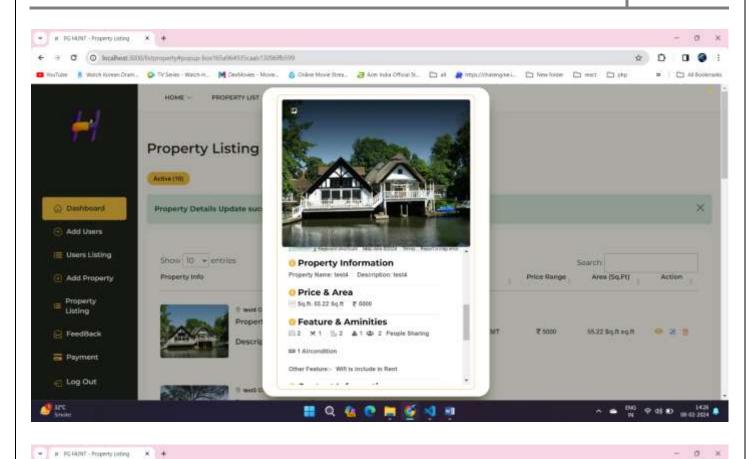
Property Listing: -

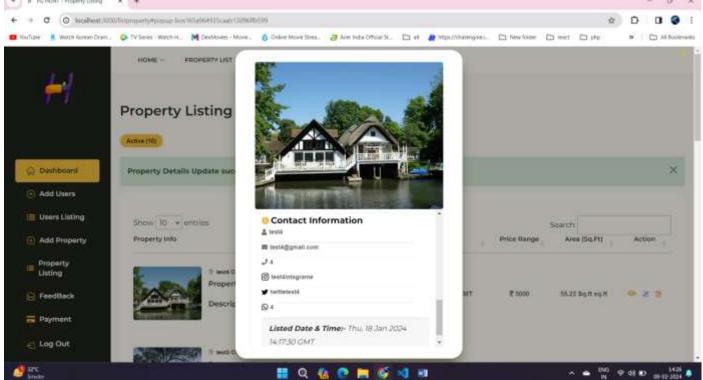


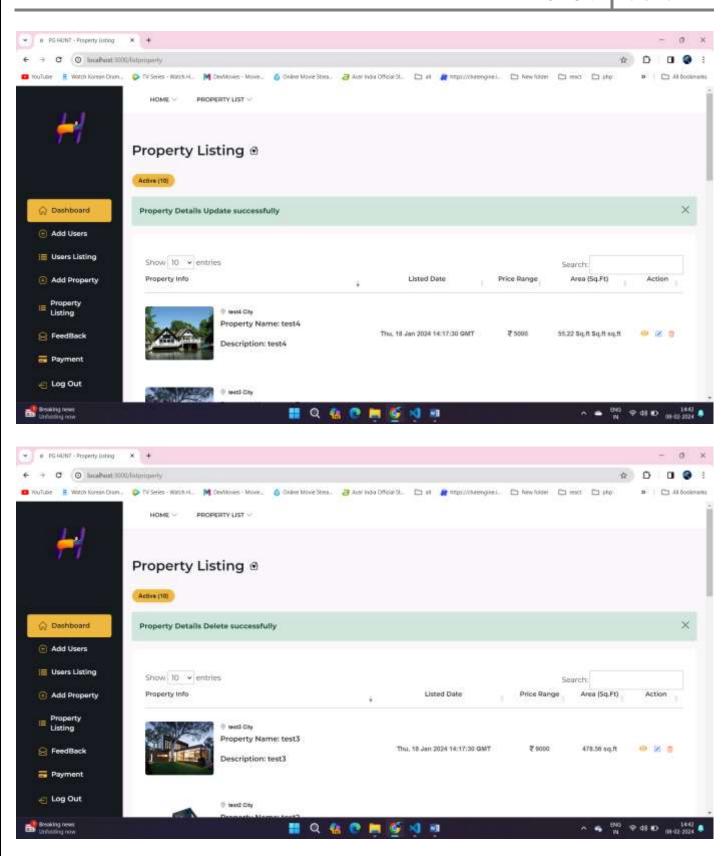


5.2. Page Layouts.: View/Edit /Delete Property

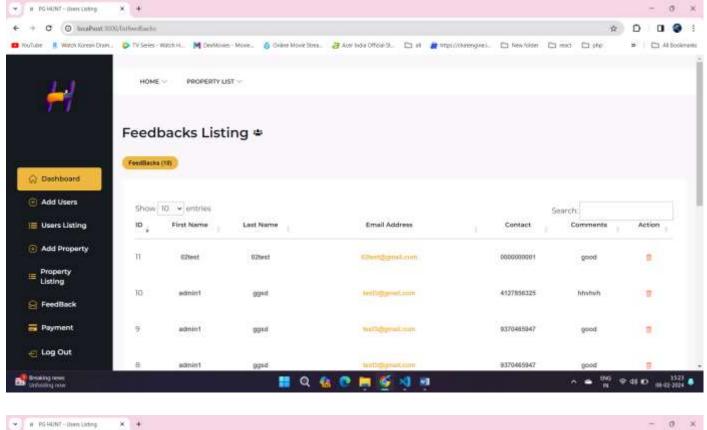


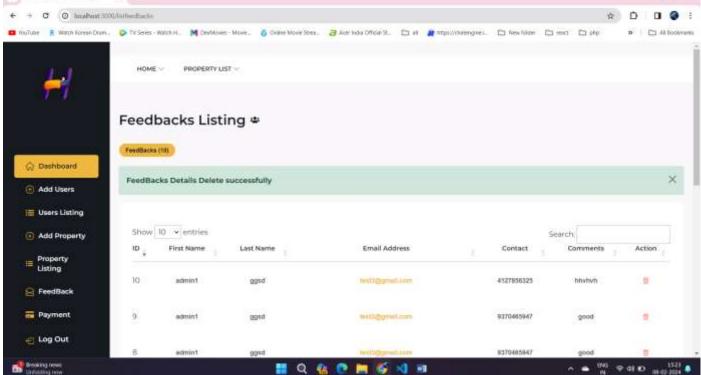




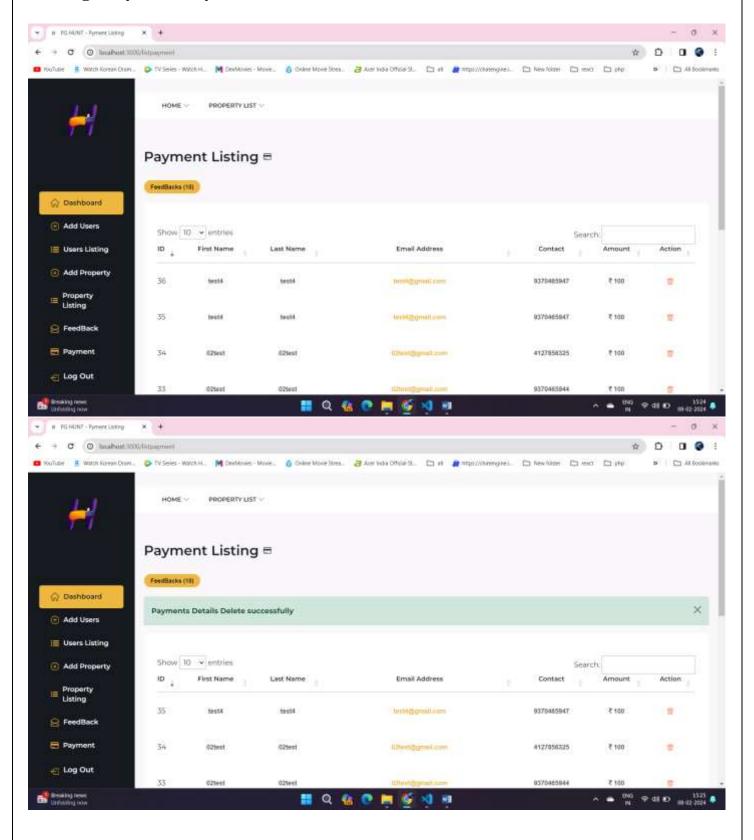


5.2. Page Layouts.: Feedback's

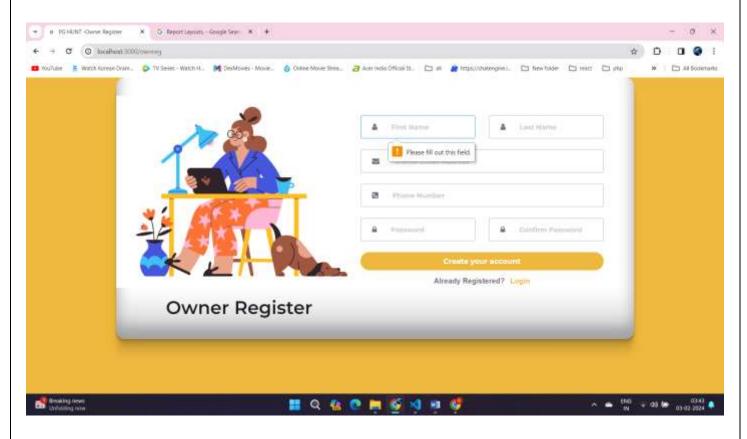


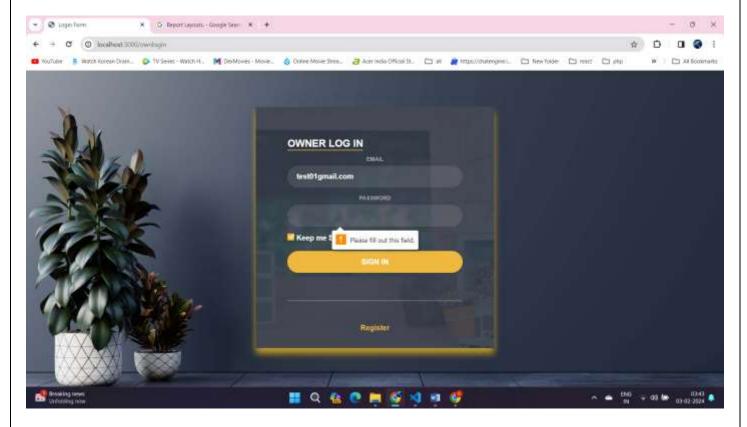


5.2. Page Layouts.: Payments: -

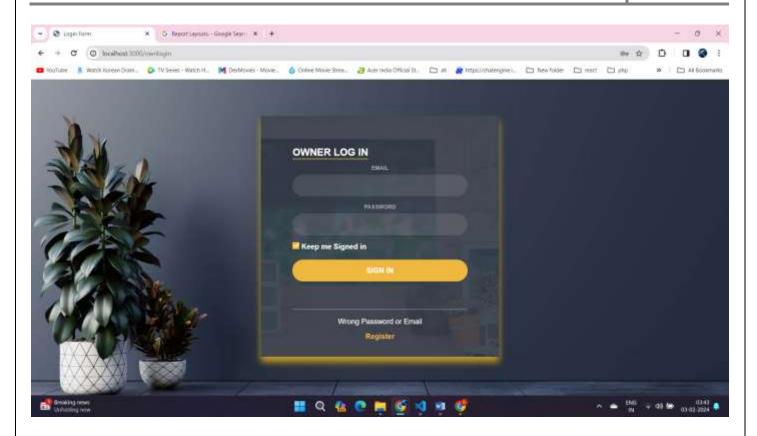


5.3. Error Report Layouts.









6. Testing

6.1. Test Strategy.

"Test Strategy" refers to a high-level document that outlines the approach and methods for testing a software application or system. It typically includes:

- ❖ Objectives: Clear goals and purposes of the testing process.
- Scope: The extent and boundaries of the testing effort, including what functionalities or components will be tested.
- * Test Environment: Description of the hardware, software, and other resources needed for testing.
- * Test Techniques: Methods and approaches for designing and executing tests, such as manual testing, automated testing, regression testing, etc.
- ❖ Entry and Exit Criteria: Conditions that must be met before testing can begin (entry criteria) and criteria for when testing is considered complete (exit criteria).
- ❖ Test Deliverables: Documentation and artifacts produced during testing, such as test plans, test cases, test reports, etc.
- * Risk Assessment: Identification and evaluation of potential risks associated with testing and mitigation strategies.
- * Resource Allocation: Allocation of human and technical resources for testing activities.
- ❖ Schedule: Timeline and milestones for the testing process.
- Communication and Reporting: Procedures for communication among stakeholders and reporting of test results.

The Test Strategy provides a roadmap for the testing team, ensuring that testing activities align with project goals and requirements. It serves as a guide for making decisions throughout the testing process and helps in managing expectations among stakeholders.

6.2. Test Cases.

Test Cases 1: - Login Admin Test Cases

Project Name	PG HUNT
Module Name	Login Admin
Created By	Khushi
Creation Date	05-01-24
Reviewed By	Test Lead/Peers
Reviewed Date	14-01-24

Test Scenario ID	Test Scenario Descripti on	Test Case ID	Test Case Descripti on	Pre- Conditio ns	Test Data	Post Conditio ns	Expecte d Results	Actual Result	Statu s
TS_PG_0 01	Verify the login	TC_Login_ 01	Enter valid Email & Password	Valid Test Data	Email: - abc@gmail.co m Password: abc	User should be able to see the Admin Page	Successf ul Login	Successf ul Login	Pass
TS_PG_0 01	Verify the login	TC_Login_ 02	Enter valid Email & Invalid Password	Valid Test Data	Email: - abc1@gmail.c om Password: ***	Error message "Invalid Usernam e or Password	Error Message	Error Message	Pass
TS_PG_0 01	Verify the login	TC_Login_ 03	Enter Invalid Email & valid Password	Valid Test Data	Email: -**** Password: abc2	Error message "Invalid Usernam e or Password	Error Message	Error Message	Pass
TS_PG_0 01	Verify the login	TC_Login_ 04	Enter Invalid Email & Invalid Password	Valid Test Data	Email: -**** Password: ****	Error message "Invalid Usernam e or Password	Error Message	Error Message	Pass

Test Cases 2: - Login End-users Test Cases

Project Name	PG HUNT
Module Name	Login End-users
Created By	Khushi
Creation Date	18-01-24
Reviewed By	Test Lead/Peers
Reviewed Date	25-01-24

Test Scenario ID	Test Scenario Descripti on	Test Case ID	Test Case Descripti on	Pre- Conditio ns	Test Data	Post Conditio ns	Expecte d Results	Actual Result	Stat us
TS_PG_0 02	Verify the login	TC_LoginED _01	Enter valid Email & Password	Valid Test Data	Email: - abc@gmail.co m Password: abc	User should be able to see the Admin Page	Successf ul Login	Successf ul Login	Pass
TS_PG_0 02	Verify the login	TC_LoginED _02	Enter valid Email & Invalid Password	Valid Test Data	Email: - abc1@gmail.c om Password: ***	Error message "Invalid Usernam e or Password	Error Message	Error Message	Pass
TS_PG_0 02	Verify the login	TC_LoginED _03	Enter Invalid Email & valid Password	Valid Test Data	Email: -**** Password: abc2	Error message "Invalid Usernam e or Password	Error Message	Error Message	Pass
TS_PG_0 02	Verify the login	TC_LoginED _04	Enter Invalid Email & Invalid Password	Valid Test Data	Email: -**** Password: ****	Error message "Invalid Usernam e or Password	Error Message	Error Message	Pass

Test Cases 3: - Login Owners Test Cases

Project Name	PG HUNT
Module Name	Login Owners
Created By	Khushi
Creation Date	29-01-24
Reviewed By	Test Lead/Peers
Reviewed Date	12-02-24

Test Scenario ID	Test Scenario Descripti on	Test Case ID	Test Case Descripti on	Pre- Conditio ns	Test Data	Post Conditio ns	Expecte d Results	Actual Result	Stat us
TS_PG_0 03	Verify the login	TC_LoginOW _01	Enter valid Email & Password	Valid Test Data	Email: - abc@gmail.co m Password: abc	User should be able to see the Admin Page	Successf ul Login	Successf ul Login	Pass
TS_PG_0 03	Verify the login	TC_LoginOW _02	Enter valid Email & Invalid Password	Valid Test Data	Email: - abc1@gmail.c om Password: ***	Error message "Invalid Usernam e or Password	Error Message	Error Message	Pass
TS_PG_0 03	Verify the login	TC_LoginOW _03	Enter Invalid Email & valid Password	Valid Test Data	Email: -**** Password: abc2	Error message "Invalid Usernam e or Password	Error Message	Error Message	Pass
TS_PG_0 03	Verify the login	TC_LoginOW _04	Enter Invalid Email & Invalid Password	Valid Test Data	Email: -**** Password: ****	Error message "Invalid Usernam e or Password	Error Message	Error Message	Pass

7. Future Enhancement.

Cancellation and Refund Policies:

To reduce last-minute cancellations and the risk of "chargebacks" from End-users, it is always a good idea to have your End-users agree to your cancellation and refund policy. This should be attached to the End-users order for future reference. Occasion makes this easy for you and your End-users

Instant Booking Confirmation:

Instant confirmation means that the indicated rooms are readily available, and your reservation can be confirmed once you complete the payment.

Search and Filtering:

Search filters are attributes on Property listing pages used to refine search results and narrow down a selection of brand inventory. Using search filters allows End-users to find the most relevant results according to the Property characteristics they select.

User Profiles and Preferences:

A User's profile contains information about them, such as their name, phone number, and email address. The profile can also include their photo. In addition to these details, the profile stores specific user preferences that streamline their system use.

Owner Dashboard: -

The Owner Dashboard displays for users assigned the permission to display the owner page. The dashboard includes tabs: List of End-Users, Booking History, Payment History, Owner Profile, Delete Accounts.

8. Bibliography

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- 3. https://www.w3schools.com/mongodb/
- 4. https://www.netguru.com/glossary/node-js
- 5. https://ejs.co/
- 6. https://www.geeksforgeeks.org/use-ejs-as-template-engine-in-node-js/
- 7. Other Resources:
 - https://getbootstrap.com/
 - https://jquery.com/
 - https://www.w3schools.com/css/css3_animations.asp
 - https://www.techtarget.com/whatis/definition/Nodejs
 - https://www.mongodb.com/docs/
 - https://www.tutorialspoint.com/mongodb/index.htm
 - https://www.mongodb.com/docs/v5.3/reference/method/db.createCollection/
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