Final Report

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1. INTRODUCTION

1.1 Project Overview

The House Hunt Project is a structured approach to finding a suitable residential property that meets the needs, preferences, and financial capacity of an individual or family. Whether the goal is to buy, rent, or invest, this project is designed to simplify and streamline the house hunting process using data-driven research, comparison techniques, and strategic planning.

1.2 Purpose

A House hunt project typically serves multiple purposes depending on the context—academic, personal, or professional. It helps you learn how location, budget, property type, and amenities influence housing choices. It mimics the decision-making process adults face when house hunting, giving you a taste of real-world problem-solving it shows how to manage budget skills and communication with others in a friendly way and how to manage financial limitations and make practical decisions.

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2. IDEATION PHASE

2.1 Problem Statement:

In today's urban landscape, finding suitable housing within a specific budget and lifestyle requirement is a significant challenge for individuals and families. This project simulates the real-world process of identifying and selecting a home by evaluating various factors such as location, budget, transportation access, space needs, safety, and amenities. The goal is to empower students to make informed and practical housing decisions through research, critical thinking, and analysis.

2.2 Empathy Map Canvas

- **Users:** clients and owners

- **Thinks:** Safety, Investment, Affordability
- **Sees:** Advertisements, Price hikes, Competition
- **Says:** Kind-friendly, Short commute, Safe area
- **Feels:** Excited, Nervous, Overwhelmed
- **Does:** Researches, Visits homes, Talks to agents

2.3 Brainstorming

- Help a fictional family find a suitable home
- Compare housing options based on various criteria
- Develop budgeting, research, and analytical skills
- Real-world budgeting experience
- Understanding trade-offs in decision-making
- Better awareness of urban living condition

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3. REQUIREMENT ANALYSIS

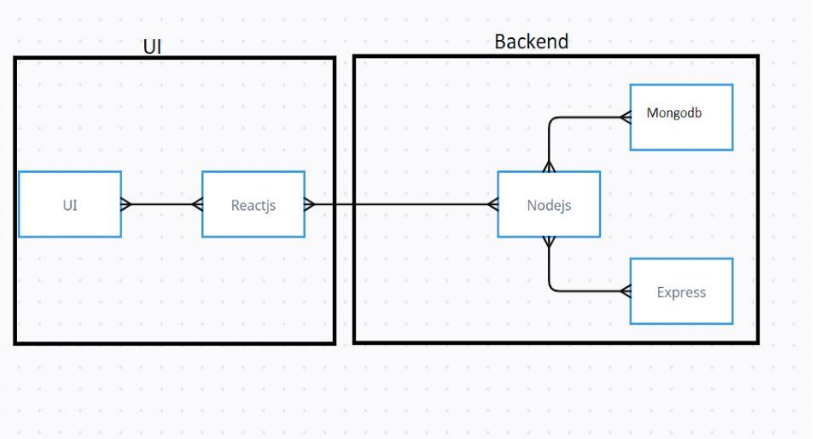
3.1 Customer Journey Map

1. Client registers/login
2. Posts a project with details
3. Client verifies terms and conditions
4. Client selects suitable house
5. Client check and compare
6. Feedback is shared

3.2 Solution Requirement

- Authentication system (JWT)
- User Registration & Profiles
- Booking & Scheduling
- Map Integration
- Payment Integration
- Notification System

3.3 Data Flow diagram



Users interact via the frontend which communicates with the backend using Nodejs and MongoDB

3.4 Technology Stack

- **Frontend**: React.js, Axios, Bootstrap, Material UI
- **Backend**: Node.js, Express.js
- **Database:** MongoDB with Mongoose
- **Authentication**: JWT
- **Version Control**: Git, GitHub

4.PROJECT DESIGN

4.1 Problem-Solution Fit

The solution bridges this gap by offering an intuitive, real-time property search platform that connects home seekers with verified sellers and renters. With features like smart filtering, location-based suggestions, instant messaging, and trusted reviews, it simplifies the discovery and decision-making process—making house hunting efficient, transparent, and stress-free

4.2 Proposed Solution

The proposed solution is a centralized, user-centric platform that simplifies the house hunting process through smart, real-time technology. It allows users to search, compare, and connect with property owners or agents seamlessly.

4.3 Solution Architecture

- React for frontend and user interface
- Express handles server-side logic and APIs
- MongoDB stores user data, project details, and chat history
- Admin panel built into backend for platform control

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5 PROJECT PLANNING & SCHEDULING

5.2 Project Planning

Milestone	Activities
M1	Project folder setup, environment configuration
M2	Backend API development
M3	MongoDB schema and models setup
M4	Frontend development with React
M5	UI testing and backend integration
M6	Final testing, bug fixing, and deployment

6.FUNCTIONAL AND PERFORMANCE TESTING

5.3 Performance Testing

- Response time for any operation remains <2 seconds under expected load
- System can handle 1000+ concurrent users without significant slowdowns
- No data loss or inconsistency during stress tests
- Real-time chat retains sub-second latency under standard load

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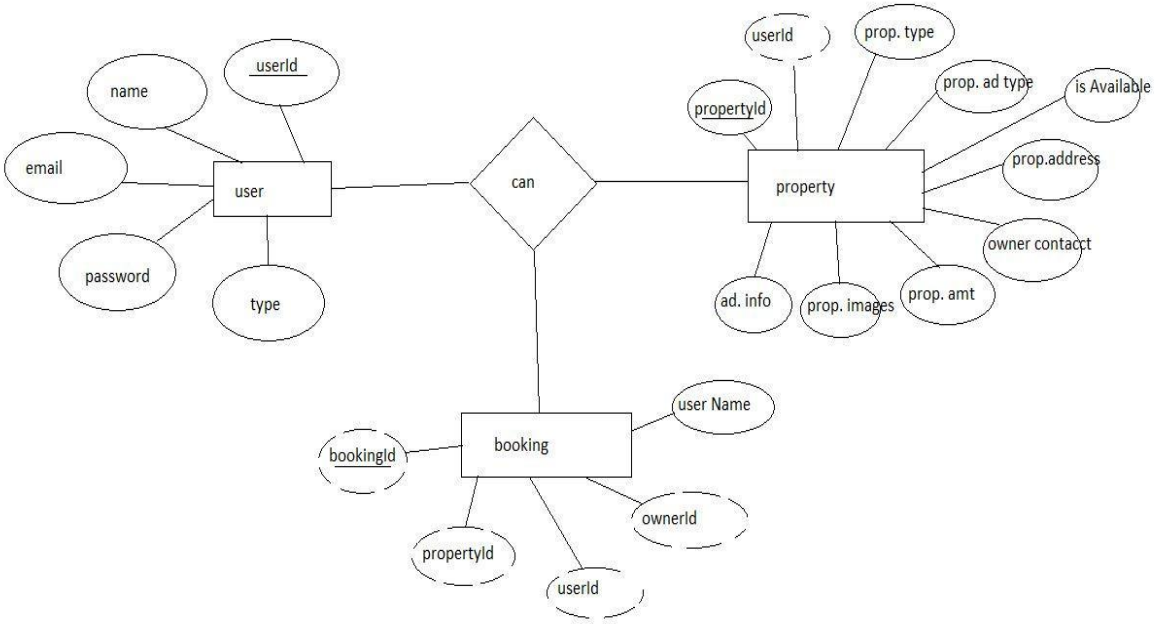
7.RESULTS

7.1 ER Diagrams

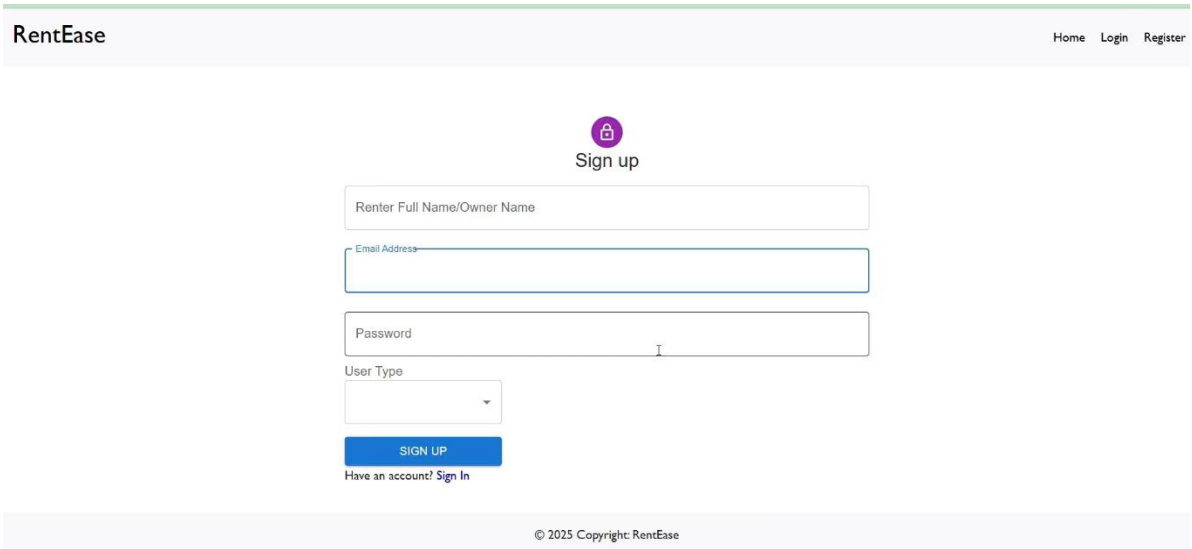


For data storage and retrieval, our backend relies on MongoDB. MongoDB allows for efficient and scalable storage of user data, including user profiles, for booking room, and adding room, etc. It ensures reliable and quick access to the necessary information the frontend and backend components, along with moment, Express.js, and MongoDB, form a comprehensive technical architecture for our House rent app

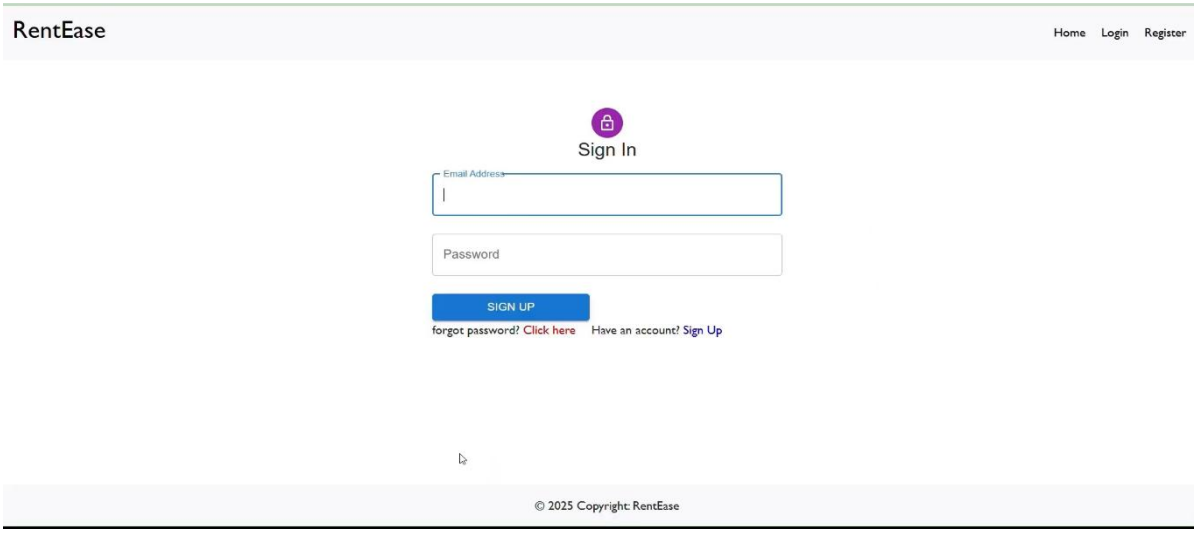
7.2 Output Screenshots

On completing the development part, we then run the application one last time to verify all the functionalities and look for any bugs in it. The user interface of the application looks a bit like the images provided below.

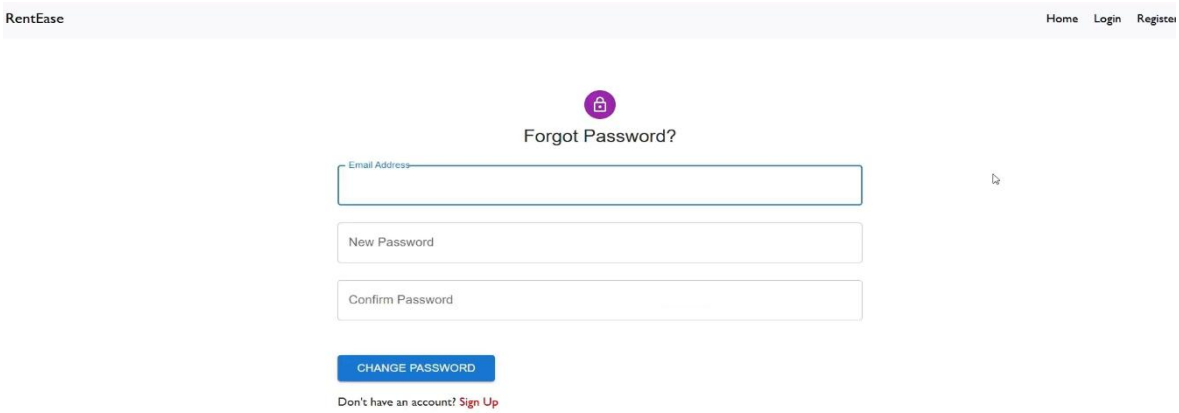
Register or sign up:



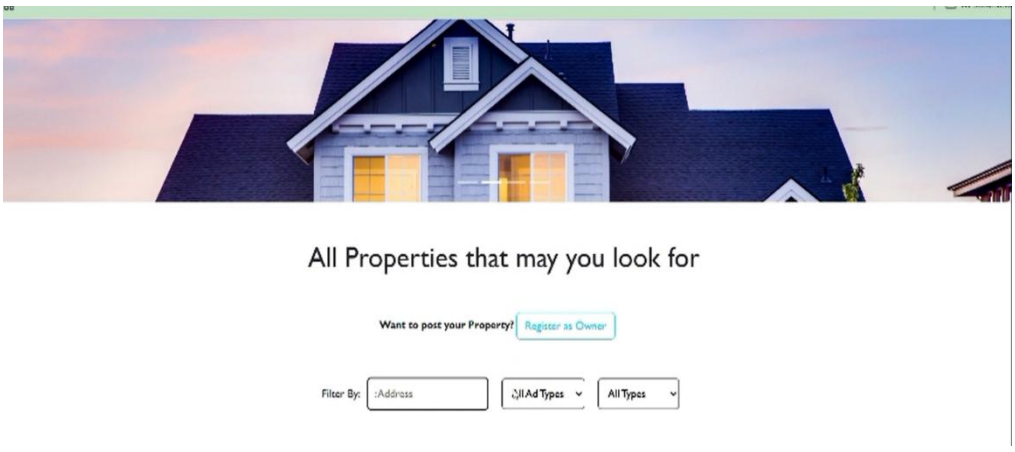
Login:



Password set up:

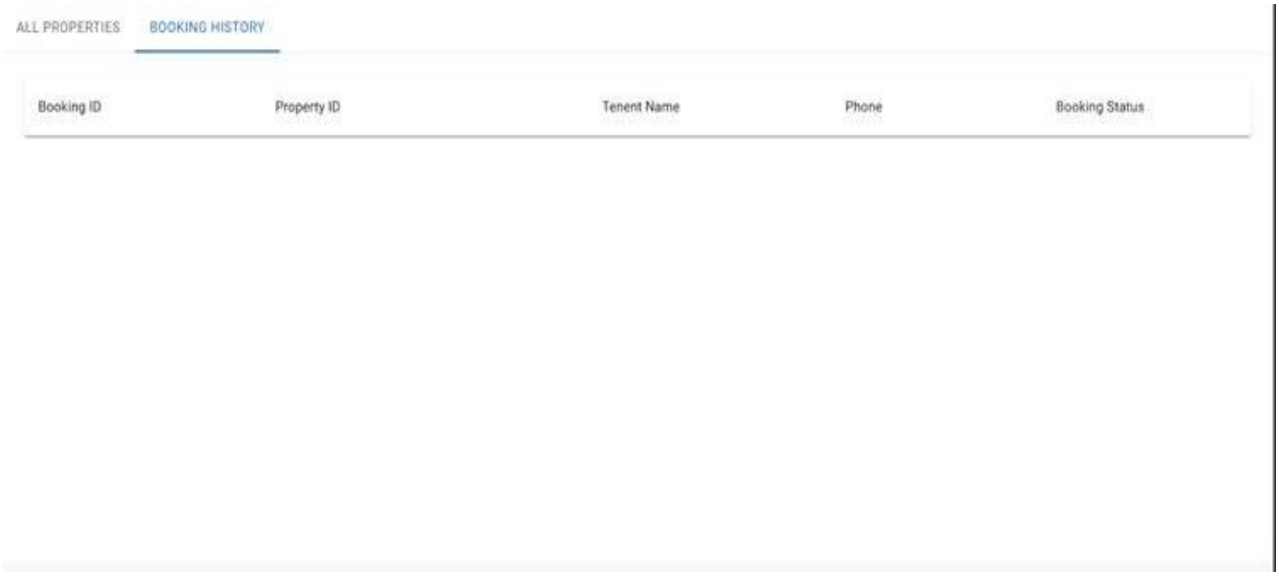


Properties:



Admin Panel:

Booking History:



ADVANTAGES & DISADVANTAGES

Advantages

- Builds real-world knowledge of property selection and housing markets.
- Sharpens analytical thinking and comparison skills.
- Encourages financial planning and smart budgeting.

- Boosts communication through interaction with sellers or agents.
- Offers teamwork experience if done in groups.

Disadvantages

- Takes considerable time and effort.
- Too many choices can lead to indecision.
- Market volatility may disrupt plans.
- Beginners may overlook important flaws.
- Can cause stress under pressure or deadlines.

9.CONCLUSION

The house hunt project provides a valuable blend of practical learning and real-world application. It enhances skills in research, budgeting, and decision-making, while also highlighting the challenges of navigating complex markets and managing time efficiently. Overall, it's a rewarding experience that prepares individuals for future housing decisions with greater confidence and insight.

10.FUTURE SCOPE

- AI and virtual reality tools will enhance the search and viewing experience.
- Growing demand for green and sustainable homes will shape preferences.
- Data analytics will guide smarter, insight-driven housing choices.
- Prepares students for careers in real estate, design, or urban planning.
- Can evolve into advanced research on housing trends and smart cities.
- **Mobile apps** and smart platforms will simplify and personalize property searches.
- **Augmented reality** may allow users to visualize interior changes before purchase.
- **Blockchain** could streamline property transactions and ensure transparent records.

11.APPENDIX

- **GitHub Repository:**

  https://github.com/yelliboinakusuma01/HouseHunt-Finding-Your-Perfect-Rental-Home

- **Project Demo and Code Folder:**

  https://drive.google.com/drive/folders/19eu8LNQCtCtfKz7lQrAvkSEg_dSixJq3?usp=sharing

- **Dataset:** Not applicable

- **Tools Used:** VS Code, MongoDB Atlas, Postman, GitHub