

HOUSEHUNT – RENTAL BOOKING PLATFORM

1. INTRODUCTION

1.1 Project Overview

House Hunt is a full-stack rental booking web application built using the **MERN stack** (MongoDB, Express.js, React.js, Node.js). It allows users to search, book, and manage rental properties with role-specific features for renters and owners, offering secure and transparent housing workflows.

1.2 Purpose

The platform digitizes the rental process, from verified listings and property search to messaging, booking, and agreement signing. It simplifies decision-making for renters while empowering owners to manage listings and view bookings.

2. IDEATION PHASE

2.1 Problem Statement

Renters struggle with fragmented listing portals, no direct communication with owners, and manual rental formalities. There's a lack of centralized housing platforms offering end-to-end digital workflows.

2.2 Empathy Map Canvas

- **Needs:** Transparent, fast rental search with secure agreement flow
- **Pain:** No centralized system, inconsistent property info, offline documentation
- **Gain:** All-in-one dashboard, verified listings, chat system, agreement e-signature

2.3 Brainstorming

Explored key platform features:

- Renter onboarding and listing filters
 - Owner-renter in-app messaging
 - Tour scheduling and booking dashboard
 - Notifications, agreement flow, and renter tracking
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3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

Journey covers:

Login → Search → Chat → Schedule Visit → Book → E-sign Agreement → Track Status → Notify

3.2 Solution Requirement

- **Functional Requirements:**
Register, Login, Search Properties, Message Owner, Schedule Visit, Book & E-sign Agreement
- **Non-Functional Requirements:**
Secure, scalable, responsive UI, reliable APIs, high uptime (99.9%)

3.3 Data Flow Diagram

Level 0 DFD shows:

User → UI (React) → Backend APIs (Express.js) → MongoDB → Auth, Booking, Messaging Modules

3.4 Technology Stack

Layer	Technologies/Tools
Frontend	React.js, HTML/CSS, Axios
Backend	Node.js, Express.js
Database	MongoDB
Other	JWT Auth, DocuSign API, WebRTC, OneSignal

4. PROJECT DESIGN

4.1 Problem–Solution Fit

HouseHunt directly addresses renters' needs by enabling full digital rental workflows, reducing friction and boosting transparency.

4.2 Proposed Solution

A two-role architecture:

- **Renters:** Search listings, message owners, book and sign digitally
- **Owners:** Upload properties, respond to messages, manage availability

4.3 Solution Architecture

Layered system:

- **React Frontend** – renter/owner dashboards
 - **Express Backend** – RESTful APIs for chat, listings, bookings
 - **MongoDB** – storing users, listings, agreements
 - **Integrations** – JWT for auth, DocuSign for e-signature, Maps API for location data
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5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Sprint-based execution:

- **Sprint 1:** Renter onboarding & property search
 - **Sprint 2:** Listing upload & details view
 - **Sprint 3:** Chat & tour scheduling
 - **Sprint 4:** Booking & agreement signing
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6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

- Postman, JMeter, Lighthouse used
- API Response: < 2 seconds
- Load-tested: 1000 concurrent users
- UI Score: 90+ across devices

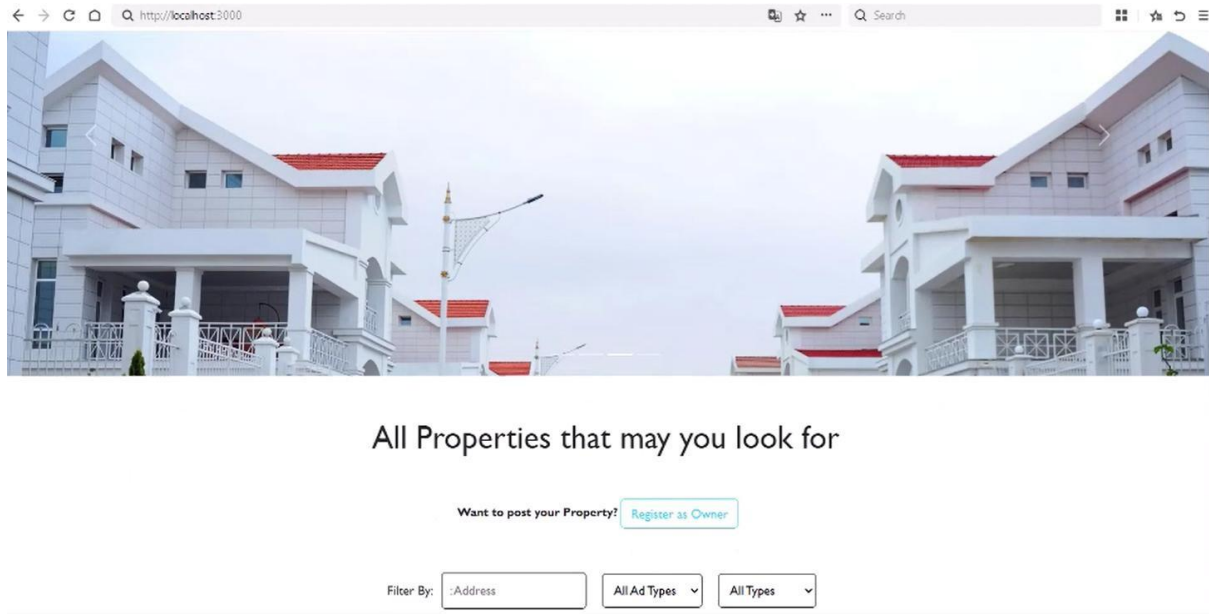
6.2 Functional Testing


Tested:

- Login/Register
- Chat and notifications
- Booking flow
- Agreement e-signature
- Mobile responsiveness

7. RESULTS

7.1 Output Screenshots




Sign up

Renter Full Name/Owner Name

sai karthik

Email Address

saikarthik123@gmail.com

Password

User Type

Owner

SIGN UP

Have an account? Sign In



Sign In


Email Address

saikarthik123@gmail.com

Password

SIGN UP

forgot password? [Click here](#) Have an account? [Sign Up](#)



Location:
Gudlavalleru

Property Type:
residential


Ad Type:
sale

Owner Contact:
6281955009

Availability:
Unavailable

Property Amount:
Rs.90000

Not Available



Location:
Guduvada
pradesh

Property Type:
commercial

Ad Type:
sale

Owner Contact:
7013988016

Availability:
Available

Property Amount:
Rs.9000000

Additional Info: Duplex Building . 3000 sq feet .

Owner Contact:
7013988016

Location: Guduvada,Krishna District
.Andhra pradesh

Availability: Available

Property Type: commercial

Ad Type: sale

Property Amount:
Rs.9000000

Additional Info: Duplex Building . 3000 sq feet .

Your Details to confirm booking

Full Name

Phone Number

[Book Property](#)

RentEase

Hi Sai karthik [Log Out](#)

[ADD PROPERTY](#) [ALL PROPERTIES](#) [ALL BOOKINGS](#)

Booking ID	Property ID	Tenent Name	Tenent Phone	Booking Status	Actions
685f808dbab7c254c9dea894	685f8055bab7c254c9dea882	Nithin Roy	8766201134	booked	Change

RentEase

Hi Roy [Log Out](#)

[ALL PROPERTIES](#) [BOOKING HISTORY](#)

Booking ID	Property ID	Tenent Name	Phone	Booking Status
685f808dbab7c254c9dea894	685f8055bab7c254c9dea882	Nithin Roy	8766201134	booked

8. ADVANTAGES & DISADVANTAGES

Advantages

- Real-time property access
- Digital agreements
- Mobile and desktop UI
- Verified owner communication

Disadvantages

- Requires internet
 - Payment integration pending
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9. CONCLUSION

House Hunt streamlines the rental experience by combining verified property search, direct chat, and digital agreement signing. It's modular, renter-centric, scalable, and ready for market expansion.

10. FUTURE SCOPE

- Add payment gateway
 - Email/SMS alerts
 - Renter feedback & rating system
 - Geo-tagged tracking of property views
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11. APPENDIX

- **Source Code:** Included in submission
- https://drive.google.com/drive/folders/12oUiWvJFB_p2oCIINAXdYp5ovLEv5QYN?usp=sharing
- <https://github.com/karthikkollipara/House-Hunt.git>