

HouseHunt

Finding Your Perfect Rental Home

Full Stack Development with MERN

Project Report

Team ID: LTVIP2026TMIDS84924

Date: 18 February 2026

1. Introduction

Project Title	HouseHunt – Finding Your Perfect Rental Home
Team ID	LTVIP2026TMIDS84924
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Team Member	Leela Jyothi Sri Ganta
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Date	18 February 2026

2. Project Overview

Purpose

HouseHunt is a MERN stack web application designed to simplify the process of finding, renting, and managing rental properties. It connects property owners and tenants, providing a seamless experience for property listing, searching, booking, and communication.

Key Features

Feature	Description
Authentication & Authorization	Role-based access control for Owners, Users, and Admins using JWT tokens
Property Listing & Management	Owners can list, update, and manage their rental properties
Property Search & Filtering	Tenants can search and filter listings by location, price, and type
Booking & Payment System	Integrated booking workflow with payment processing support
Chat & Notifications	Real-time messaging and notification system between owners and tenants
Reviews & Recent Views	Users can leave reviews and track recently viewed properties
Admin Dashboard	Centralized panel to manage all users, properties, and bookings

3. System Architecture

HouseHunt follows a standard MERN architecture, with a clear separation of concerns across the frontend, backend, and database layers.

Architecture Overview



Frontend

- React.js with modular component structure
- Axios for API communication
- CSS Modules for scoped, maintainable styling

Backend

- Node.js with Express.js framework
- RESTful API design with modular controllers, routes, and middlewares
- JWT-based authentication and authorization

Database

- MongoDB (NoSQL) for flexible, scalable data storage
- Mongoose ODM for schema definition and data validation

4. Setup Instructions

Prerequisites

- Node.js v16 or higher
- npm or yarn package manager
- MongoDB (local installation or cloud instance via MongoDB Atlas)

Step 1: Clone the Repository

```
git clone https://github.com/kamalgandi508/RentEase-intership
```

Step 2: Backend Setup

```
cd "RentEase-intership/Project Files/backend"  
npm install
```

Configure the MongoDB connection string in config/connect.js, then start the server:

```
node index.js
```

Step 3: Frontend Setup

```
cd "RentEase-intership/Project Files/frontend"  
npm install  
npm start
```

5. Folder Structure

```
RentEase-intership/  
|   Project Files/  
|   |   backend/  
|   |   |   config/      # DB connection  
|   |   |   controllers/ # Route handlers  
|   |   |   middlewares/ # Auth & validation  
|   |   |   routes/      # API route definitions  
|   |   |   schemas/     # Mongoose models  
|   |   |   uploads/     # File storage  
|   |   |   index.js    # Entry point  
|   |   frontend/  
|   |   |   public/  
|   |   |   src/  
|   |   |       |   modules/      # Feature modules  
|   |   |       |   styles/      # CSS Modules  
|   |   |       |   App.js       # Root component  
|   README.md
```

6. Running the Application

1. Start MongoDB server (if running locally)
2. Start the backend: navigate to Project Files/backend and run node index.js
3. Start the frontend: navigate to Project Files/frontend and run npm start
4. Open your browser and access the app at <http://localhost:3000>

7. API Documentation

The backend exposes RESTful API endpoints across multiple resource domains. All endpoints follow standard HTTP conventions and return JSON responses.

Users	/api/users – Registration, login, profile management
Properties	/api/properties – Listing, search, CRUD operations
Bookings	/api/bookings – Create, view, manage bookings
Payments	/api/payments – Payment initiation and status
Chat	/api/chat – Message threads between users
Notifications	/api/notifications – User alerts and updates
Reviews	/api/reviews – Property ratings and comments

8. Authentication & Authorization

HouseHunt uses JSON Web Tokens (JWT) for stateless, secure authentication. Upon successful login, users receive a token that must be included in the Authorization header of all protected requests.

Role-Based Access Control

- User – Can search properties, make bookings, and leave reviews
- Owner – Can list and manage their properties, respond to bookings
- Admin – Full access to manage all users, properties, and bookings via the dashboard

9. User Interface

- Fully responsive React UI compatible with desktop and mobile browsers
- Separate module structure for admin, owner, and tenant-facing features
- Clean navigation with dedicated dashboard views per role
- CSS Modules ensure scoped, conflict-free styling across components

10. Testing

All core features of HouseHunt were tested manually across the following areas:

- User registration, login, and session management
- Property listing creation, editing, and deletion by owners
- Search and filtering functionality for tenants
- Booking creation, confirmation, and cancellation
- Chat messaging between users and owners

- Admin dashboard operations including user and content management

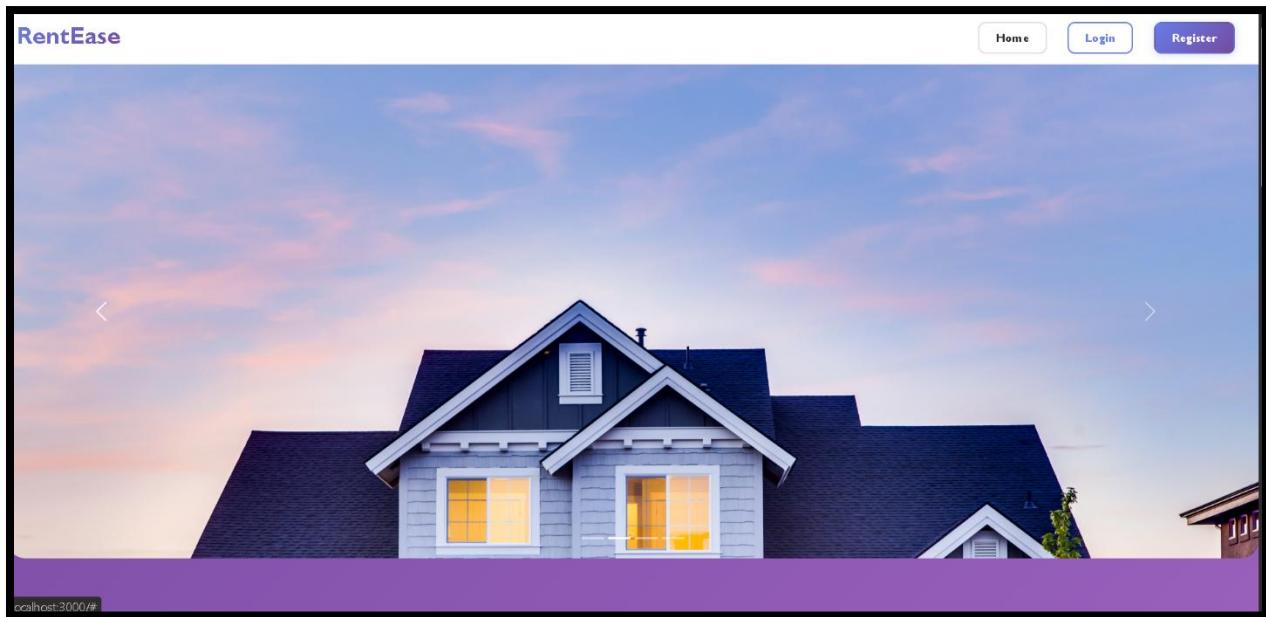
Note: Automated test suites (unit and integration tests) are planned for future development sprints.

11. Project Demo & Repository

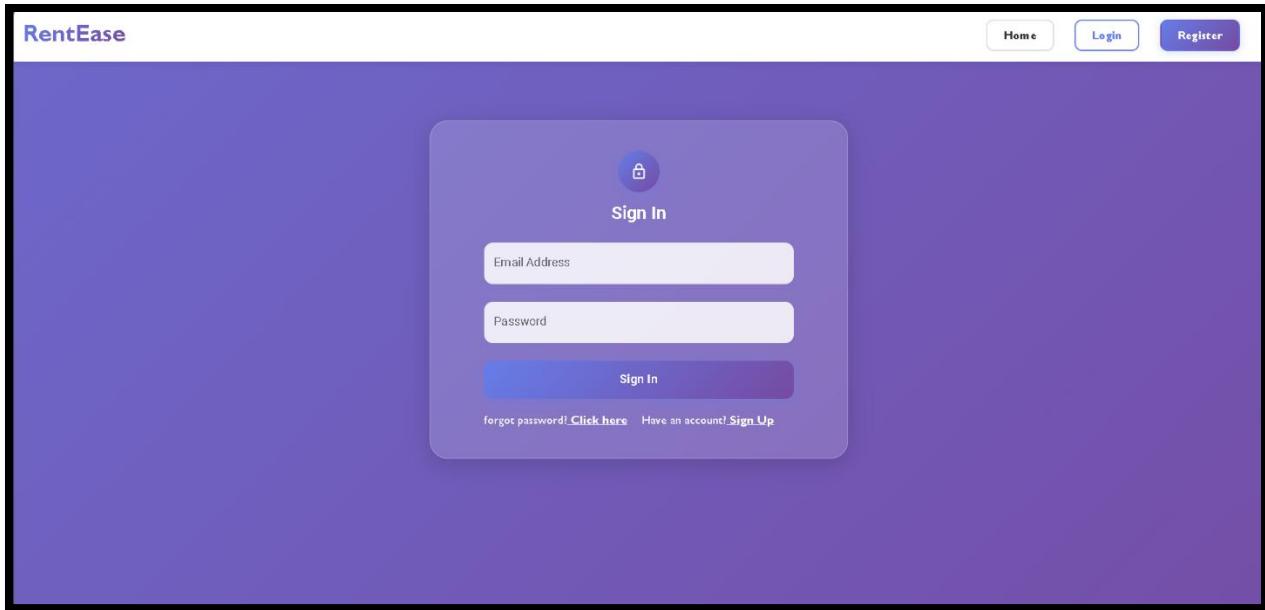
The project source code and demonstration video are available at the following links:

GitHub Repository	https://github.com/kamalgandi508/RentEase-intership
Video Demonstration	https://drive.google.com/file/d/1MKxk3njbXcAm2LSPBNxPp5cekrWO2Aw-/view

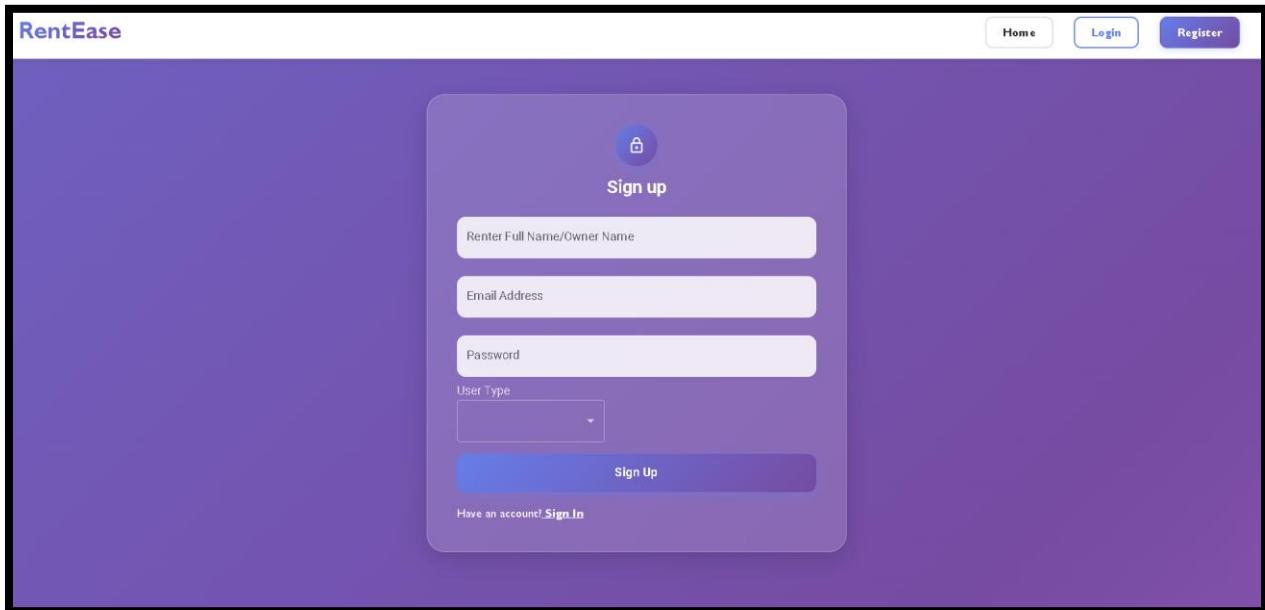
HomePage:



LoginPage:



RegisterPage:



Admin Side:

Welcome back, Kiran Mahesh! 🌟

2 Top Properties
→ 2 total

4 Active Bookings
→ 4 pending/booked

\$25,000 Avg. Rent
→ 5 book & booking

7 PropertyWise
→ 7 total views

Last updated: 9:50 AM | Mon

Property Performance

New top performing properties

Property	Type	Status	Price	Views
residential	Pedddepalli Tadepalligudem...	For Rent	₹10,000	0 → 3
residential	...	For Rent	₹15,000	0 → 4

Recent Bookings

Last 7 booking requests

User	Property	Date	Status
CHWIS PRONEETH	Booked
RDXarun	Booked
armanaj	Booked
farhan	Booked
farhan	Booked
farhan	Booked

Payment History

Recent payments received from tenants

Transaction ID	Name	Property	Amount	Date	Status
#520a471	farhan	...	₹5,000	2024-01-10	Paid
#6236555	armanaj	...	₹5,000	2024-01-10	Paid
#4202424	MDFarhan	Pedddepalli Tadepalligudem...	₹10,000	2024-01-10	Paid

Quick Actions

- Add Property
- View Bookings
- Analytics
- Reviews

Add New Property
Fill in all the details to list your property

Basic Information

Property Type *	Listing Type *	Finished Status *
Residential	For Rent	Unfinished

Property Address *

Enter complete address with locality, city, state

Area/Size *
e.g., 1200 sq ft

Property Details

Bedrooms	Bathrooms	Owner Contact *	Monthly Rent *
1	1	10-digit phone number	\$ 0

Parking Available

Amenities

Click to add/uncheck amenities

Property Images *

Upload Images (Max 10)

Choose Files No file chosen

Note: Only high-quality images. One image will be used as cover photo.

Property Video

Upload Video (Max 100MB)

Choose File No file chosen

Record directly from your phone camera or upload an existing video (MP4, MOV, WebM), Max 100MB.

Additional Details & Description

VirtualTour URL (YouTube, Vimeo link...)

Provide a YouTube video link or any virtual tour URL to help visitors explore your property easily.

My Properties

PROPERTY ID	PROPERTY TYPE	AD TYPE	ADDRESS	CONTACT	AMOUNT	AVAILABILITY	ACTION
#e947e7	residential	rent	Pedddepalli Tadepalligudem	9392774033	₹10000	Unavailable	Edit Delete
#38564f	residential	rent	A111	9392774033	₹15000	Unavailable	Edit Delete

BOOKING ID	PROPERTY ID	TENANT NAME	TENANT PHONE	STATUS	ACTIONS
#d20281	#d2026d	farhan	8919439778	booked	Revoke
#d202de	#d2026d	farhan	1234557890	cancelled	Revoke
#c47d4e	#d2026d	srimanoj	9398049652	booked	Revoke
#e04903	#e947e7	MDFarhan	8919439778	booked	Revoke
#38566c	#38566f	CH VRS PRANEETH	9977894646	booked	Revoke

Total Booked Houses: 4

Total Tenants: 4

Total Revenue / Month: ₹25,000

S.No	Tenant Name	Phone	Property Type	Address	Rent (₹)	Bedrooms	Furnished	Status	Booked Date
1	farhan	8919439778	residential	N/A	₹0	0	N/A	Booked	9/2/2026
2	srimanoj	9398049652	residential	N/A	₹0	0	N/A	Booked	9/2/2026
3	MDFarhan	8919439778	residential	Pedatadepalli Tadepalligudem	₹10,000	1	unfurnished	Booked	9/2/2026
4	CH VRS PRANEETH	9977894646	residential	Attiki	₹15,000	4	fully furnished	Booked	9/2/2026

Showing 4 of 4 booked properties

Average Rating: 4.8

Total Reviews: 4 from tenants

Rating Distribution:

- 5 ★: 3
- 4 ★: 1
- 3 ★: 0
- 2 ★: 0
- 1 ★: 0

All	5 ★	4 ★	3 ★	2 ★	1 ★
4	3	1	0	0	0

MDfarhan

17 Feb 2026

★★★★★

"outstanding"

② N/A

CHVRS PRANEETH

9 Feb 2026

★★★★★

"nice house "

② Attiki

Srimanoj

9 Feb 2026

★★★★★

"outstanding"

② N/A

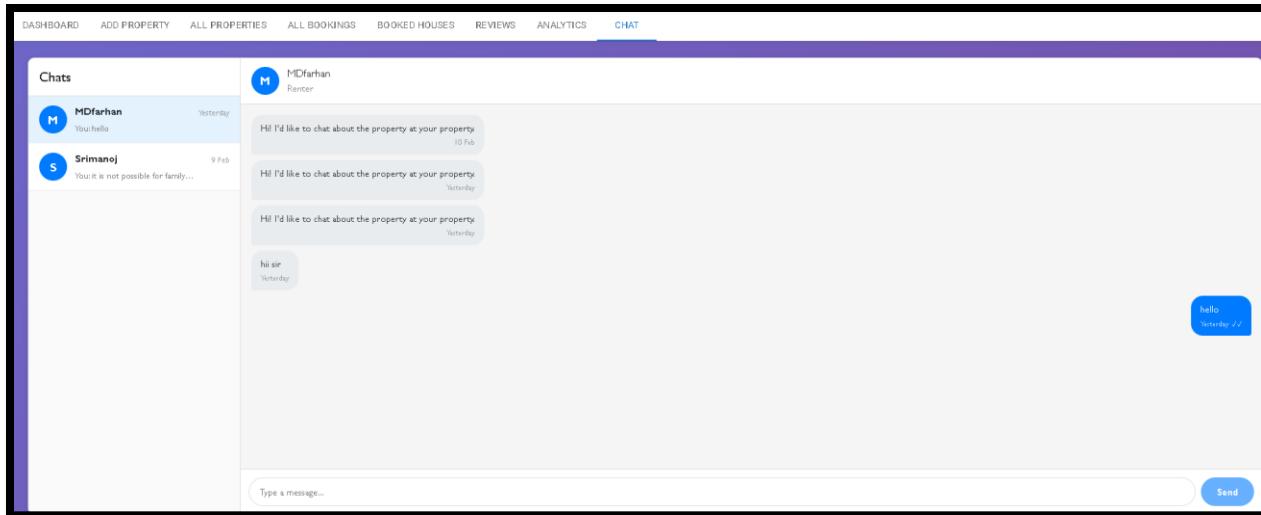
MDfarhan

7 Feb 2026

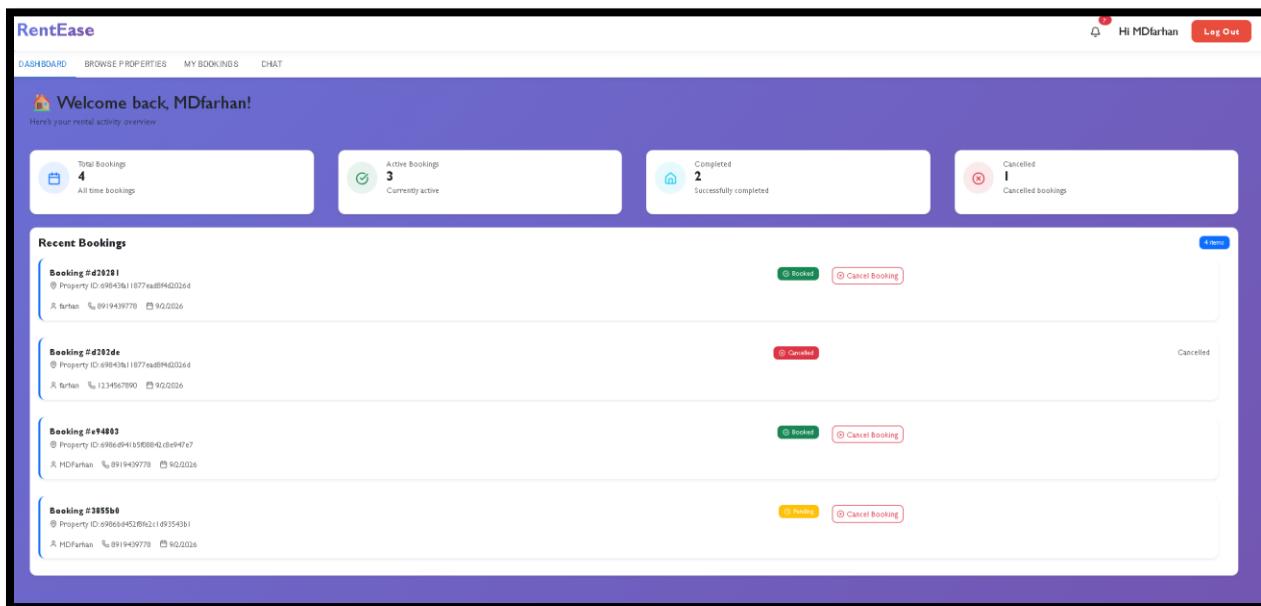
★★★★★

"Nice I Like it."

② Pedatadepalli Tadepalligudem



User Side:



RentEase

DASHBOARD BROWSE PROPERTIES MY BOOKINGS CHAT

Hi MDfarhan Log Out

Advanced Filters

Search by location, type... All Types Rent/Sale Min Price Max Price

Any SHK Any Furnishing Results: ClearAll

Image	Price	Type	Address	Status	Action
	₹30,000/month	RESIDENTIAL	Peddaipalai Tadepalligudem...	RENT	View Details & Book
	₹10,000/month	RESIDENTIAL	Peddaipalai Tadepalligudem...	RENT	Not Available
	₹20,000/month	RESIDENTIAL	Hyderabad...	RENT	View Details & Book
	₹40,000/month	RESIDENTIAL	Peddaipalai Tadepalligudem...	RENT	View Details & Book
	₹15,000/month	RESIDENTIAL	Peddaipalai Tadepalligudem...	RENT	View Details & Book
	₹24,999/month	RESIDENTIAL	Peddaipalai Tadepalligudem...	RENT	View Details & Book

RentEase

DASHBOARD BROWSE PROPERTIES MY BOOKINGS CHAT

Hi MDfarhan Log Out

Your Booking History

BOOKING ID	PROPERTY ID	TENANT NAME	PHONE	STATUS	DATE	ACTIONS
#d20281	#d2026d	farhan	8919439778	Booked	9/2/2026	Edit Cancel Review Chat
#d202de	#d2026d	farhan	1234567890	Canceled	9/2/2026	Cancelled
#e94803	#e947e7	MDFarhan	8919439778	Booked	9/2/2026	Edit Cancel Review Chat
#3855b0	#3543b1	MDFarhan	8919439778	Pending	9/2/2026	Cancel

RentEase

DASHBOARD BROWSE PROPERTIES MY BOOKINGS CHAT

Hi MDfarhan Log Out

Chats

Kiran Mahesh Renter

Kiran Mahesh Yesterday hello

hello Yesterday

Type a message... Send

Hi I'd like to chat about the property at your property 10:44 22/09/2026

Hi I'd like to chat about the property at your property Yesterday 22/09/2026

Hi I'd like to chat about the property at your property Yesterday 22/09/2026

hi sir Yesterday 22/09/2026

12. Known Issues

The following limitations and known issues have been identified during development and testing:

- Payment gateway integration is currently simulated and not connected to a live provider
- Real-time chat uses polling rather than WebSocket, which may introduce slight latency
- Mobile responsiveness may require further tuning on very small screen sizes
- Image uploads are stored locally; cloud storage (e.g., AWS S3) integration is pending

13. Future Enhancements

The following features and improvements are planned for upcoming development phases:

Advanced Search & Filtering	Map-based search, price range sliders, and amenity filters
Payment Gateway Integration	Live payment processing via Razorpay, Stripe, or PayPal
Email / SMS Notifications	Automated transactional alerts using services like Twilio or SendGrid
Mobile App	Native Android/iOS app using React Native
Improved UI/UX	Multiple themes, dark mode, and enhanced accessibility features
Automated Testing	Unit and integration test suites using Jest and Supertest
Cloud Deployment	CI/CD pipeline with deployment to AWS, Vercel, or Heroku

Conclusion

HouseHunt successfully demonstrates a full-stack rental management platform built on the MERN stack. The application covers the complete lifecycle of a rental transaction — from property discovery through to booking and communication — with a clean, role-based architecture that scales well for future enhancement. The project reflects practical application of modern web development practices including RESTful API design, JWT authentication, and modular frontend architecture.