Full Stack Development with MERN: Project Documentation

1. Introduction

Project Title: HouseHunt: Finding Your Perfect Rental Home

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Team Members:

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2. Project Overview

Purpose:
HouseHunt is a web-based rental management platform developed using the MERN stack (MongoDB, Express.js, React.js, Node.js). It aims to streamline the process of finding, listing, and booking rental properties for tenants, owners, and admins.

Key Features:

- Secure login/signup for Renter, Owner, and Admin roles
- Property listing with photos, amenities, and pricing
- Search filters for location, budget, property type, and amenities
- Owner property management (add, edit, remove listings)
- Inquiry and booking system with admin and owner approvals
- Admin controls for user verification and platform governance

3. Architecture

Frontend:

- Built using React.js
- Styled with Tailwind CSS and Bootstrap
- Utilizes Axios for API communication

Backend:

- Node.js + Express.js based RESTful API
- JWT authentication
- Modular routing and middleware-based access control

Database:

- MongoDB with Mongoose ODM
- Collections: Users, Properties, Bookings, Admin Approvals

4. Setup Instructions

Prerequisites:

- Node.js (>=14.x)
- MongoDB Community Edition

Installation:

1. Clone the repo
2. Run "npm install" in both "/client" and "/server"
3. Set environment variables (`.env ' file) for MongoDB URI and JWT secret

5. Folder Structure

- **Client (React Frontend):**

```
/client
 /src
  /components
  /pages
  /assets
  /services
  App.js
```

- **Server (Node Backend):**

```
/server
 /controllers
 /models
 /routes
 server.js
```

6. Running the Application

Frontend:

- ✓ cd client
- ✓ npm start

Backend:

- ✓ cd server
- ✓ npm start

7. API Documentation

Sample Endpoints:

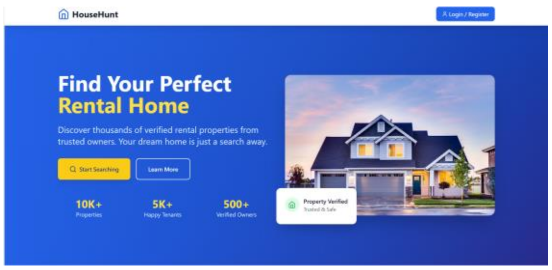
- POST `/api/auth/register` - User registration
- POST `/api/auth/login` - User login
- GET `/api/properties` - Fetch all properties
- POST `/api/properties` - Add new property (Owner only)
- PUT `/api/bookings/:id` - Booking update

8. Authentication

- JWT-based token system
- Role-based access (Renter, Owner, Admin)
- Tokens stored in localStorage

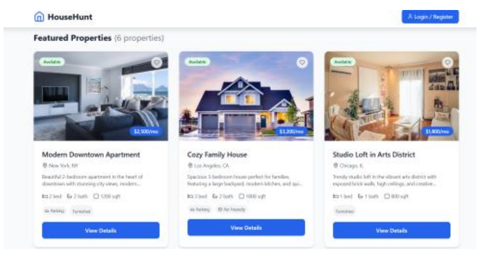
9. User Interface

Screenshots:



Find Your Perfect Rental Home

Discover thousands of verified rental properties from trusted owners. Your dream home is just a search away.

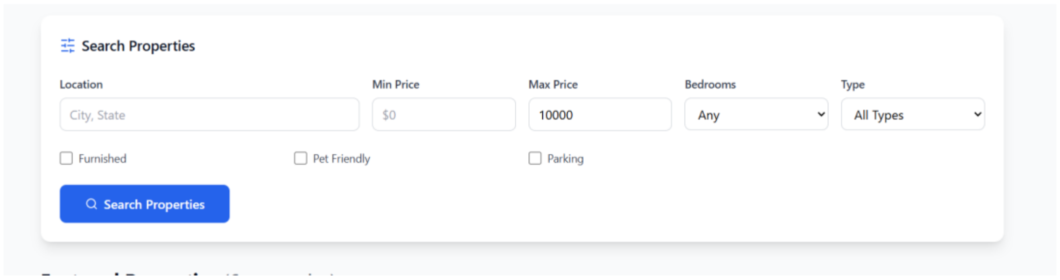


Featured Properties (6 properties)

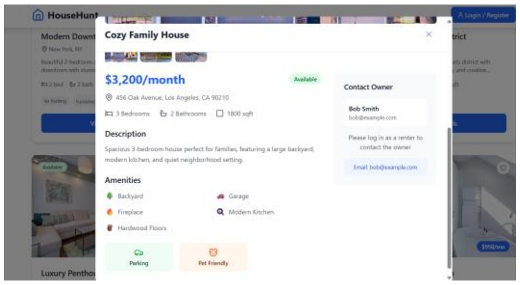
Modern Downtown Apartment
New York, NY
Beautiful 2-bedroom apartment in the heart of downtown with stunning city views, modern...

Cozy Family House
Los Angeles, CA
Spacious 3-bedroom house perfect for families. Featuring a large backyard, modern kitchen, and spa...

Studio Loft in Arts District
Chicago, IL
Trendy studio loft in the vibrant arts district with exposed brick walls, high ceilings, and creative...



Location: City, State
Min Price: $0
Max Price: 10000
Bedrooms: Any
Type: All Types
Furnished
Pet Friendly
Parking



Cozy Family House

$3,200/month

456 Oak Avenue, Los Angeles, CA 90210

3 Bedrooms 2 Bathrooms 1800 sqft

Description

Spacious 3-bedroom house perfect for families, featuring a large backyard, modern kitchen, and quiet neighborhood setting.

Amenities

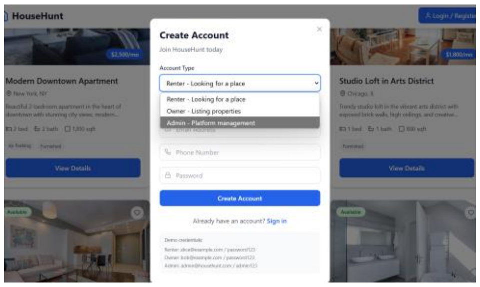
Backyard, Garage, Fireplace, Modern Kitchen, Hardwood Floors

Contact Owner

Bob Smith
bob@example.com

Please log in as a renter to contact the owner

Email bob@example.com



Create Account

Join HouseHunt today

Account Type: Renter - Looking for a place

- Renter - Looking for a place
- Owner - Listing properties
- Admin - Platform management

Phone Number

Password

Already have an account? Sign in

Demo credentials:
Renter: alice@example.com / password123
Owner: bob@example.com / password123
Admin: admin@househunt.com / admin123

10. Testing

Manual testing with demo credentials:

- Renter: https://lustrous-rugelach-aa4d9b.netlify.app/
- Owner: https://lustrous-rugelach-aa4d9b.netlify.app/
- Admin: https://lustrous-rugelach-aa4d9b.netlify.app/

11. Screenshots or Demo

Live: https://lustrous-rugelach-aa4d9b.netlify.app/

Screenshots:
- Homepage, Filters, Listings, Booking Modals, Contact Forms, etc.

12. Known Issues

- No integrated payment gateway
- Booking conflicts not handled via calendar
- Needs optimization for mobile responsiveness

13. Future Enhancements

- Payment integration (Stripe/PayPal)
- Calendar-based booking
- Chat system between renter and owner
- Progressive Web App (PWA) version