HouseHunt: Finding Your Perfect Rental Home

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1. Project Title

HouseHunt: Finding Your Perfect Rental Home

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2. Introduction

In the digital era, the demand for online solutions to real-world problems is rapidly increasing. One such challenge is the inefficient and outdated process of finding rental homes. **HouseHunt** aims to modernize this experience by creating a smart, intuitive, and responsive rental platform that bridges the gap between tenants and landlords.

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3. Problem Statement

Current rental platforms are often cluttered, lack advanced filtering options, and provide unverified listings. Tenants waste time scrolling through irrelevant properties, and landlords struggle to find reliable tenants. There is a clear need for a streamlined, intelligent platform for renting homes.

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4. Project Scope

In-Scope:

- User registration and login for both tenants and landlords
- Listings with detailed property information and photos
- Search functionality with customizable filters
- Map-based browsing experience
- Direct messaging between users
- Favorite properties feature

Out of Scope (Future Work):

- Rental payment integration
- AI-based property recommendation
- Legal document uploads/signatures

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5. Objectives

- Develop a responsive web platform to search and list rental homes
- Improve user experience through smart filtering and visualization
- Ensure secure user management and data handling
- Offer direct communication tools between tenants and landlords

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6. Features

- 🔍 **Smart Search:** Users can filter by location, price, size, number of rooms, amenities, and more
- 🗺️ **Map Integration:** Google Maps API for neighborhood browsing
- 🖼️ **Gallery & Details:** High-quality images and full property descriptions
- 💬 **Messaging System:** Secure and private communication
- 🛡️ **User Authentication:** Firebase login for verified users
- ☆ **Favorites List:** Users can bookmark listings for later
- 📱 **Responsive Design:** Works seamlessly across devices

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7. Technology Stack

- **Frontend:** React.js, Tailwind CSS, HTML5
- **Backend:** Node.js, Express.js
- **Database:** MongoDB (NoSQL)
- **Authentication:** Firebase Authentication
- **Maps:** Google Maps API
- **Deployment:** Vercel (Frontend), Render/Heroku (Backend), MongoDB Atlas (DB)

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8. User Roles

- **Tenant:**
    - Search for homes
    - Save favorites

    - Message landlords
- **Landlord:**
    - Post and manage listings
    - View and respond to inquiries
    - Edit or remove listings
- **Admin (optional future role):**
    - Monitor platform usage
    - Moderate listings and user accounts

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9. System Architecture

1. **Client Side (React App):** Sends HTTP requests to backend APIs
2. **Server Side (Node.js + Express):** Handles logic, CRUD operations
3. **Database (MongoDB):** Stores users, listings, favorites, and messages
4. **Firebase:** Handles secure login/logout
5. **Google Maps API:** Provides interactive maps for property locations

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10. Challenges Faced

- Integrating Google Maps API with custom markers
- Ensuring real-time updates for messaging
- Handling image uploads securely
- Designing an intuitive mobile-first user experience
- Cross-browser responsiveness and accessibility

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11. Future Enhancements

- Integration of payment gateway for rent transactions
- AI-based personalized recommendations
- Mobile app (React Native or Flutter)
- Landlord rating and review system
- Lease generation and digital signing

- In-app notifications and reminders

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12. Conclusion

HouseHunt was built to improve the property rental experience for both renters and landlords. The platform prioritizes usability, speed, and security. By implementing advanced features and focusing on a clean user interface, HouseHunt lays the foundation for a scalable rental marketplace.

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13. References

- Google Maps API Documentation
- Firebase Authentication
- MongoDB Atlas
- React.js Official Site