Full Stack Development with MERN

HouseHunt: Finding Your Perfect Rental Home

1. Introduction

HouseHunt is a MERN Stack rental property application that allows users to browse, list, and book homes for rent online.

1.1 Purpose:

To streamline the rental process by connecting property owners with renters through a modern, user-friendly web application.

2. Ideation Phase

2.1 Problem Statement:

Finding rental properties is often time-consuming and unorganized. There is no centralized, user-focused platform for easy home renting.

2.2 Empathy Map Canvas:

- Renters: Struggle to find suitable, verified rental properties

- Owners: Lack of simple tools to list and manage their properties

- Admins: Need to manage listings and users effectively

2.3 Brainstorming:

- Property listing & search

- Owner and renter roles

- Admin management panel

- Secure login and booking process **3. Requirement Analysis** 3.1 Customer Journey Map:

Signup/Login → Browse Listings → View Details → Book Home → Track Booking Status

3.2 Solution Requirements:

- Multi-role authentication (Admin, Owner, Renter)

- Property management and approvals

- Booking system with status updates

3.3 Technology Stack:

- Frontend: React.js, Tailwind CSS

- Backend: Node.js, Express.js

- Database: MongoDB

- Authentication: JWT (planned), bcrypt

- API Testing: Postman

4. Project Design

4.1 Problem-Solution Fit:

This solution meets the need for a centralized and reliable rental platform.

4.2 Proposed Solution:

A role-based web application for Renters, Owners, and Admins, providing rental property listing and booking capabilities.

4.3 Solution Architecture:

Frontend (React) → Backend API (Express) → MongoDB (Database)

5. Project Planning & Scheduling

Week	Task
1	Requirements & Planning
2	UI Design
3	Frontend Development

4	Backend Development
5	Integration & Testing
6	Final Submission

6. Functional and Performance Testing
- Performance Tools: Postman, Browser DevTools

- API Response Time: Optimized under 200ms

- MongoDB Queries: Indexed for performance

7. Results
- User Registration & Login (Role Based)

- Property Listing and View - Booking Form & Approval

- Admin Dashboard for Property and User Management

8. Advantages & Disadvantages
Advantages:

- Easy rental browsing and booking

- Owner-specific dashboards - Admin controls for approval

Disadvantages:

- No integrated payment system yet

- SMS/Email notification system pending

9. Conclusion
HouseHunt is a user-friendly, scalable MERN stack application that connects property owners and renters efficiently, saving time and effort for both.

10. Future Scope
- JWT-based full authentication

- Payment gateway integration

- Deployment on cloud platforms

- Mobile App version (React Native)

- Notification system (email/SMS)