**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

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| Date | 16 July 2025 |
| Team ID | LTVIP2025TMID59690 |
| Project Name | HouseHunt – Rental Property Recommender |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

**1. User Management**

* **Registration/Login:** Users can sign up and log in as Renter, Owner, or Admin.
* **Authentication & Authorization:** JWT-based authentication to access role-specific features.
* **Profile Management:** Users can update their personal details.

**2. Property Listings**

* **Add Property:** Owners can list new rental properties with details like rent, location, images, and amenities.
* **Browse/Search:** Renters can filter/search properties based on location, price range, type, etc.
* **View Details:** Users can view detailed property pages including owner contact.

**3. Booking & Inquiry**

* **Book Property:** Renters can send booking requests.
* **Approve/Reject Bookings:** Owners can manage booking requests.
* **Contact Owner:** Built-in inquiry system for direct communication.

**4. Lease Management**

* **Agreement Upload:** Owners can upload lease agreements.
* **Download/View Agreement:** Renters can access the agreement after booking confirmation.

**5. Admin Panel**

* **User & Property Moderation:** Admin can manage user accounts and property listings.
* **Reports & Analytics:** View system metrics, booking stats, user activity, etc.

**6. Notifications**

* **Email/Popup Notifications:** For booking status updates, approvals, new listings.

**7. PDF Generation**

* Generate lease agreements or booking summaries as downloadable PDFs.

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

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| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | Simple, intuitive UI for all user roles. |
| NFR-2 | **Security** | JWT auth, bcrypt password hashing, secure file uploads |
| NFR-3 | **Reliability** | Responsive UI to support desktop, tablet, and mobile users. |
| NFR-4 | **Performance** | App should handle 100+ concurrent users efficiently. |
| NFR-5 | **Availability** | Built on scalable MERN stack architecture (modular backend + frontend components). |
| NFR-6 | **Scalability** | Modular, well-commented codebase with version control (Git). |

**🧾 Technical Requirements:**

* **Frontend**: React.js, TailwindCSS/Bootstrap
* **Backend**: Node.js, Express.js
* **Database**: MongoDB (with Mongoose ORM)
* **Authentication**: JWT (JSON Web Token)
* **File Handling**: Multer for file uploads
* **Testing**: Postman for API testing, optional Jest/Mocha for unit tests
* **Deployment**: Vercel (Frontend) + Render/Heroku (Backend)
* **Version Control**: Git & GitHub