

Requirement Analysis

Technology Stack (Architecture & Stack)

Date	26 June 2025
Team ID	LTVIP2025TMID20391
Project Name	HouseHunt: Finding Your Perfect Rental Home
Maximum Marks	4 Marks

Technical Architecture:

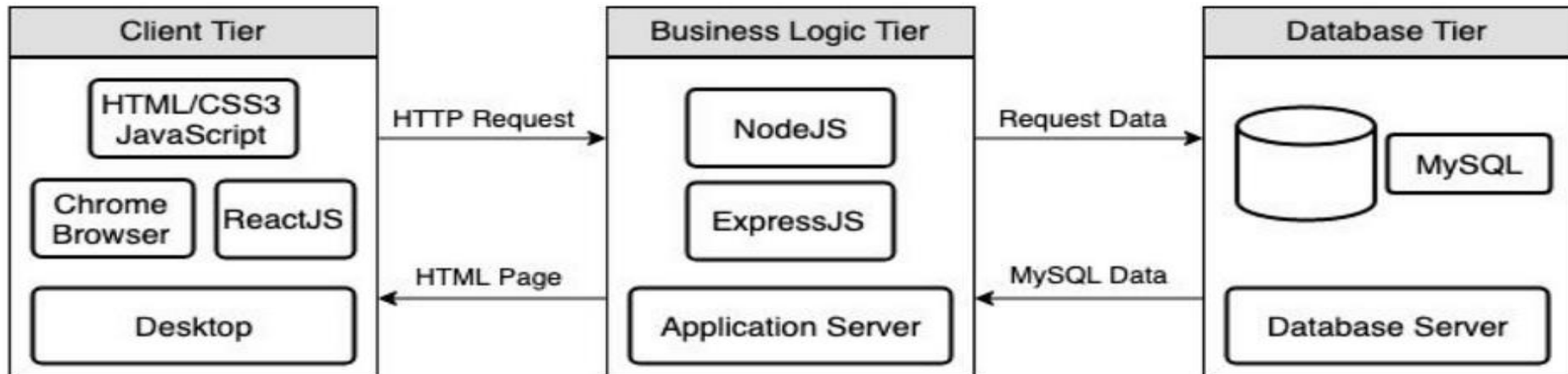


Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web interface for users (Renters, Owners, Admin)	HTML, CSS, JavaScript, React.js, Bootstrap, Material UI
2.	Application Logic-1	Backend logic for registration, booking, messaging	Node.js, Express.js
3.	Application Logic-2	Image upload, status management	Multer, Custom Middleware
4.	Application Logic-3	Email/OTP notifications	Nodemailer, Twilio (for OTP)
5.	Database	Stores user profiles, listings, messages, bookings	MongoDB (NoSQL)
6.	Cloud Database	Cloud-hosted version of MongoDB	Mongoddb atlas
7.	File Storage	Storage for property images	Cloudinary, Amazon S3, or Local Filesystem
8.	External API-1	Google Maps integration for location-based search	Google Maps API
9.	External API-2	Email/phone verification	Twilio API, SendGrid API
10.	Machine Learning Model	(Future Scope) Detect fake listings, auto-tag properties	Custom ML Model (Python, TensorFlow or FastAPI backend)
11.	Infrastructure (Server / Cloud)	Hosting of frontend/backend, deployment & scaling	Render, Vercel, or AWS EC2, Docker, Kubernetes (if scaled).

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Core app built with open-source technologies	React.js, Node.js, Express.js, MongoDB, Bootstrap
2.	Security Implementations	Authentication, password hashing, input validation, secure APIs.	JWT, bcrypt.js, HTTPS, Helmet.js, CORS
3.	Scalable Architecture	App is modular and follows a 3-tier architecture	MERN Stack + REST APIs + Microservices (future-ready)
4.	Availability	Cloud deployment with multi-region hosting and failover support	Load Balancers (e.g., AWS ELB), Vercel + MongoDB Atlas
5.	Performance	Optimized queries, pagination, lazy loading, CDN for static files	MongoDB Indexing, Cloudinary CDN