Project Design Phase-II

Technology Stack (Architecture & Stack)

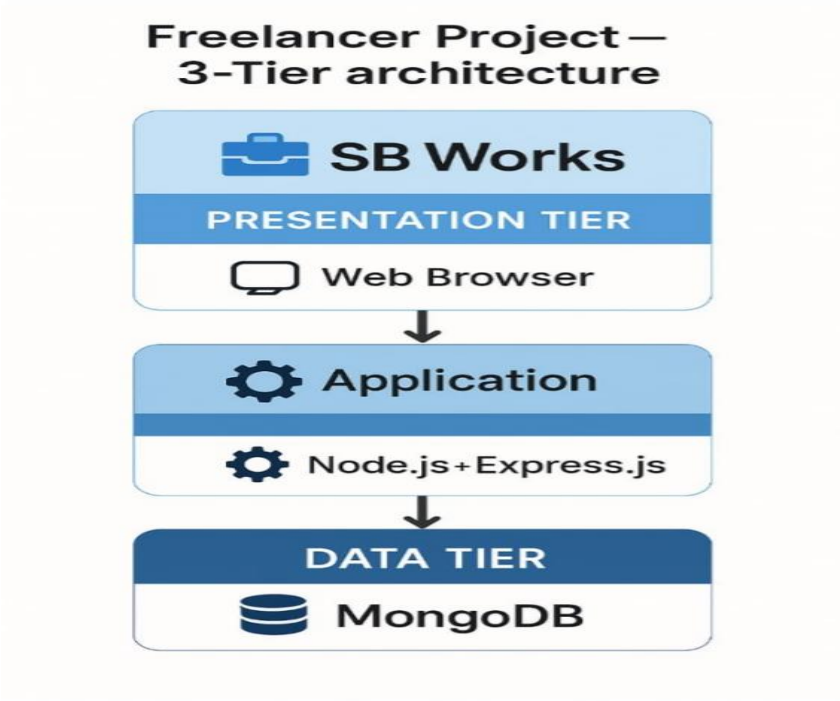
Date: 20 June 2025

Team ID: LTVIP2025TMID55293

Project Name: HOUSE RENT APP USING MERN:

Maximum Marks: 4 Marks

Technical Architecture



HouseHunt is built using a 3-tier architecture:
1. Presentation Tier (User Interface)
2. Application Tier (Backend Logic)
3. Data Tier (Database and Storage)

Architecture Diagram:

[React Frontend]
↓ (HTTP)
[Node.js + Express Backend]

↓ (Mongoose ODM)
[MongoDB Atlas Cloud DB + File Storage (Multer/Cloudinary)]

Table-1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	Web UI for renters, owners, and admin	HTML, CSS, JavaScript, React.js
2	Application Logic-1	Manages routing, authentication, services	Node.js, Express.js
3	Application Logic-2	Frontend-backend communication, API handling	Axios, Express.js Controllers
4	Application Logic-3	Filtering & search logic for listings	Express.js, MongoDB Queries
5	Database	Stores users, properties, bookings, etc.	MongoDB
6	Cloud Database	Cloud-hosted database	MongoDB Atlas
7	File Storage	Handles images for properties	Multer, Cloudinary / Local FS
8	External API-1	Cloud image storage & access	Cloudinary API
9	External API-2	Not used in this version	—
10	Machine Learning Model	Not used in this version	—
11	Infrastructure	Deployment setup (cloud/local)	Node Server, MongoDB Atlas

Table-2: Application Characteristics

S.No	Characteristics	Description	Technology
1	Open-Source	Stack used from open-source	React.js, Node.js, Express.js,

	Frameworks	ecosystem	MongoDB
2	Security Implementations	Role-based access, password encryption, token auth	JWT, Bcrypt.js, Helmet.js, CORS
3	Scalable Architecture	Modular 3-tier design for horizontal scaling	MERN Stack
4	Availability	Cloud-hosted services with support for high uptime	MongoDB Atlas, Node.js Server
5	Performance	Optimized APIs, efficient DB access, fast rendering	MongoDB Indexes, React Virtual DOM, REST API