

## Project Design Phase-II

### Technology Stack (Architecture & Stack)

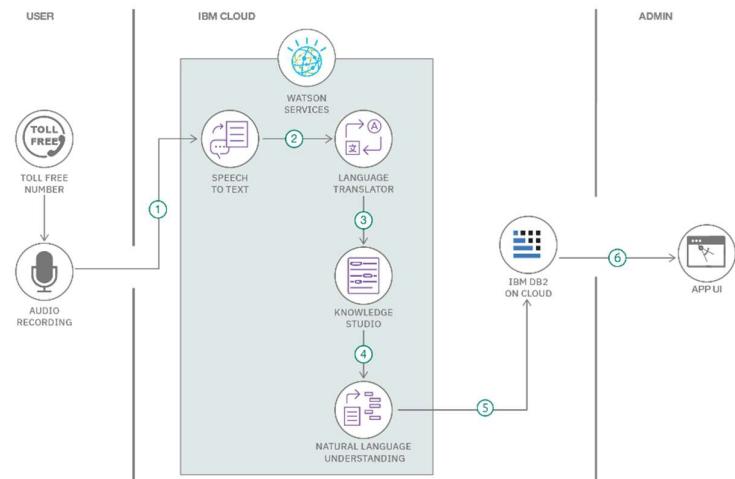
Date	20 June 2025
Team ID	LTVIP2025TMID45817
Project Name	HouseHunt
Maximum Marks	4 Marks

#### Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

#### Example: Order processing during pandemics for offline mode

Reference: <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>



#### Guidelines:

- Include all the processes (As an application logic / Technology Block)
- Provide infrastructural demarcation (Local / Cloud)
- Indicate external interfaces (third party API's etc.)
- Indicate Data Storage components / services
- Indicate interface to machine learning models (if applicable)

**Table-1: Components & Technologies**

S.No	Component	Description	Technology
1	User Interface	Web UI where users interact as renters, owners, or admins	React JS, HTML, CSS, JavaScript, MUI
2	Application Logic-1	Handles routing, validation, and middleware logic	Node.js, Express.js
3	Application Logic-2	Property upload and image handling logic	Multer (Node Middleware)
4	Application Logic-3	Authentication and booking management logic	JWT, Bcrypt, Express Middleware
5	Database	Stores users, properties, and bookings	MongoDB, Mongoose
6	Cloud Database	Hosted database connection	MongoDB Atlas
7	File Storage	Stores uploaded property images	Local Filesystem (/uploads folder)
8	External API-1	Not used currently (placeholder)	—
9	External API-2	Not used currently (placeholder)	—
10	Machine Learning Model	Not used (future enhancement possibility)	—
11	Infrastructure	Application hosted on cloud/local environments	Vercel (Frontend), Render (Backend)

**Table-2: Application Characteristics**

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Uses community-supported frameworks and libraries	React, Node.js, Express.js, Mongoose

S.No	Characteristics	Description	Technology
2	Security Implementations	JWT-based authentication, password hashing	JWT, Bcrypt, CORS, dotenv, Helmet (optional)
3	Scalable Architecture	Supports 3-tier architecture with possibility of microservices in future	MERN Stack
4	Availability	Frontend hosted on Vercel, Backend on Render, always-on cloud platforms	Vercel, Render
5	Performance	Efficient route handling, lightweight APIs, frontend optimization with CDN	React Build + CDN, MongoDB indexing, Express

#### References:

<https://c4model.com/>

<https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/>

<https://www.ibm.com/cloud/architecture>

<https://aws.amazon.com/architecture>

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d>