

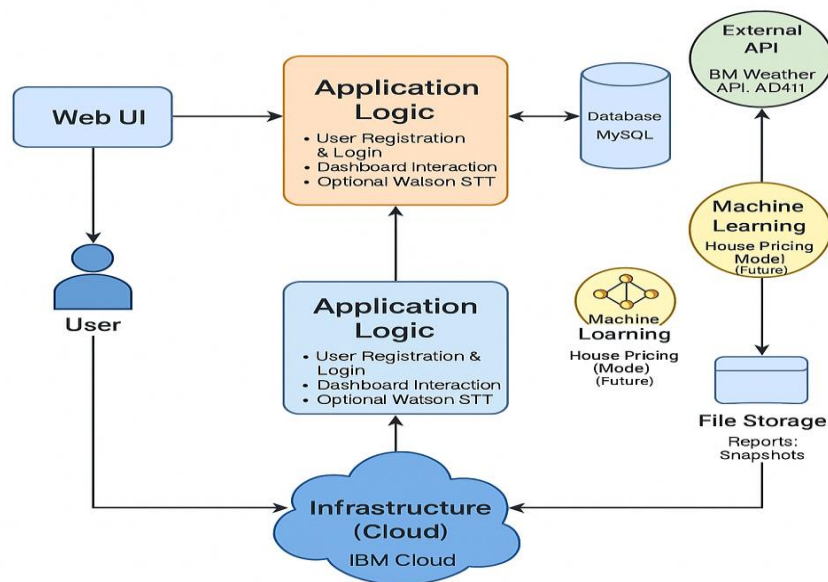
Project Design Phase-II Technology Stack (Architecture & Stack)

Date	27 June 2025
Team ID	LTVIP2025TMID49022
Project Name	Visualizing Housing Market Trends: An Analysis of Sale Prices and Features using Tableau
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



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 for users to explore housing dashboards	HTML, CSS, JavaScript, ReactJS
2.	Application Logic-1	Handles registration, login, dashboard interactions	Python (Flask/Django) or Java (Spring Boot)
3.	Application Logic-2	Converts voice input to text for search filters (optional)	IBM Watson STT (Speech-to-Text)
4.	Application Logic-3	Enables chatbot-based support or assistance in dashboard usage	IBM Watson Assistant
5.	Database	Stores user data, login credentials, feedback	MySQL
6.	Cloud Database	Stores cloud-based visual analytics data	IBM Cloudant / IBM DB2
7.	File Storage	Stores exported reports or chart snapshots	IBM Block Storage / Local Filesystem
8.	External API-1	Provides real-time housing market indicators like weather conditions	IBM Weather API
9.	External API-2	Authenticates users using national ID (optional)	Aadhaar API
10.	Machine Learning Model	Predicts house pricing trends based on historical data (future scope)	Regression Models / Scikit-learn / AutoAI
11.	Infrastructure (Server / Cloud)	Deploy Tableau dashboards and backend services	IBM Cloud Foundry, Kubernetes, Local Server

Table-2: Application Characteristics:

.No	Characteristics	Description	Technology
1. 1	Open-Source Frameworks	ReactJS for UI, Flask/Django for backend, Scikit-learn for ML	ReactJS, Flask, Django, Scikit-learn
2. 2	Security Implementations	Encrypted user data, secure login/authentication, OAuth, input validation	SHA-256, SSL, OAuth 2.0, IAM, OWASP
3. 3	Scalable Architecture	Microservices or 3-tier for UI, logic, database separation	Kubernetes, REST APIs
4. 4	Availability	Deployed using load-balanced cloud services with distributed infrastructure	IBM Cloud Load Balancer, Redundancy
5. 5	Performance	Caching dashboards, optimized SQL queries, responsive design	Redis, CDN, Tableau optimization, NGINX