

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

Date	31 January 3035
Team ID	LTPVIP2025MID50177
Project Name	Visualizing Housing Market Trends:An Analysis Of Sales 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

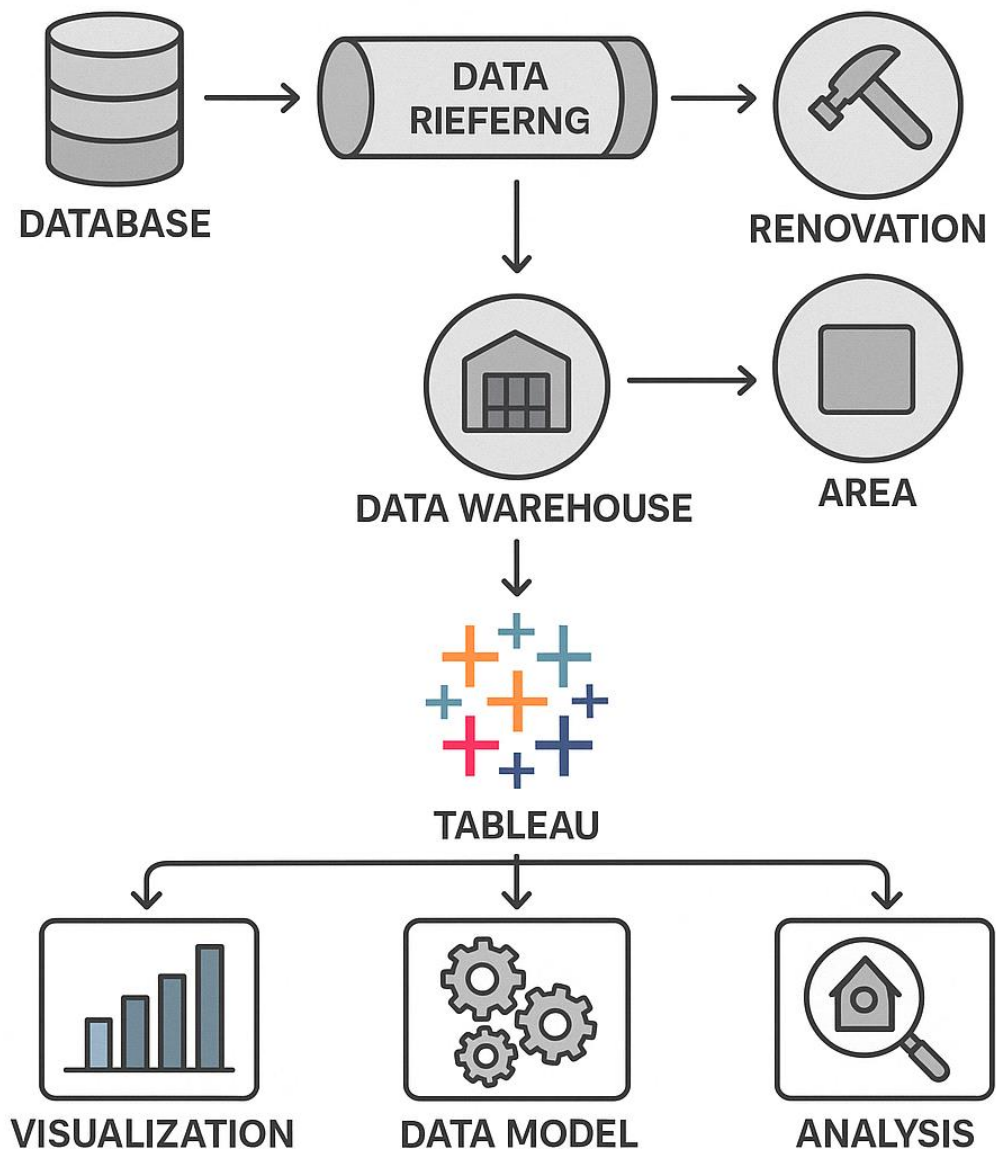


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
•	User Interface	How users interact with the dashboard or web app	How users interact with the dashboard or web app
•	Application Logic-1	Logic for data transformation	Python (e.g., using pandas, numpy)
•	Application Logic-2	Data pipeline and preprocessing logic	ETL tools like Apache NiFi / Talend / IBM DataStage
•	Application Logic-3	Business rules implementation (e.g., filters, KPIs)	Tableau Calculated Fields / Parameters
•	Database	Raw data storage from multiple sources	MySQL / PostgreSQL / MongoDB
•	Cloud Database	Cloud-based storage for processed datasets	IBM Cloudant / IBM DB2
•	File Storage	Historical and large dataset storage	IBM Block Storage / AWS S3 / Local Filesystem
•	External API-1	Real-time external weather data	IBM Weather API
•	External API-2	Government registry verification or housing IDs	Aadhar API / RERA API
•	Machine Learning Model	Estimate house price or predict sales trends	Regression Model, Time Series Forecasting (Prophet)
•	Infrastructure (Server / Cloud)	Deployment platform for application and Tableau Server	Local, IBM Cloud Foundry, Kubernetes.

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
•		Frameworks used in development and analysis	Python, Scikit-learn, ReactJS, Flask
•	Security Implementations	Security controls for	SHA-256, HTTPS, OAuth2, IAM, JWT, Firewall Rules

		database and API	
•	Scalable Architecture	Modular architecture to support future features	Microservices, 3-Tier Architecture, Docker
•	Availability	Ensuring 24/7 availability of data services and dashboards	Load Balancers, Multi-Region Deployment, Redundancy
•	Performance	Handles multiple users and large data efficiently	Caching, Indexing, CDN, Tableau Extracts, Redis

