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

Date	01 July 2025
Team ID	LTVIP2025TMID60544
Project Name	Visualizing Housing Market Trends: An Analysis of Sale Prices and Features using Tableau
Maximum Marks	4 Marks

Technical Architecture:

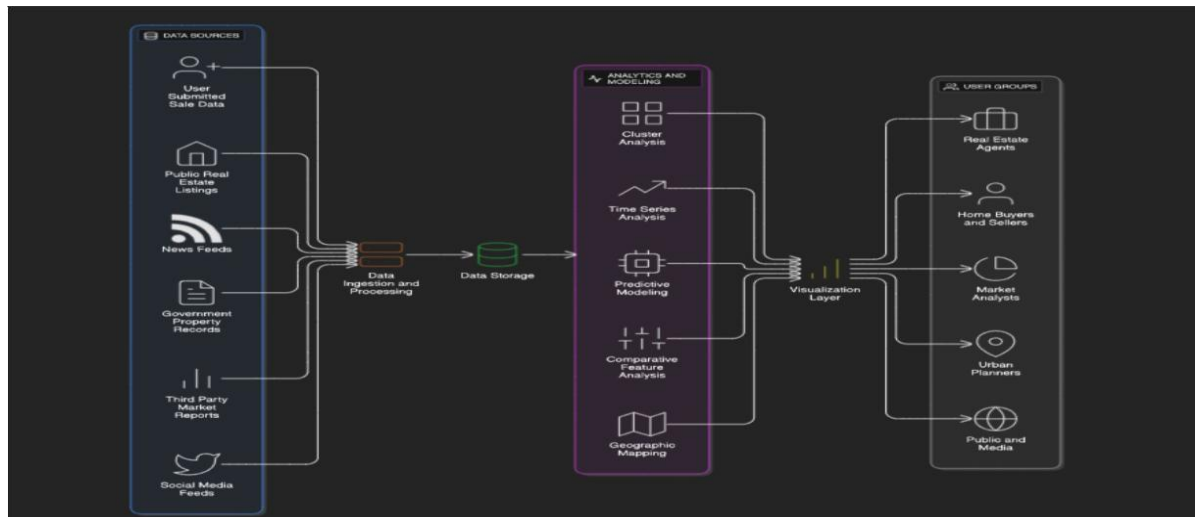The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Table-1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	Web access to visual dashboards	Web UI using Tableau Public
2	Application Logic-1	Data pre-cleaning and transformation	Python (Pandas, NumPy)
3	Application Logic-2	Dashboard logic, filters, calculated fields	Tableau Desktop
4	Application Logic-3	Interactive story design	Tableau Story Builder
5	Database	Structured data in tabular format	CSV file (Transformed Housing Data)

S.No	Component	Description	Technology
6	Cloud Database	Optional sync with Google Sheets or Tableau Online	Google Sheets / Tableau Cloud
7	File Storage	Storing housing datasets	Google Drive / Local File System
8	External API-1	(Not used in current scope)	N/A
9	External API-2	(Not used in current scope)	N/A
10	Machine Learning Model	Future enhancement for price prediction	Python Regression Model (optional)
11	Infrastructure	Deployment & Hosting	Local System, Tableau Public (Cloud)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Python for preprocessing, Tableau Public for visualization	Python (Pandas, NumPy), Tableau Public
2	Security Implementations	Dashboard access restricted via Tableau share settings and Google logins	Tableau account authentication
3	Scalable Architecture	Scalable to new visualizations and datasets	Tableau Dashboards, CSV Expansion
4	Availability	Available 24/7 via Tableau Public	Hosted on Tableau Public / Online
5	Performance	Lightweight visuals, quick filter response, cache-enabled Tableau dashboards	Tableau's optimization engine

📎 **References**

- https://c4model.com/
- https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/
- https://aws.amazon.com/architecture
- https://public.tableau.com
- https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d