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

Date	3rd July 2025
Team ID	LTVIP2025TMID48488
Project Name	Housing Visualization Analysis Trend
Maximum Marks	4 Marks

Technical Architecture:

The deliverable includes the architectural diagram and the information as per the table below. This architecture supports data visualization and analysis of housing trends through a dashboard system.

S.No	Component	Description	Technology
1	User Interface	Web-based dashboard for interacting with data	HTML, CSS, JavaScript, Tableau Public
2	Application Logic-1	Backend processing and data transformation	Python (Pandas, NumPy)
3	Application Logic-2	Trend analysis and visualization generation	Tableau Calculations, Python Matplotlib
4	Application Logic-3	Data filtering and user-specific view logic	JavaScript, Tableau Filters
5	Database	Housing dataset storage (structured tabular data)	CSV / Excel, SQLite
6	Cloud Database	Cloud-based data storage (optional)	Google Sheets / Firebase Realtime DB
7	File Storage	Raw data and exported reports	Google Drive / Local Filesystem

8	External API-1	Pull real-time housing price or news data	OMDB API (for visualization demo)
9	External API-2	Map integration for location data	Google Maps API
10	Machine Learning Model	Optional: Predictive price trend model	Scikit-learn (Linear Regression)
11	Infrastructure	Hosting and visualization access	Tableau Public / Local Browser

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Data processing and modeling tools	Python, Pandas, Matplotlib
2.	Security Implementations	Access control, API restrictions, data privacy	OAuth (for APIs), Google Auth (if used)
3.	Scalable Architecture	Dashboard can be extended to more users and data sources	3-tier architecture
4.	Availability	Public Tableau dashboard ensures 24/7 access	Tableau Public
5.	Performance	Lightweight charts, filtered data access, local caching	Tableau Filters, Optimized CSV loading