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

Date	27 June 2025
Team ID	LTVIP2025TMID48073
Project Name	visualizing housing market trends
Maximum Marks	4 Marks

Technical Architecture:

[Raw Housing Dataset]

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[Preprocessing & Aggregation (Python, Pandas)]

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[Visualization Layer (Tableau)]

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[User Interface (Tableau Dashboards / Web Embeds)]

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[Insights and Exported Reports for Buyers/Investors]

Table-1 : Components & Technologies:

S.No	Component	Description	Technology	

1	**User Interface**	**Visualization dashboards**	**Tableau Public, HTML Embed**
2	**Application Logic-1**	**Data processing and metric generation**	**Python (Pandas, NumPy)**
3	**Application Logic-2**	**KPI calculations, trend modeling**	**Tableau Calculated Fields**
4	**Application Logic-3**	**Recommendation logic based on house features**	**Custom filters in Tableau**
5	**Database**	**Source housing dataset**	**CSV file / SQLite**
6	**Cloud Database**	**Optional for larger housing data**	**Google Sheets / AWS S3**
7	**File Storage**	**Local and online Tableau extracts**	**Local File System, Tableau Online**
8	**External API-1**	**Location metadata (optional)**	**Google Maps API (optional)**
9	**External API-2**	**Weather impact analysis (optional extension)**	**OpenWeather API**
10	**Machine Learning Model**	**Forecasting renovation-based value uplift (future scope)**	**Scikit-learn (optional)**
11	**Infrastructure**	**Tableau Public / Local PC for deployment**	**Tableau Desktop, Web Browser**

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Technology of Opensource framework
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Technology used

S.No	Characteristics	Description	Technology
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	Technology used
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Technology used