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

Date	25 June 2025
Team ID	LTVIP2025TMID48466
Project Name	Visualizing Housing Market Trends: An Analysis of Sale Prices and Features using Tableau
Maximum Marks	4 Marks

Technical Architecture:

The project uses a data analytic pipeline where the transformed housing datasets is imported, cleaned, and visualized using Tableau. The architecture supports dynamic filtering, real-time interactivity, and feature-based exploration of housing trends (like price vs renovation, age, grade, etc.). The deployment is on local Tableau Public/Desktop, with the option to migrate to a cloud-based Tableau Server.

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-based dashboard accessed through Tableau interface	Tableau Desktop / Tableau Public
2	**Application Logic-1**	Data cleaning and transformation	Python (Pandas), Excel
3	**Application Logic-2**	Feature segmentation, derived fields generation	Python / Tableau Calculated Fields
4	**Database**	Source data used for analysis (structured tabular format)	CSV, Excel
5	**File Storage**	Local file system for housing dataset	.csv stored locally
6	**External API-1**	Optional API for real estate trends or map integration	Zillow API / Google Maps API (future scope)
7	**Infrastructure**	Deployment on local systems	Tableau Desktop (Local), optional: Cloud

TABLE-2: Application Characteristics

S.No	Characteristics	Description	Technology
1	**Open-Source Frameworks**	Data preprocessing and visualization scripting	Python (pandas, matplotlib), CSV format
2	**Security Implementations**	Local system access control, file-level protection	OS-level protection, optional encryption
3	**Scalable Architecture**	Modular structure, easily extendable to new features or cloud deployment	Tableau Server (future), Micro-dashboard design
4	**Availability**	High availability on local Tableau with possible cloud hosting (future)	Tableau Server, Shared Access Links
5	**Performance**	Optimized dashboards (filters, extracts) for smooth navigation and insights	Tableau Extracts, Aggregated Calculations