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

Date	11 Feb 2026
Team ID	LTVIP2026TMIDS38740
Project Name	Visualizing Housing Market Trends: An Analysis of Sale Prices and Features using Tableau
Maximum Marks	4 Marks

🏗️ Technical Architecture:

This project leverages a data visualization and analytics pipeline to process housing market data and generate interactive Tableau dashboards. The system is designed to ensure usability, accessibility, and clarity for business stakeholders such as real estate analysts and executives.

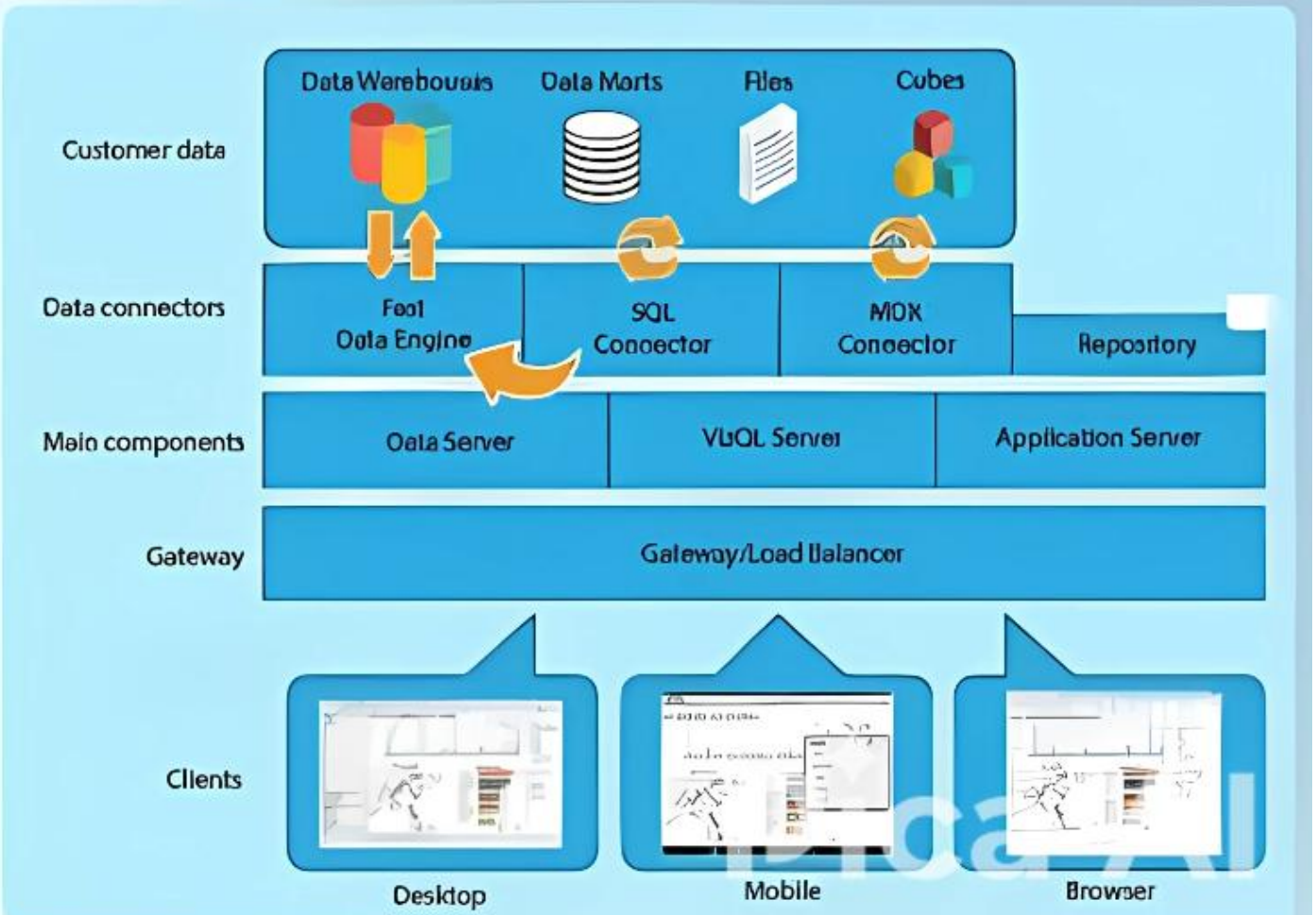
📌 Architecture Overview:

1. Data Ingestion (CSV Dataset)
2. Data Cleaning & Feature Engineering (Python, Pandas)
3. Data Export for Tableau (Preprocessed CSV)
4. Dashboard Development (Tableau Desktop)
5. Dashboard Hosting (Tableau Public)
6. Report Export (Screenshots / PDF)
7. Link Sharing (Tableau Public URLs)

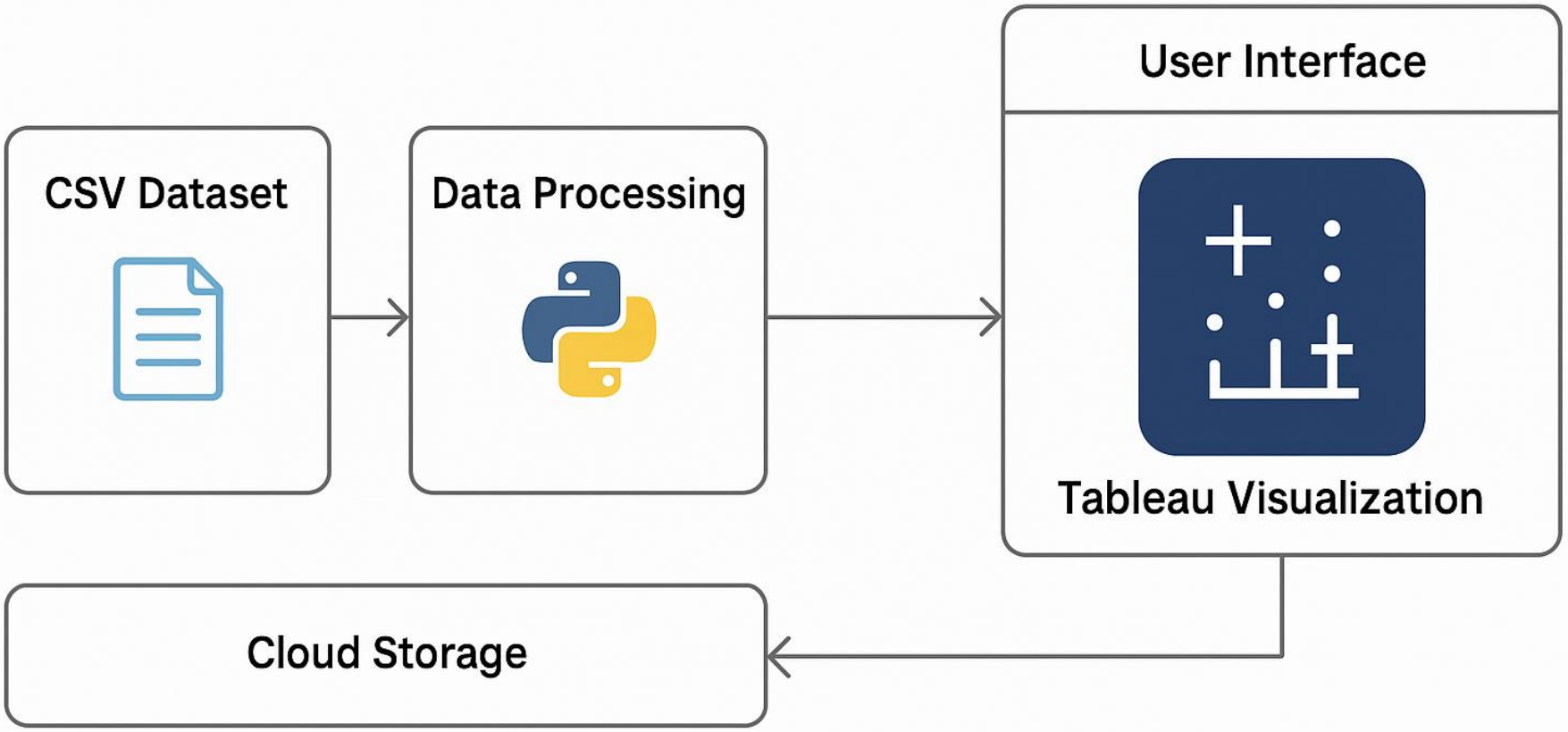
Data Flair

Tableau

Architecture



Technical Architecture



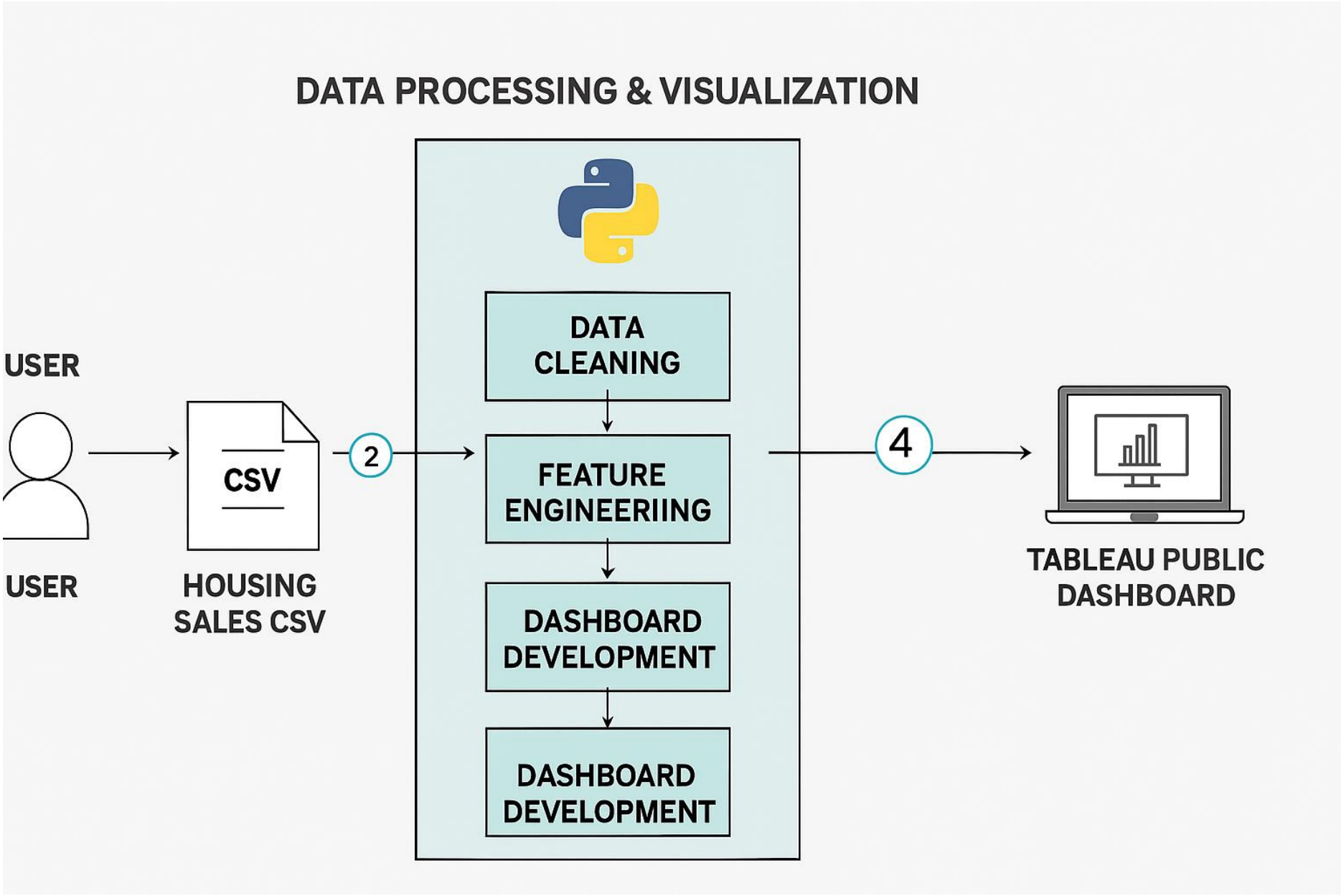

DATA PROCESSING & VISUALIZATION
USER
USER
CSV
HOUSING SALES CSV
2
DATA CLEANING
FEATURE ENGINEERIING
DASHBOARD DEVELOPMENT
DASHBOARD DEVELOPMENT
4
TABLEAU PUBLIC DASHBOARD

Table-1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	User views and interacts with dashboards	Tableau Public Dashboard (Web UI)
2	Application Logic-1	Data preprocessing and transformation logic	Python, Pandas
3	Application Logic-2	Feature engineering (e.g. categorize house age, renovation impact)	Python
4	Application Logic-3	Data export and reshaping for Tableau consumption	Python
5	Database	Temporary storage of cleaned housing data	Local CSV file (flat-file based)
6	Cloud Database	Not applicable (handled locally)	—
7	File Storage	Storage of datasets, images, report screenshots	Local file system or Google Drive
8	External API-1	N/A	—
9	External API-2	N/A	—
10	Machine Learning Model	Not required (descriptive/visual analysis only)	—
11	Infrastructure	Tableau Public cloud hosting of dashboards	Tableau Public, Local Python environment

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology / Tools Used
1	Open-Source Frameworks	Python for data processing, Pandas for transformation	Python, Pandas
2	Security Implementations	Data anonymized, secure Tableau sharing with controlled links	Tableau Public Link Permissions
3	Scalable Architecture	Can support larger datasets with additional Tableau worksheets	Tableau's scalable visualization engine
4	Availability	Dashboards accessible 24/7 online	Tableau Public hosting
5	Performance	Tableau dashboards optimized with filters and hierarchies for speed	Tableau Data Engine, Local Preprocessing

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d

https://public.tableau.com/