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

Date	2 July 2025	
Team ID	LTVIP2025TMID51597	
Project Name	Measuring the Pulse of Prosperity: An Index of	
	Economic Freedom Analysis	
Maximum Marks	4 Marks	

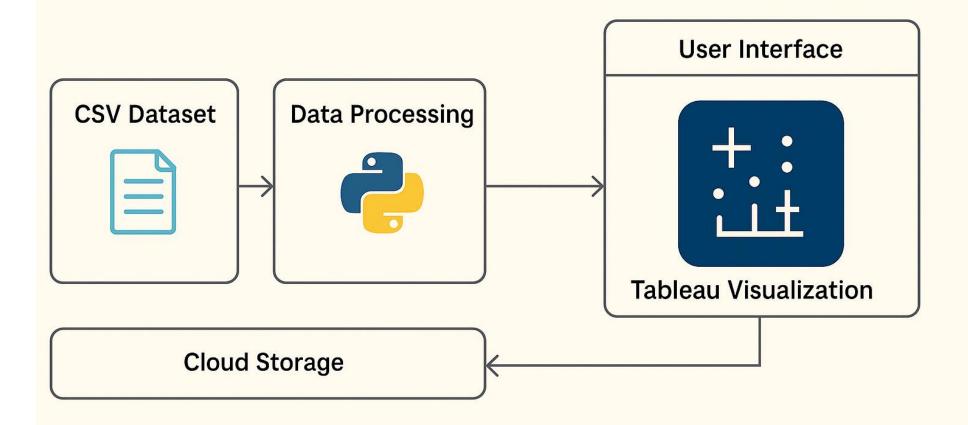
Technical Architecture:

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)

TECHNICAL ARCHITECTURE



DATA PROCESSING & VISUALIZATION

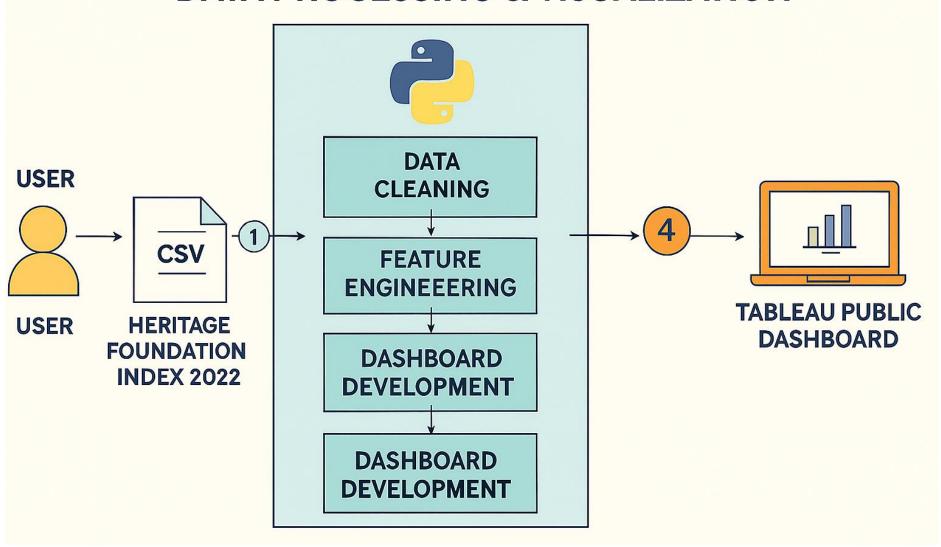


Table-1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	End users interact with visual dashboards to explore country-wise data	Tableau Public Dashboard (Web UI)
2	Application Logic-1	Data cleaning and transformation (e.g., handling nulls, formatting	Python, Pandas
		columns)	
3	Application Logic-2	Indicator grouping and pillar categorization logic	Python, Excel
4	Application Logic-3	Prepare datasets for Tableau import (reshaping, column renaming, etc.)	Python, Tableau Prep
5	Database	Temporary storage of processed data	Local CSV file (flat-file based)
6	Cloud Database	Not applicable (project handled offline/locally)	_
7	File Storage	Stores original and cleaned datasets, screenshots of dashboards	Local file system, Google Drive
8	External API-1	Not used in this project	_
9	External API-2	Not used in this project	_
10	Machine Learning	Not applicable (project is descriptive and visual, not predictive)	_
	Model		
11	Infrastructure	Tableau Public for hosting dashboards, local Python for data processing	Tableau Public, Python
			Environment

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology / Tools Used
1	Open-Source	Python used for data cleaning and transformation; supports flexibility	Python, Pandas
	Frameworks		
2	Security	Dataset is anonymized; dashboards are shared using secure, controlled	Tableau Public Link Permissions
	Implementations	public links	
3	Scalable Architecture	Supports expansion with future economic indicators or years via modular	Tableau's visualization engine
		dashboards	
4	Availability	Dashboards are hosted online and available 24/7 to users	Tableau Public hosting
5	Performance	Optimized dashboard visuals using filters, drilldowns, and minimal load	Tableau Data Engine, Local
		time	Preprocessing

References:

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