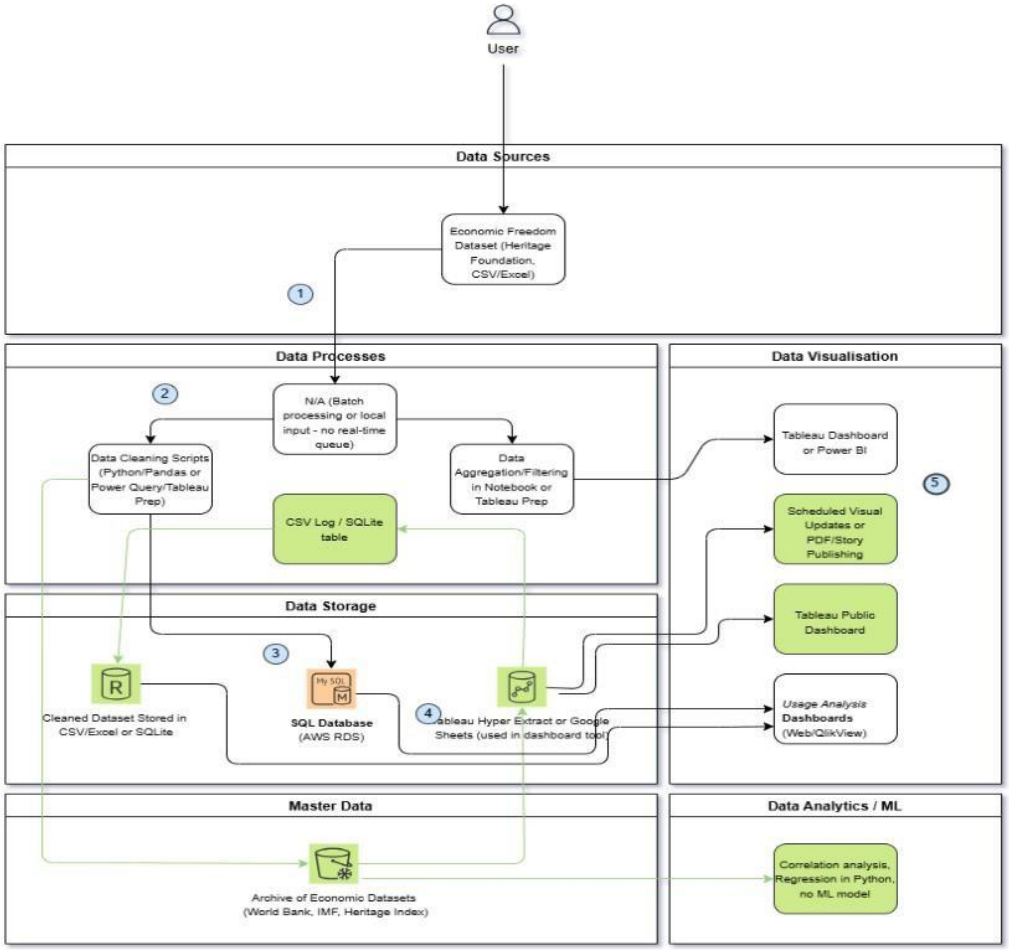
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	20 June 2025
Team ID	LTVIP2025TMID47620
Project Name	Measuring the Pulse of Prosperity: An Index of Economic Freedom Analysis
Maximum Marks	4 Marks

Technical Architecture:



Additional Notes

1. The system pulls data from globally recognized public repositories like the Heritage Foundation and the World Bank. These datasets are reliable and updated annually. Data is downloaded in CSV or Excel formats.
2. The datasets undergo cleaning (handling nulls, correcting formats), filtering, and transformation using Python or Tableau Prep. This step ensures the dataset is analytics-ready for visual tools and dashboards.
3. Cleaned datasets are stored locally or on the cloud (Google Drive/Sheets or Tableau Extracts). The system maintains raw archives separately for version tracking.
4. Dashboards are created in Tableau or Power BI, providing insights into Economic Freedom trends across countries. Additional storyboards help explain correlations with GDP and other development indices.
5. The final dashboards are published on Tableau Public or embedded in a portfolio website. Users can filter by region, year, and score to explore insights interactively.

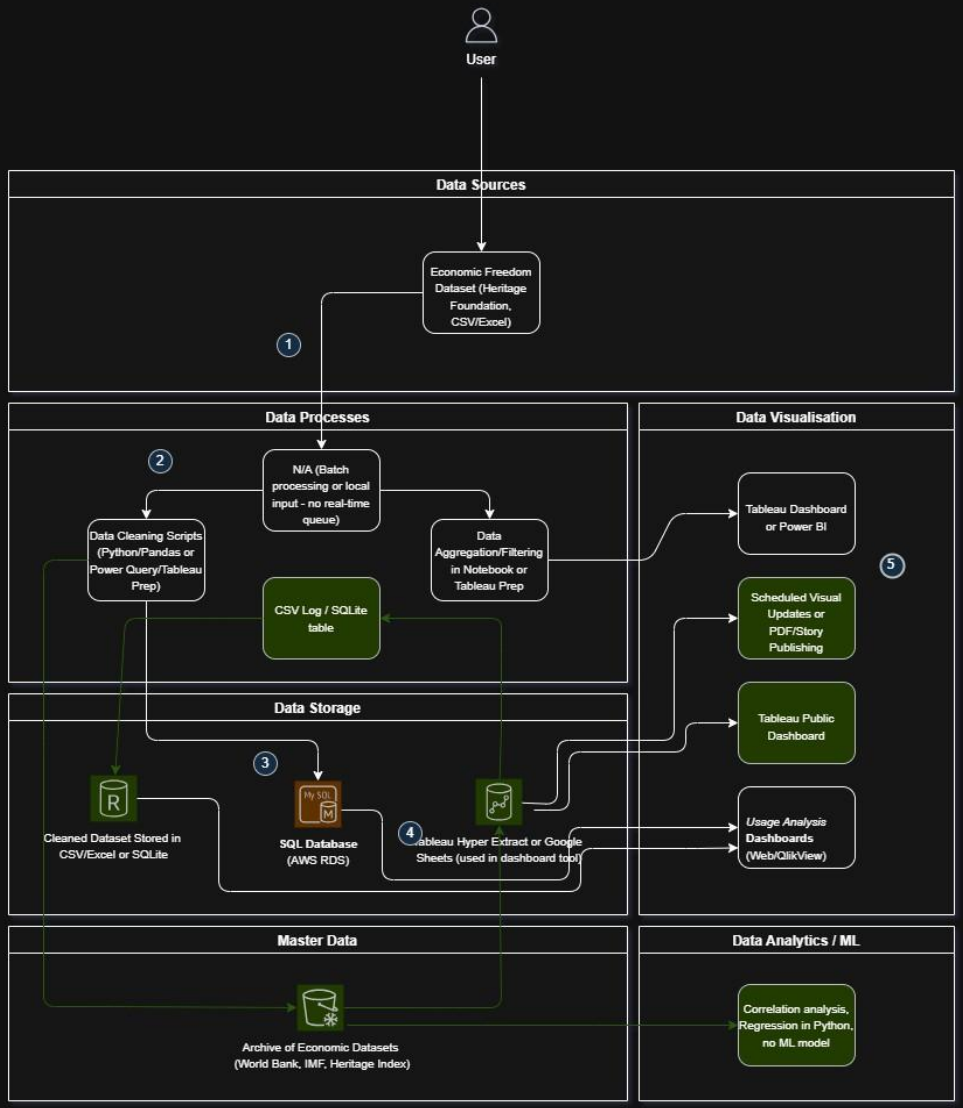


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Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	Dashboard Interface	How users view and interact with the final visuals (filters, charts)	Tableau Public, Web Browser
2.	Data Processing Logic-1	Scripts for cleaning data (null removal, column renaming, formatting)	Python (Pandas), Tableau Prep
3.	Data Processing Logic-2	Aggregation, filtering, country-year grouping, and region mapping	Jupyter Notebook, Excel
4.	Storytelling Layer	Creation of narrative using charts to explain trends and comparisons	Tableau Story, Power BI Storyline
5.	Data Repository (Local)	Where cleaned and processed datasets are stored locally	CSV, Excel, SQLite
6.	Data Repository (Cloud)	Where cloud-stored or shared files are stored for dashboards	Google Sheets, Tableau Hyper Extract
7.	File Storage	For raw and original datasets, backups, and multiple versions	Google Drive, Local Folders
8.	External Data Source-1	Source of economic indicators (freedom score, GDP)	Heritage Foundation, World Bank (CSV)
9.	External Data Source-2	Optional integration with development indices or HDI data	IMF, UNDP APIs or CSVs
10.	Statistical Analysis Unit	Conducts correlation or regression analysis on selected variables	Python (Pandas, Matplotlib, scikit-learn)
11.	Hosting Infrastructure	Where the final dashboard is hosted and shared publicly	Tableau Public, GitHub Pages (optional)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Uses free and open tools for development and visualization	Python, Pandas, Jupyter, Tableau Public.
2.	Security Implementations	Controlled access via Tableau Public's sharing settings or restricted links	Tableau’s privacy settings, Google Sheets.
3.	Scalable Architecture	Easily extendable to more datasets, indicators, or new years	Modular script structure, flexible charts
4.	Availability	Dashboards are always accessible online for viewing and analysis	Tableau Public (24/7 online access)
5.	Performance	Efficient preprocessing with Pandas and fastloading dashboards with extracts	.hyper extracts, optimized CSVs, filtering