Project Design Phase-II

Technology Stack (Architecture & Stack)

Date: 24 February 2026

Team ID: LTVIP2026TMIDS79888

Project Name: Measuring the Pulse of Prosperity: An Index of Economic Freedom Analysis

Maximum Marks: 4 Marks

Technical Architecture

The system is designed as a web-based interactive dashboard using Tableau to visualize and analyze the Economic Freedom Index data. Users can explore country-wise, regional, and indicator-wise data to derive meaningful insights.

Table-1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	Web-based dashboard interface	Tableau Public, HTML, CSS, JavaScript
2	Application Logic - 1	Data processing and visualization logic	Tableau Visualization Logic, Python (for backend tasks)
3	Application Logic - 2	Data preprocessing and cleaning	Python (Pandas, NumPy)
4	Application Logic - 3	Data sourcing and updates	Python Scripts / Tableau Data Extracts
5	Database	Storage of raw and processed data	Google Sheets, CSV Files, or Local Database (SQLite)
6	Cloud Database	Cloud storage for datasets (optional)	Google Drive / Tableau Cloud
7	File Storage	Storage for reports and exported files	Local Filesystem, Google Drive
8	External API - 1	Global Economic Data APIs	World Bank API, IMF Data API
9	External API - 2	Country Information APIs	REST Countries API
10	Machine Learning Model	Trend prediction or pattern detection	Regression Models in Python (Optional

		(future scope)	- future)
11	Infrastructure (Server/Cloud)	Hosting environment for Tableau dashboard or reports	Tableau Public, Optional Cloud Hosting (AWS, Azure)

Table-2: Application Characteristics

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Data processing and API interaction	Python (Pandas, Requests), JavaScript
2	Security Implementations	Restricted access to data upload and backend management	Password protection, Google Drive access controls
3	Scalable Architecture	Dashboard supports increasing data and user base	Tableau Public allows scalability for visualizations
4	Availability	Dashboard hosted on Tableau Public ensures 24/7 global availability	Tableau Public, Cloud storage redundancy
5	Performance	Optimized data extracts, caching where applicable	Tableau Extracts, Optimized visualizations