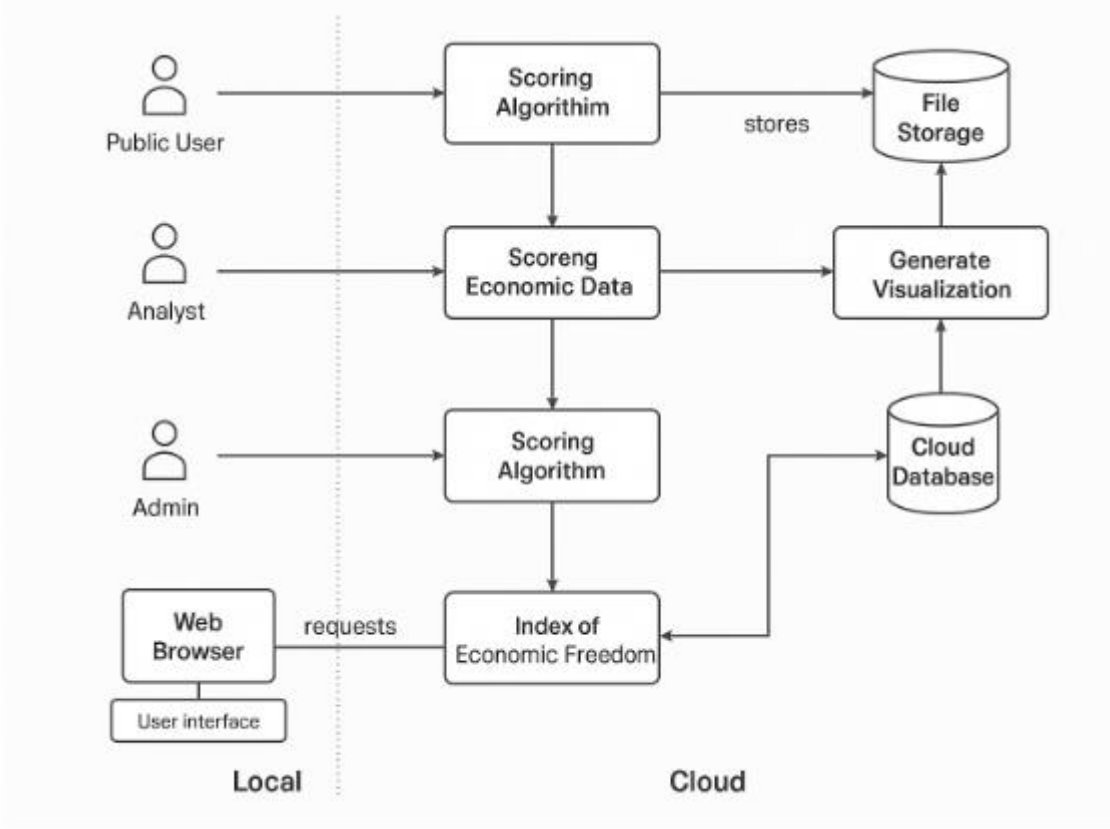
Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	30 June 2025
Team ID	LTVIP2025TMID49576
Project Name	"Measuring the Pulse of Prosperity: An Index of Economic Freedom Analysis"
Maximum Marks	4 Marks

Overview:

My application ingests economic datasets, processes them using a scoring algorithm, stores the data in a cloud database, and displays interactive visualizations to end-users. It supports three roles: Public User, Analyst, and Admin.



Technical Architecture:

S.No	Component	Description	Technology
1	User Interface	Web portal for public users, analysts, and admins	React.js, Tailwind CSS
2	Application Logic-1	Data upload, preprocessing, and validation logic	Python (Flask or Django)
3	Application Logic-2	Index computation and aggregation	Python (Pandas, NumPy)
4	Application Logic-3	Visualization and filtering logic	Chart.js, D3.js
5	Database	Stores user roles, raw and processed economic data	PostgreSQL
6	Cloud Database	Cloud-hosted database for scalability and security	AWS RDS / Google Cloud SQL
7	File Storage	Stores uploaded datasets and exportable reports	AWS S3 / Google Cloud Storage
8	External API-1	Country-level economic indicators (if fetched dynamically)	World Bank API
9	Machine Learning Model	(Optional) Forecast economic freedom trends	Scikit-learn / XGBoost
10	Infrastructure	Application hosting & deployment	AWS EC2 / Google App Engine

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Backend and frontend development frameworks	React.js, Flask, Django
2	Security Implementations	Data validation, login authentication, access control by role	OAuth 2.0, JWT, HTTPS, IAM (AWS)
3	Scalable Architecture	Modular microservices with database and UI tiers	3-Tier Architecture
4	Availability	Cloud-based deployment with potential load balancing	AWS Load Balancer /

References:

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