Project Design Phase-II
Solution Requirements (Functional & Non-functional

Date:	1.07.2025
Team Id:	LTVIP2025TMID52456
Project Name:	Measuring the pulse of prosperity: An Index of economic freedom analysis
Maximum Marks:	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Data Ingestion & Management	Upload Dataset (e.g., CSV, Excel, from external APIs) Data Validation and Cleaning Data Storage and Organization (e.g., database)
FR-4	Economic Freedom Index Calculation	Define and Configure Index Components Apply Weighting Schemes (configurable by user/admin) Calculate Composite Index Scores for countries/regions
FR-5	Data Analysis & Visualization	Generate Interactive Charts (e.g., Bar, Line, Scatter, Bubble) Create Geographic Visualizations (e.g., Choropleth Maps) Provide Trend Analysis over Time Enable Comparison between Countries/Regions Display Correlation Matrices between indicators
FR-6	Reporting & Export	Generate Customizable Reports (e.g., PDF, HTML) Export Raw and Processed Data (e.g., CSV, Excel) Export Visualizations (e.g., Image formats like PNG, JPEG)
FR-7	User Authentication & Authorization	User Login/Logout Role-based Access Control (e.g., Admin, Analyst, Viewer)
FR-8	Search & Filter Functionality	Search by Country Name, Year, Index Component Filter Data by various criteria (e.g., region, income level)

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The system should have an intuitive and userfriendly interface, allowing users to easily navigate, interact with data, and interpret results without extensive training.
NFR-2	**Security**	The system must protect sensitive user data (if any) and ensure the integrity and confidentiality of the economic data. This includes secure authentication, authorization, and protection against unauthorized access or data breaches.
NFR-3	**Reliability**	The system should consistently perform its functions accurately and without significant errors. Data calculations, visualizations, and report generation should be reliable and repeatable.
NFR-4	**Performance**	The system should respond quickly to user requests, especially during data processing, index calculation, and visualization generation, even with large datasets. Data loading and rendering times should be minimal.
NFR-5	**Availability**	The system should be accessible to authorized users whenever needed, with minimal downtime. This includes considerations for server uptime, data accessibility, and disaster recovery.
NFR-6	**Scalability**	The system should be able to handle an increasing amount of data (e.g., more countries, more years, new indicators), a growing number of concurrent users, and additional features without significant degradation in performance.
NFR-7	**Maintainability**	The system's codebase and architecture should be well-documented, modular, and easy to modify or extend to accommodate future enhancements or bug fixes.
NFR-8	**Data Accuracy**	The system must ensure the highest level of accuracy for all ingested data, calculations, and visualizations to reflect reliable economic insights.