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

Date	02 March 2025
Team ID	PNT2025TMID01141
Project Name	Global Malnutrition Trends: A Power BI Analysis (1983-2019)
Maximum Marks	4 Marks

Functional Requirements:

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The **dashboard interface must be intuitive**, allowing users to navigate insights without technical expertise. Provide **tooltips, legends, and hover-over descriptions** for complex metrics.

NFR-2	**Security**	Implement **Role-Based Access Control (RBAC)** to restrict access based on user roles. Ensure **end-to-end encryption** (SSL/TLS) for data transmission. Store sensitive data securely, using **encryption at rest** (AES-256).

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	**User Login & Authentication**	Option to use **OAuth authentication** (Google, Microsoft, etc.). Implement **multi-factor authentication (MFA)** for added security.
FR-4	User Roles & Permissions	Define roles (e.g., Admin, Analyst, Viewer)
FR-5	Data Collection & Integration	The system must **ingest data** from multiple sources (e.g., WHO, UNICEF, World Bank, FAO).
FR-6	Data Cleaning & Processing	The system must **remove duplicates and missing values**. Convert data into a **standardized format** (consistent units, categories).

Non-functional Requirements:

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

NFR-3	**Reliability**	The system must have **99.9% uptime**, ensuring minimal downtime. Implement **automated error detection** and notifications for failed data refreshes.
NFR-4	**Performance**	Dashboards should load **within 3 seconds** for typical queries. Data refresh operations should complete **within 510 minutes** for full dataset updates.

NFR-5	**Availability**	Ensure **24/7 availability** for global users through cloud-based hosting (Power BI Service). Implement **automatic failover mechanisms** in case of system crashes. The system should support **scheduled maintenance** without affecting availability.
NFR-6	**Scalability**	The solution must be **scalable** to support future data expansion (e.g., new years, additional indicators). Power BI service should support **concurrent users without lag** (at least 50-100 users at a time).