

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

Date	29 January 2026
Team ID	LTVIP2026TMIDS84978
Project Name	Advancing Nutrition Science through GeminiAI – NutriAssist AI
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	Nutritional Analysis	User can enter food name manually User can upload food image System generates calorie information System displays macronutrients (Protein, Carbs, Fats) System displays micronutrients (Vitamins & Minerals)
FR-2	Meal Plan Generation	User enters dietary restrictions User selects activity level User enters health conditions System generates personalized 1-day meal plan
FR-3	Virtual Nutrition Coaching	User can ask nutrition-related questions System provides structured AI response System provides actionable health tips
FR-4	Input Validation	System validates empty inputs System validates acceptable word limits System displays proper error messages
FR-5	AI Model Integration	System connects to Gemini 2.5 Flash API System processes prompt and generates output System displays response on Streamlit UI

**Non-functional Requirements:**

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

FR No.	Non-Functional Requirement	Description
NFR-1	<b>Usability</b>	The system must provide a simple, clean, and user-friendly Streamlit interface.
NFR-2	<b>Security</b>	API keys must be securely stored using environment variables (.env file).
NFR-3	<b>Reliability</b>	The system must handle invalid inputs and API errors gracefully without crashing.
NFR-4	<b>Performance</b>	The AI response time should be within a few seconds for smooth user experience.

NFR-5	<b>Availability</b>	The system should be accessible via web browser whenever the server is running.
NFR-6	<b>Scalability</b>	The system should support multiple users if deployed on cloud infrastructure.
NFR-7	<b>Maintainability</b>	Code should be modular and easy to update or extend with new features.