Project Charter – Personal Nutrition Assistant

# 1. Project Objectives

## Purpose

The Personal Nutrition Assistant is a web application designed exclusively for obese individuals (BMI ≥ 30) to achieve safe, medically supervised weight loss. It provides customized meal plans that respect allergies, food preferences, and medical conditions, while ensuring secure user registration and data protection.

## SMART Objectives

• Specific & Measurable: Within 8 weeks, develop an MVP web application where users register with email and password, log in, and—after BMI verification—receive three customized meal options per meal type (breakfast, lunch, dinner) that support safe weight loss.

• Achievable: By Week 6, integrate a secure cloud database (e.g., PostgreSQL or Firebase) to store and retrieve user accounts, profiles, allergies, and meal histories, and implement a “Forgot Password” recovery mechanism.

• Relevant & Time-Bound: Launch the MVP to at least 20 obese beta testers within 12 weeks, ensuring all meals follow medically accepted calorie deficits to support a weight loss of approximately 0.5–1 kg per week.

# 2. Stakeholders and Roles

## Stakeholders

• Primary End Users: Obese adults seeking safe, medically guided weight-loss meal plans.  
• Project Team: Developers, Designer, Project Manager, QA/Testers.  
• Medical & Nutrition Advisors: Dietitians or certified nutritionists to validate dietary safety and weight-loss rates.  
• External Partners: Verified nutrition database providers and potential healthcare collaborators (clinics, gyms).  
• Faculty Mentors: Provide academic and technical guidance.

## Team Roles

• Project Manager – Oversees timeline, resources, and stakeholder communication.  
• Technical Lead – Designs and implements the secure database, BMI logic, authentication system (sign-up/login/password reset), and API integrations.  
• UI/UX Designer – Builds intuitive flows for registration/login, BMI input, allergy selection, and meal-plan display.  
• Research & Documentation – Sources medically approved weight-loss guidelines and documents system requirements.  
• QA & Testing – Validates authentication security, BMI calculations, allergy filtering, and nutritional accuracy.

# 3. Scope

## In-Scope

• User Registration & Authentication:  
 - Email + password sign-up and login system.  
 - Secure password storage using hashing and encryption.  
 - “Forgot Password” feature with email-based password reset.  
 - Database storage and retrieval of user credentials and profiles.  
  
• BMI-based Eligibility:  
 - Users enter height and weight; system calculates BMI and only allows continued use if BMI ≥ 30.  
  
• Personalization & Meal Recommendation:  
 - Dropdowns for common allergens (e.g., nuts, shellfish, dairy, gluten); meals excluding selected allergens.  
 - Dropdowns for food categories (proteins, carbs, desserts, etc.) to capture preferences.  
 - Recommendations of three meal options each for breakfast, lunch, and dinner based on BMI, allergies, preferences, and health-safe calorie limits.  
  
• Secure Database:  
 - Stores all user data (credentials, allergies, preferences, meal history) with encrypted password handling and data recovery.

## Out-of-Scope (for MVP)

• Integration with wearable fitness devices.  
• Real-time dietitian chat or premium coaching features.  
• Grocery delivery or direct e-commerce integrations.  
• Predictive AI beyond the initial rule-based meal filtering.

# 4. Risks

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| Risk | Impact | Likelihood | Mitigation Strategy |
| Authentication Security | Breach of user accounts or passwords. | Medium | Use industry-standard encryption (e.g., bcrypt/Argon2), enforce strong password policies, and implement email verification. |
| Data Accuracy & Safety | Incorrect nutrient data may harm users. | Medium | Use medically validated nutrition APIs and review by licensed dietitians. |
| Privacy & Compliance | Exposure of sensitive health data. | Medium | Store all data in an encrypted, HIPAA-ready cloud database with role-based access control. |
| User Non-Compliance | Misreported height/weight affects BMI eligibility. | Medium | Provide clear guidance, disclaimers, and encourage honest input; add periodic prompts for weight updates. |
| Scope Creep | Risk of delays if extra features are added. | High | Freeze MVP feature set to authentication, BMI eligibility, allergy/preferences filtering, and three-meal recommendations. |

# 5. High-Level Plan

Phase 1 – Setup & Requirements (Weeks 1–2)  
• Finalize team roles, database schema, and authentication strategy.  
• Confirm medical guidelines for safe weight loss and allergen lists.  
  
Phase 2 – Core Development (Weeks 3–6)  
• Implement secure user registration (email/password), login, and password reset.  
• Build BMI calculation and eligibility gating.  
• Develop secure database tables for credentials, allergies, and preferences.  
• Integrate verified nutrition API and meal-filtering logic.  
  
Phase 3 – Testing & Refinement (Weeks 7–9)  
• Conduct unit and security testing for authentication and password recovery.  
• Validate BMI calculations, allergy filtering, and safe calorie limits.  
• Recruit obese beta testers for user testing and feedback.  
  
Phase 4 – Launch & Feedback (Weeks 10–12)  
• Deploy MVP to pilot users, collect feedback on security, data accuracy, and usability.  
• Prepare roadmap for enhancements such as mobile app versions or professional dietitian integration.