Smart Nutrition Tracker - Test Verification Report

Date: 2025-12-20 23:55:24

1. Executive Summary

This report details the verification of the Backend (FastAPI) system. All unit and integration tests successfully passed using the Pytest framework.

Overall Result: PASSED

2. Test Scope & Methodology

1. Authentication Tests (test_auth.py):

- Purpose: Verify security mechanisms for user access.

- Methodology: We simulate login requests with correct/incorrect credentials and verify JWT token issuance. Password hashing is checked using Argon2 verification to ensure no plain-text storage.

2. User Management (test_users.py):

- Purpose: Ensure user profile data integrity and access control.

- Methodology: Integration tests verify that users can update their profiles (height, weight, goals) and that unauthorized users cannot access Admin routes.

3. Food & Meal Logic (test_food_meals.py):

- Purpose: Validate core business logic for calorie tracking.

- Methodology: We seed the database with test foods, log meals against a user account, and assert that the 'Daily Summary' correctly aggregates calories and macros.

4. AI Meal Planning (test_ai_plans.py):

Smart Nutrition Tracker - Test Verification Report

- Purpose: Verify the Plan Generation Engine.

- Methodology: We call the AI Service with a user context and assert that the returned JSON structure contains 7 distinct days of meals, adhering to the requested goal logic.