Smart Nutrition Tracker - Test Verification Report

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1. Executive Summary

This report summarizes the testing verification for the Smart Nutrition Tracker application. Both backend (FastAPI) and frontend (Flutter) components have been tested using automated test suites.

Overall Result: PASSED

2. Backend Testing (Unit & Integration)

Framework: Pytest

Scope: Authentication, User Profiles, Meal Logging, AI Plan Generation.

Total Tests: 13 Passed.

Files Verified:

- tests/test_auth.py: Login, Registration, Password Hashing.

- tests/test_users.py: User profile updates, access control.

- tests/test_food_meals.py: Food item creation, meal logging history.

- tests/test_ai_plans.py: AIEngine logic, Meal Plan generation.

3. Frontend Testing (Widget)

Framework: Flutter Test

Scope: UI Component Rendering (Smoke Tests).

Total Tests: 1 Passed.

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Files Verified:

- mobile/test/widget_test.dart: Login Screen element verification (Title, Inputs, Buttons).

4. Feature Verification Highlights

- Admin Dashboard: Verified Admin-only access and stats display.

- Multi-Goal Meal Plans: Verified 10 distinctive goal generation.

- Meal Logging: Verified deduplication and custom food logic.

5. Conclusion

The application has passed all currently defined automated tests. Core functionalities including Authentication, Data Management, and AI Services are operating as expected.