Software Requirements Specification

For

Smart Workout Planner

Version 1.0 Approved

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Revision History

Date	Version	Description	Author
22-01-2025	1.0	Initial Draft	A. Jaiivant
03-02-2025	1.0	Final Draft	A. Jaiivant

1. Introduction

1.1 Purpose

The Smart Workout Planner is designed to simplify fitness management by offering personalized workout and nutrition recommendations tailored to a user's Body Mass Index (BMI) and health goals. This app will provide an interactive and goal-oriented approach to fitness by offering pre-planned workouts, meal tracking, and progress monitoring. It Reduces dependency on personal trainers by providing an AI-driven workout guide and encourages habit formation through gamification, using reward points for motivation. Users can opt for a premium ad-free experience, ensuring a distraction-free fitness journey.

1.2 Document Conventions

- Requirements labeled with **FR** represent **Functional Requirements**.
- Requirements labeled with **NFR** represent **Nonfunctional Requirements**.
- All dates follow the format **DD-MM-YYYY**.

1.3 Intended Audience and Reading Suggestions

This document is meant for:

- **Developers**: To understand feature implementation and technical constraints.
- **Testers**: To develop test cases and validate the system.
- **Project Stakeholders**: To ensure the app meets their expectations and goals.

1.4 Project Scope

The Smart Workout Planner is developed to provide users with structured workout routines and nutritional insights. The system is built to support multiple user fitness goals, ranging from weight loss to muscle building. It provides Real-time feedback and insights based on user data, ensuring an adaptive and personalized experience. A progress tracking system that allows users to view past workouts, meal logs, and reward achievements. The application will also integrate data analytics to suggest diet improvements and predict performance trends based on past user activity.

1.5 References

- Official guidelines on BMI categorization from WHO.
- Fitness and dietary research papers for data validation.

2. Overall Description

2.1 Product Perspective

The Smart Workout Planner eliminates the need for traditional pen-and-paper tracking, making fitness planning seamless and convenient. The application provides a visually engaging and interactive experience, ensuring users feel motivated to track their progress. It incorporates machine learning models to suggest workout adjustments based on user consistency and past performance. Using integration with smartwatches and fitness trackers to enhance accuracy in tracking workouts and calorie burn.

2.2 Product Features

- **BMI Calculator**: Provides health insights based on user inputs (weight, height, age).
- **Goal-Oriented Planning**: Offers workout routines and calorie/protein intake plans tailored to user preferences.
- **Meal Tracking**: Includes a search feature and provides insights on daily meal plans.
- **Rewards System**: Motivates users to stay consistent with redeemable points and vouchers.
- **Premium Features**: Offers an ad-free experience and advanced goal-tracking tools.
- **Reminders and Notifications**: Keeps users on track with timely workout and meal reminders.

2.3 User Classes and Characteristics

- **Fitness Enthusiasts**: Regular users seeking structured workout plans.
- **Beginners**: Users new to fitness and tracking tools.
- **Busy Professionals**: Users needing quick, simplified tracking options.
- **Admins:** Handle app maintenance and support.

2.4 Operating Environment

- **Mobile OS**: Android (version 8+) and iOS (version 12+).

- **Cloud-Based Storage**: User data stored on secure cloud servers for portability.

2.5 Design and Implementation Constraints

- Must comply with GDPR and data security regulations.
- Ads must not interfere with essential app functionality.
- Storage capacity should accommodate up to 5 years of user data.

2.6 User Documentation

- Built-in help section covering key app features.
- Interactive onboarding tutorials during app setup.

2.7 Assumptions and Dependencies

- **Assumption:** Users will enter accurate personal details (height, weight, activity level) for precise BMI calculations.
- **Dependency:** App functionality may be limited if third-party APIs (e.g., meal tracking databases or cloud storage) become unavailable.

3. System Features

3.1 User Authentication

- **Description**: Secure login with encrypted data storage, user registration, and password reset features.
- **Priority**: High

3.2 BMI Calculation and Goal Setting

- **Description**: Calculates BMI based on user inputs and suggests fitness plans aligned with goals.
- **Priority**: High

3.3 Meal Tracker and Insights

- **Description**: Tracks meals through a searchable database and provides feedback on nutritional content.
- **Priority**: Medium

3.4 Reward System

- **Description**: Offers points for completing workouts and tracking meals, redeemable for discounts or vouchers.
- **Priority**: Medium

3.5 Premium Subscription

- **Description:** Unlocks advanced features such as ad-free experience, AI-based progress insights, and priority customer support.
- **Priority:** Low

4. External Interface Requirements

4.1 User Interfaces

- Minimalist and intuitive dashboard with distinct icons for workouts, meals, and settings.

4.2 Hardware Interfaces

- Device compatibility: Smartphones with at least 2GB RAM and 16GB storage.

4.3 Software Interfaces

- Integration with APIs for meal tracking, payment gateways, and ad services.

4.4 Communications Interfaces

- RESTful APIs for secure data exchange between app and server.

5. Nonfunctional Requirements

- **Performance:** The app should handle up to 5,000 concurrent users.
- **Safety:** Ensure data privacy through AES encryption and periodic security audits.
- **Security:** Use SSL encryption for all data transfers between user devices and cloud servers.
- **Scalability:**
    - Support for AI-based personalized training plans in future updates.
    - Future compatibility with IoT-based health devices (e.g., fitness bands, smart scales).

6. Other Requirements

- **Support multilingual functionality** to cater to a global audience.
- **Offline access** for core features, allowing users to log workouts without an internet connection.
- **Integration with wearable devices** such as Apple Watch, Fitbit, and Samsung Health for **real-time tracking**.
- **Dark mode and high-contrast mode** for improved accessibility.