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# **Software Requirements Specification**

For

SW 301

OOAD

By

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## **1. Introduction**

### **1.1 Purpose of this Document**

This document serves as a blueprint for the development of the Fitness Tracking app, detailing its requirements, specifications, and constraints. It ensures a clear understanding of the project goals, functional and non-functional requirements, and the framework for developers and stakeholders.

### **1.2 Scope of this Document**

The Fitness Tracking app is designed to address challenges like inconsistent workout tracking, limited progress visualization, and minimal feedback on fitness goals. It offers an all-in-one solution for setting objectives, logging workouts, monitoring progress, and receiving personalized feedback to keep users motivated and committed to their health journey.

### **1.3 Overview**

The Fitness Tracking App is an object-oriented solution designed to help users manage fitness goals effectively. It offers features like user registration, workout logging, progress tracking, goal setting, and personalized feedback. By addressing challenges such as inconsistent tracking and lack of motivation, the app provides a secure, user-friendly platform to monitor progress and stay committed to a healthy lifestyle.

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## **2. General Description**

The **"Fitness Tracking App"** is a comprehensive fitness management solution designed to assist users in achieving their health goals. It focuses on providing an intuitive and engaging platform for logging workouts, setting goals, tracking progress, and receiving personalized feedback.

The app caters to a diverse audience, from beginners starting their fitness journey to experienced individuals looking to monitor performance. It simplifies fitness tracking by incorporating visual progress reports, motivational insights, and an easy-to-navigate interface.

### **2.1 General Functions**

1. **Authentication:**

* **User registration and login with secure password encryption.**
* **Support for password recovery and account management.**

1. **Workout Logging (CRUD Operations):**

* **Create, update, and delete workout logs.**
* **Store workout details such as type, duration, and intensity.**

1. **Goal Management:**

* **Set, update, and delete fitness goals.**
* **Define target values and deadlines.**

1. **Progress Tracking and Analytics:**

* **Generate visual charts and reports to track workout frequency and goal progress.**
* **Provide summaries and insights into performance trends.**

1. **Personalized Feedback:**

* **Analyze user data to deliver motivational messages and actionable recommendations.**
* **Notify users about milestones and suggest areas for improvement.**

1. **Admin Management:**

* **Manage user accounts, reset passwords, and deactivate problematic accounts.**
* **Monitor system usage and perform maintenance tasks like database backups.**

1. **System Performance and Reliability:**

* **Ensure quick response times for user actions.**
* **Maintain data security, backups, and high availability.**

### **2.2 User Characteristics**

1. **General Fitness Enthusiasts:**

* **Users seeking an easy-to-use platform to track and manage their fitness activities.**
* **Require intuitive interfaces with minimal technical knowledge for seamless navigation.**

1. **Beginners in Fitness:**

* **Need guidance and motivation to start and maintain a fitness routine.**
* **Benefit from automated feedback and goal-setting assistance.**

1. **Experienced Fitness Users:**

* **Require detailed tracking and progress analysis to optimize their routines.**
* **Appreciate advanced features like performance trends and milestone notifications.**

1. **Health-Conscious Individuals:**

* **Need a reliable way to monitor their fitness journey to achieve specific health goals.**
* **Prefer data privacy and secure handling of sensitive personal information.**

1. **Admins/Managers:**

* **Require tools for managing user accounts, monitoring system performance, and performing maintenance tasks.**
* **Need a dedicated dashboard with easy access to system analytics and administrative controls.**

### 2.3 Features and Benefits

Features:

* User Authentication:
  + Secure registration and login with encrypted password storage.
* Workout Logging:
  + Allows users to record workout details, including type, duration, and intensity.
* Goal Setting:
  + Users can set fitness goals with target values and deadlines.
* Progress Tracking:
  + Visual reports and charts show workout trends and goal progress.
* Personalized Feedback:
  + Automated feedback, motivational tips, and milestone notifications based on user data.
* Admin Dashboard:
  + Tools for managing user accounts, monitoring activity, and ensuring system reliability.

#### Benefits:

1. Improved Fitness Management:
   * Centralized platform for tracking workouts, setting goals, and monitoring progress.
2. Enhanced User Motivation:
   * Personalized feedback and visual progress reports encourage users to stay on track.
3. Ease of Use:
   * Simple interface designed for users of all experience levels.
4. Data Security:
   * Ensures user privacy with encrypted data storage and secure authentication.
5. Reliability and Scalability:
   * Designed to handle growing user bases without performance issues,
   * providing a dependable solution for all fitness needs.

## **3. Functional Requirements**

The system must support the following functionalities:

1. User Registration and Login:

* Users can create accounts by providing their name, email, and password.
* Passwords are securely encrypted, and users can log in with their credentials.
* Users can reset passwords in case of forgotten credentials.

2. Workout Logging:

* Users can record workout details, including type, duration, and intensity level.
* Logged workouts are stored in the user's profile and can be edited or deleted as needed.

3. Goal Setting:

* Users can set specific fitness goals, such as weight loss or strength improvement, with target values and deadlines.
* The system tracks progress toward goals and notifies users of their status.

4. Progress Tracking:

* Users can view detailed progress reports, including visual charts showing workout trends and summaries of completed goals.
* Insights are provided to help users evaluate adherence to their plans.

5. Personalized Feedback:

* The system analyzes user data to generate feedback, such as weekly summaries, motivational tips, and milestone notifications.

6. Admin Management:

* Admins can manage user accounts, reset passwords, and deactivate problematic accounts.
* Admins can monitor system activity and perform maintenance tasks like database backups.

## **4. Interface Requirements**

### **4.1 User Interfaces**

* **The app will have a responsive design for desktop, tablet, and mobile devices.**
* **Personalized dashboards display fitness summaries and goals.**
* **Interactive elements like visual charts and easy navigation for logging activities and tracking progress.**
* **Users will receive notifications for milestones and reminders.**

### **4.2 Software Interfaces**

* **The app integrates with REST APIs for user authentication, data retrieval, and logging.**
* **Databases like MySQL or Firebase Firestore will store user data securely.**
* **Charting libraries (Chart.js) will generate progress visualizations.**
* **Cloud services like AWS or Google Cloud will ensure scalability and high availability.**

## **6. Non-Functional Requirements**

1. Security:

* Data encryption, multi-factor authentication, and regular security audits to protect user information.

1. Reliability:

* 99.9% uptime, daily backups, and robust error handling for continuous service and data protection.

1. Portability:

* Compatibility with iOS, Android, and web browsers, with a responsive design for various devices.

1. Performance:

* Quick response times (within 1 second) and scalable to handle a growing number of users without performance issues.