Gym Management System Requirements

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1 Introduction

The Gym Management System is designed to streamline and automate the operations of a gym by managing client profiles, training plans, nutrition plans, and coach assignments. The system aims to improve usability, efficiency, and scalability while ensuring high performance and robust security. This document outlines the functional and non-functional requirements of the system and includes categorized requirements using the MoSCoW method.

2 Requirements

2.1 Functional Requirements

The functional requirements are categorized using the MoSCoW method:

Must Have

- **REQ_001:** The system must allow gym administrators to view, update, and delete client profiles.
- **REQ_002:** The system must allow coaches to assign training plans to clients.
- **REQ_003:** The system must allow coaches to assign nutrition plans to clients.
- **REQ_004:** The system must allow assigning coaches to specific clients.
- **REQ_005:** The system must authenticate users (admin, coaches, and clients) using login credentials.
- **REQ_006:** The system must display a dashboard summarizing client's active plans and assigned coaches.
- **REQ_007:** The system must allow coaches to update and monitor the progress of their assigned clients.

Should Have

- **REQ_008:** The system should allow clients to view their training and nutrition plans.
- **REQ_009:** The system should allow clients to track their progress.
- **REQ_010:** The system should support multiple roles, such as admin, coach, and client.

Could Have

- **REQ_011:** The system could integrate with wearable fitness devices for real-time data synchronization.
- **REQ_012:** The system could generate reports on client progress over time.
- **REQ_013:** The system could allow online payments for membership and coaching services.

Won't Have

- **REQ_014:** The system will not provide live video streaming for virtual workouts.
- **REQ_015:** The system will not include AI-based personalized training plans in this version.

2.2 Non-Functional Requirements

The non-functional requirements define the system's quality attributes:

- **REQ_016 (Performance):** The system should respond to user actions within 2 seconds under normal load.
- **REQ_018 (Scalability):** The system must be able to support up to 1,000 concurrent users.
- **REQ_019 (Usability):** The system should have an intuitive user interface that requires minimal training.
- **REQ_020 (Availability):** The system must have 99.9% uptime.
- **REQ_021 (Compatibility):** The system should be accessible on web browsers (Chrome, Firefox, Safari, Edge).

2.3 Use Case Scenarios

The following use case scenarios outline typical interactions with the system:

- **Use Case 1: Managing Client Profiles**
  - **Actor:** Admin
  - **Preconditions:** Admin must be logged into the system with valid credentials.
  - **Postconditions:** Client profiles are updated, created, or deleted in the system.
  - **Steps:**
    1. Admin navigates to the client profile management section.
    2. Admin selects an action (create, update, delete).
    3. Admin inputs the required details and confirms the action.
  - **Error Handling:** Display an error message if required fields are missing or the operation fails.
  - **Secondary Actor:** Client
- **Use Case 2: Assigning Coaches to Clients**
  - **Actor:** Admin
  - **Preconditions:** Both client and coach profiles must exist in the system.
  - **Postconditions:** The selected coach is assigned to the specified client.
  - **Steps:**
    1. Admin navigates to the coach assignment section.
    2. Admin selects a client and a coach from the respective lists.
    3. Admin confirms the assignment.
  - **Error Handling:** Display an error if the coach or client does not exist.
  - **Secondary Actor:** Client
- **Use Case 3: Viewing Training Plans**
  - **Actor:** Client
  - **Preconditions:** Client must be logged into the system.
  - **Postconditions:** The client views their training plan.
  - **Steps:**
    1. Client logs into the system.
    2. Client navigates to the training plan section.

3. Client reviews the training plan details.

- **Error Handling:** Display an error if the client has no assigned training plan.
- **Secondary Actor:** None

- **Use Case 4: Monitoring Client Progress**
  - **Actor:** Coach
  - **Preconditions:** Coach must be logged into the system and assigned to a client.
  - **Postconditions:** The client's progress is updated and monitored.
  - **Steps:**
    1. Coach logs into the system.
    2. Coach navigates to the progress monitoring section.
    3. Coach updates the client's progress details and saves the changes.
  - **Error Handling:** Display an error if the client progress update fails.
  - **Secondary Actor:** Client