

Software Requirements Specification (SRS)

Project Name: [RepTrack]

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1. Introduction

1.1 Purpose

The purpose of this document is to outline the functional and non-functional requirements for **RepTrack**. It provides a detailed description of the system's functionality and constraints and serves as a guide for developers, testers, and other stakeholders.

1.2 Scope

The **RepTrack** system will **connect the client(trainee) with their gym, coach, or nutritionist**. The system will provide functionality for:

- personalized workout and nutrition plan.
- Data Visualization of performance.
- communication between trainees, coaches, nutritionists, and gyms.
- membership for trainees

1.3 Definitions, Acronyms, and Abbreviations

- **API:** Application Programming Interface
 - **UAT:** User Acceptance Testing
 - **UI:** User Interface, how the pages look in the program
 - **CRUD:** Create, Read, Update, Delete
 - **UX:** User Experience, the experience the user feels when interacting with the program
 - **Dashboard:** Data Visualization for displaying the analytics
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2. System Overview

2.1 Product Perspective

This system is a **standalone system**, and it interacts with **users**. It consists of:

- **Frontend:** Django Frontend
- **Backend:** Django REST Framework (DRF) API
- **Database:** Supabase

2.2 Product Functions

The key functions of the system include:

1. **Sign up/in and authentication with 3rd parties:** The user will be able to sign up/in using Google.
2. **Chatting:** It will contain chatting rooms so the trainees can chat with their coaches or with each other (at the same GYM)
3. **Rating:** It includes a rating system so the trainee can rate the coaches.
4. **Community:** As RepTrack will be utilized by multiple gyms, it enables gym owners to post information about the plans they offer, their locations, and other relevant details. Trainees can also share their own posts, including workout progress, reviews, or questions. This interactive platform helps trainees browse, compare, and engage with various gyms, making it easier to choose the one that best fits their needs.
5. **Workout and scheduling:** All coaches are able to upload the workout program to their trainees, and the trainees are able to see what they are going to do today.

2.3 User Classes and Characteristics

Different types of users who will interact with the system include:

- **Business owner:** have full control, Access over Coaches and admins and trainees can see all statistical data of the Gym regarding all users in the system + statistical financial information
- **Admin Users:** Have full access to all system functions, including managing trainee and approving and removing coaches, suspending users and coaches, make gym plans and offers
- **coach:** communicates with trainees through chat , make communities, see trainee progress from join date
- **trainee:** Can perform standard tasks such as [choosing the coach / self-training, choosing a nutrition doctor (not required), adding weights lifted on the day he trained, accessing chat to communicate with communities, the assigned coach and the chosen nutrition doctor, rating coaches, make communities].
- **Nutrition doctor:** can see assigned trainees and chat with them.
- **Guest Users:** can only view the promotions and the photos of the gym without additional signup requirements

2.4 Operating Environment

The system will operate in the following environments:

- **Client Side:** Runs on web browsers like Chrome, Firefox, Edge , and Safari.
 - **Server Side:** Hosted on a [cloud] server running [linux/windows server] and using [insert software stack like Node.js, Python, etc.].
 - **Database:** [Supabase].
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3. Functional Requirements

3.1 Use Cases

3.1.1 Register

3.1.1.1 User Register

- **Description:** The user can register his data to the platform to create account.
- **Actors:** Coach, Trainee, Nutritionist, Gym owner/admin.
- **Preconditions:** user must have access to the registration interface
- **Postconditions:** The user will have an account and be able to log in.
- **Steps:**
 1. Access the registration page.
 2. Enter an email address or register using a third-party app.
 3. create username.
 4. Enter and confirm password.
 5. Submit registration form data.

3.1.2 Login

3.1.2.1 User Login

- **Description:** The user will be able to Log into the platform.
- **Actors:** Coach, Trainee, Nutritionist, Gym owner/admin.
- **Preconditions:** platform is accessible, user is registred
- **Postconditions:** The user is authenticated and will be able to use the platform.
- **Steps:**
 1. Access the login page.
 2. Enter the registered email address.
 3. enter Password.
 4. Submit login credentials.

3.1.3 Logout

3.1.3.1 User Logout

- **Description:** User will be able to Log out of the platform.
- **Actors:** Coach, Trainee, Nutritionist, Gym owner/admin.
- **Preconditions:** Must be logged into the platform.
- **Postconditions:** The user will be Logged out from the platform and session will be terminated.
- **Steps:**
 1. Open the main menu.
 2. select "Logout" button.

3.1.4 Post a post

3.1.4.1 Post a post

- **Description:** User will be able to Post a post into the community timeline.
- **Actors:** Coach,Trainee,Nutritionist,Gym owner/admin.
- **Preconditions:** Must be logged into the platfrom.
- **Postconditions:**A post will be added to the timeline and the user profile.
- **Steps:**
 1. Log in to the platform.

2. open the community timeline page.
3. create a new Post and submit it.

3.1.5 View Community Timeline

3.1.5.1 View Community Timeline

- **Description:** User can view posts, updates, and activities shared on the community timeline.
- **Actors:** Coach, Trainee, Nutritionist, Gym Owner/Admin.
- **Preconditions:** User is logged into the platform or access guests functionality which is limited.
- **Postconditions:** The user can browse and interact with posts on the timeline.
- **Steps:**
 1. Log into the platform (or enter as a guest with limited access).
 2. Navigate to the community timeline.
 3. Scroll through and view posts.

3.1.6 Manage Trainee Workout Plan

3.1.6.1 Manage Trainee Workout Plan

- **Description:** Coach can create, update, or delete workout plans for assigned trainees.
- **Actors:** Coach
- **Preconditions:** Coach must be logged into the platform.
- **Postconditions:** Updated workout plans are available in the trainee's profile.
- **Steps:**
 1. Log into the platform.
 2. Navigate to the trainee's profile or workout section.
 3. Create, update, or delete workout plans.
 4. Save changes.

3.1.7 Access Dashboard

3.1.7.1 Access Dashboard

- **Description:** Coach can view a dashboard with data visualizations of trainees' progress.
- **Actors:** Coach
- **Preconditions:** Coach must be logged into the platform.
- **Postconditions:** Coach can view and analyze real-time progress and performance metrics of trainees.
- **Steps:**
 1. Log into the platform.
 2. Access the dashboard through the main menu.
 3. Review trainee progress data and analytics.

3.1.8 Profile Management

3.1.8.1 Profile Management

- **Description:** User can update or delete their profile information.
- **Actors:** Coach, Nutritionist, Trainee.
- **Preconditions:** User must be logged into the platform.
- **Postconditions:** Updated profile information appears on the user's profile.
- **Steps:**
 1. Log into the platform.

2. Open the profile settings.
3. Update or delete profile information.
4. Save changes.

3.1.9 Rate Coach

3.1.9.1 Rate Coach

- **Description:** Trainee can submit a rating for their coach based on their training experience.
- **Actors:** Trainee
- **Preconditions:** Trainee must be logged into the platform and assigned to a coach.
- **Postconditions:** The rating is recorded and added to the coach's profile.
- **Steps:**
 1. Log into the platform.
 2. Navigate to the "My Coach" or similar section.
 3. Select the "Rate Coach" option.
 4. Choose a rating (from 1 to 5 stars) and, optionally, leave feedback.
 5. Submit the rating.
 6. Confirmation message appears, and the rating is updated on the coach's profile.

3.1.10 Monthly Leaderboard

3.1.10.1 Generate Monthly Leaderboard

- **Description:** system will generate a leaderboard every month to rank the trainees based on their progress and achievements. The top-ranking trainees will receive a reward related to their field as recognition.
- **Actors:** system, Trainee, Coach
- **Preconditions:** Trainees have logged their workout and progress data on the website.
- **Postconditions:** The leaderboard is generated, and the top trainees is identified and notified.
- **Steps:**
 1. Gather trainee data based on key performance metrics (completed workouts, improvements, consistency).
 2. Rank trainees according to a predefined scoring system.
 3. Display the leaderboard in the community section.
 4. Announce the top trainee and issue the reward.

3.2.1 Data Entry for Completed Workouts and Meals

3.2.1.1 Data Entry

- **Description:** Trainee can log completed workouts and meal entries.
- **Actors:** Trainee
- **Preconditions:** Trainee must be logged into the platform.
- **Postconditions:** Data is added to the trainee's personal log.
- **Steps:**
 1. Log into the platform.
 2. Access the "Log" section.
 3. Enter workout or meal data.
 4. Save entry.

3.2.2 Request Plan Changes

3.2.2.1 Request Changes

- **Description:** Trainee can request changes to their workout or diet plan.
- **Actors:** Trainee
- **Preconditions:** Trainee must be logged into the platform.
- **Postconditions:** Change request is submitted to the coach or nutritionist.
- **Steps:**
 1. Log into the platform.
 2. Access the “Request Changes” section.
 3. Submit a request for plan modifications.

3.2.3 Chat with Coach/Nutritionist

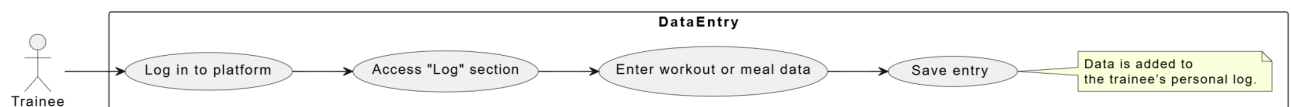
3.2.3.1 Chat with Coach/Nutritionist

- **Description:** Trainee can communicate with their coach or nutritionist via chat.
- **Actors:** Trainee
- **Preconditions:** Trainee must be logged into the platform.
- **Postconditions:** Chat messages are exchanged in real-time.
- **Steps:**
 1. Log into the platform.
 2. Open the chat feature.
 3. Send and receive messages.

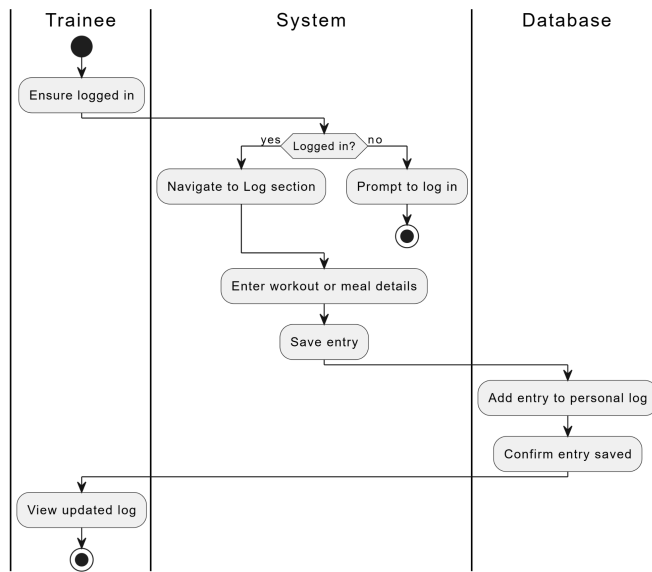
3.1.1.2 Use Case Diagram

- **Use Case 1: Data Entry for Workouts and Meals**
- **Description:** Trainees can log completed workouts and meals to track their progress.
- **Actors:** Trainee
- **Preconditions:**
 - Trainee must be logged into the platform
 - Functionality must be available
 - data is saved to trainee's personal profile and included in progress tracking metrics

Data Entry



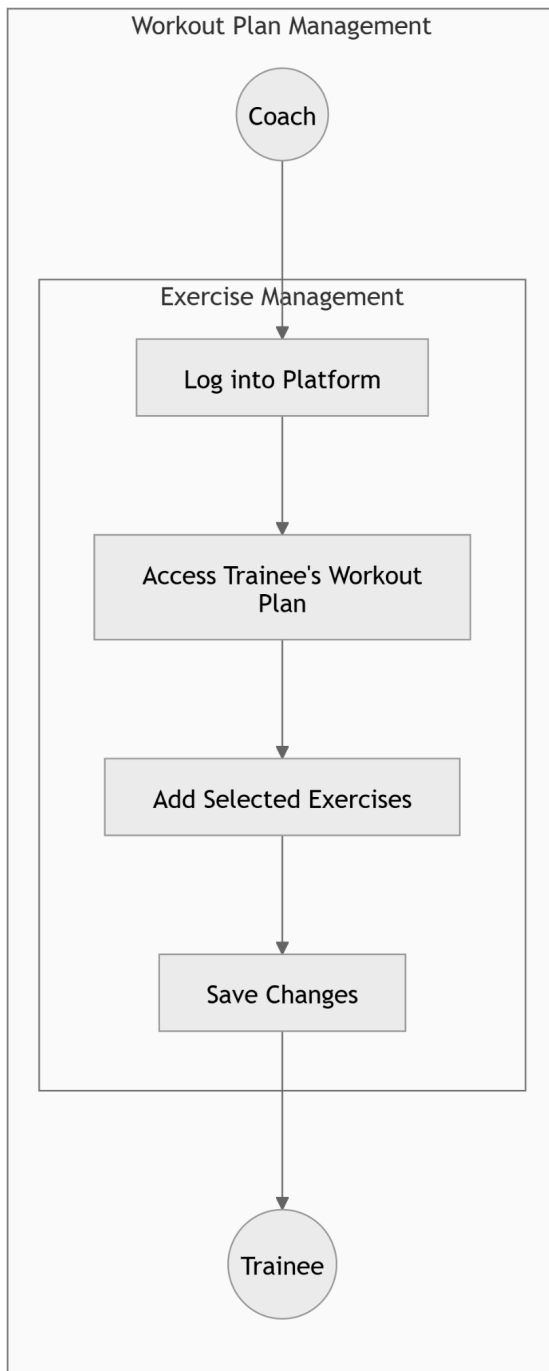
Data Entry (More Detailed)



Use Case 2: Add Exercise to Workout Plan

- **Description:** Coaches can add exercises to a trainee's workout plan.
- **Actors:** Coach
- **Preconditions:**
 - The coach is logged into the platform.
 - The coach has access to the trainee's profile.
- **Postconditions:**
 - The workout plan is updated, and the trainee can view the added exercise.

Add Exercise to workout plan



3.2 Feature Requirements

Feature 1: Data Logging

- **Description:** Enables trainees to log their completed workouts and meals.
- **Inputs:**
 - Workout details (exercise, duration, repetitions)
 - Meal details (calorie count, nutrition details)
- **Outputs:**
 - Data saved to the trainee's profile.
 - Progress metrics updated on the trainee dashboard.
- **Error Handling:**
 - If required fields are missing, prompt the user to complete them before submission.
 - If the server is unavailable, display an error message and allow data to be retried or saved locally.

Feature 2: Add Exercise to Workout Plan

- **Description:** Allows coaches to update workout plans by adding new exercises
- **Inputs:**
 - Exercise details (name, description, sets, repetitions)
 - Trainee profile selection
- **Outputs:**
 - Updated workout plan visible in the trainee's profile.
 - Notification sent to the trainee.
- **Error Handling:**
 - If required details are missing, alert the coach to complete the fields.
 - If the exercise database is inaccessible, allow custom entry and flag the issue for resolution

4. Non-Functional Requirements

4.1 Performance Requirements

- The system should respond to user requests within 5 seconds to maintain a good user experience.
- It must support up to 10 concurrent users without significant performance degradation.

4.2 Security Requirements

- User data, including workout and nutrition plans, must be encrypted in transit (using HTTPS) and at rest (using SSMS database encryption).
- Only authorized users should have access to specific system functionalities, such as coaches accessing client progress or admins managing user accounts.
- SQL injection prevention, all database interactions should include parameterized queries to prevent SQL injection attacks
- only admins should know how to access server resources using SSL

- Authentication and Authorization using (TBD) to manage secure, role-based access control for different user types (Coach, Trainee, Nutritionist, Admin, Gym Owner)

4.3 Usability Requirements

- The user interface should be intuitive, with clear navigation and user guidance, a consistent layout, and user-friendly elements for quick guidance.
- The website should comply with WCAG 2.1 accessibility standards, ensuring that users with disabilities can fully access and use the system.
- The website should work on different devices including desktops, tablets, and mobile
- The website should provide multiple language options for different users' nationalities.

4.4 Reliability and Availability Requirements

- The system must maintain an uptime of 99.9% to ensure availability to users.
- In case of system failure, it must recover and restore functionality within 5 minutes.
- The system should have automated daily backups to prevent data loss.

4.5 Scalability

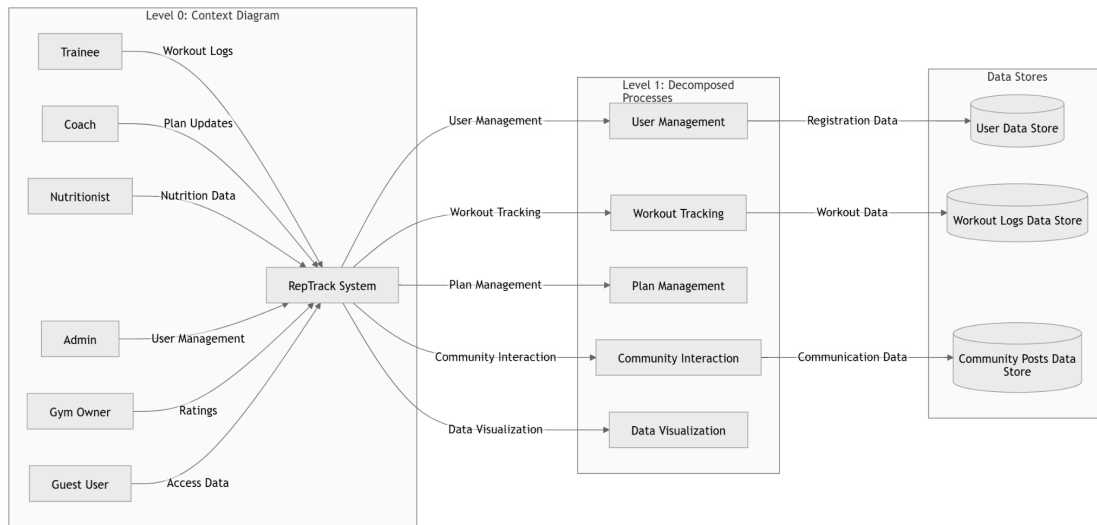
- The system should be able to scale to support 1k active users or 10 GB of data without performance loss.

4.6 Compatibility

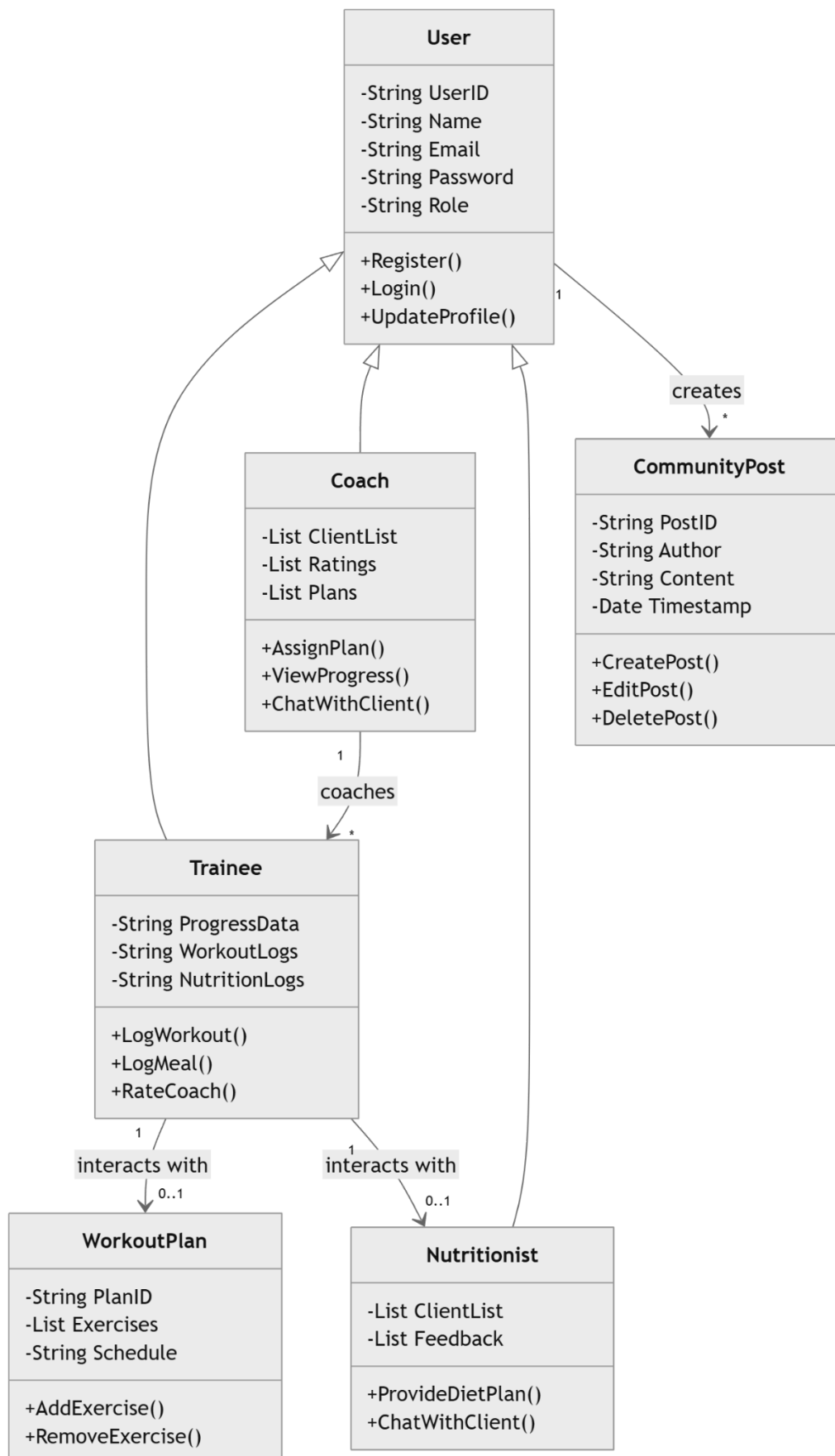
- The software should work on modern web browsers, including Chrome, Firefox, Edge, and Safari.
 - The system should be compatible with mobile devices.
 - The system should allow integration with third-party applications and services.
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5. System Models

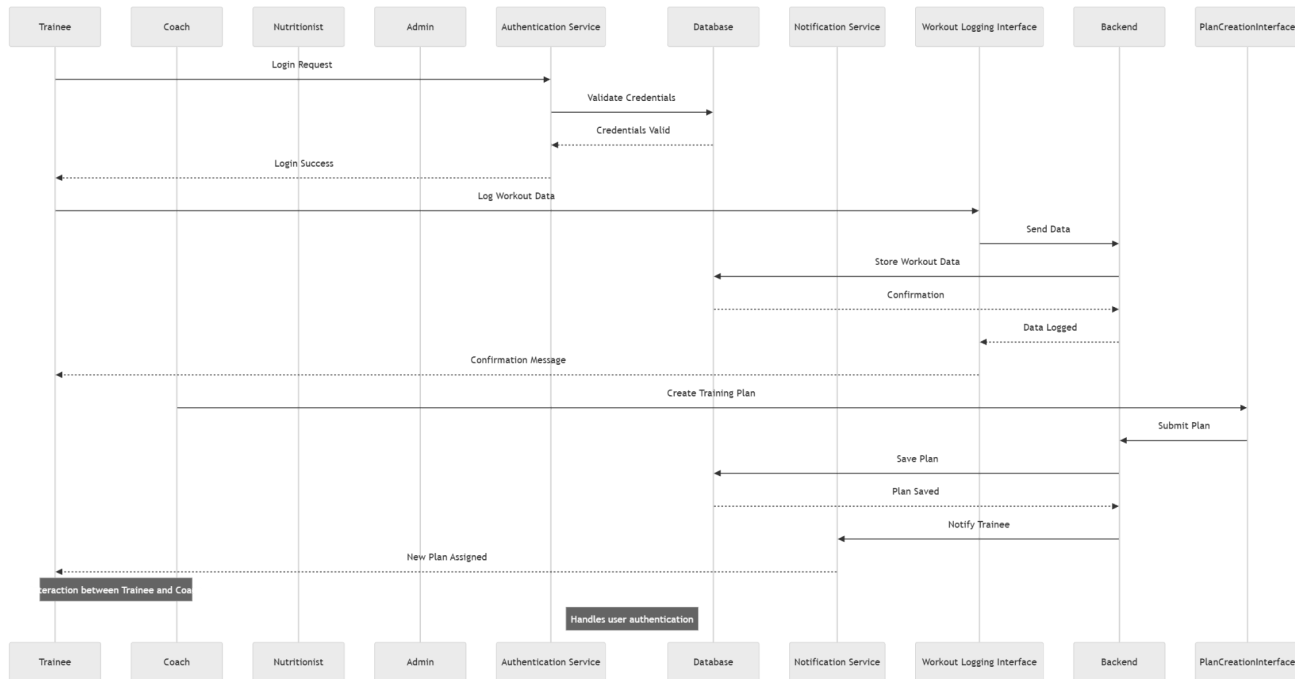
5.2 Data Flow Diagrams



5.3 Class Diagram



5.4 Sequence Diagram



6. External Interface Requirements

6.1 User Interfaces

- The system should have an intuitive UI with the following major components:
 1. **Home Screen:** Displays a summary of user activity.
 2. **Dashboard:** Allows the user to perform actions like: insert action.
 3. **Community Screen:** Make it easier to communicate with others.
 4. **Chatting Screen:** Real-time communication between the trainee and the coach.
 5. **Workout Screen:** Allows the trainees to track their workout activities.

6.2 API Interfaces

- The system will provide APIs for insert functionalities, ex: data retrieval, user management, data sending].
- APIs will follow the REST/GraphQL protocol.

7. Other Requirements

7.1 Legal and Regulatory Requirements

- The system must comply with regulations like PIPEDA.

7.2 Documentation Requirements

- Provide user manuals and API documentation for developers.

7.3 Data Backup Requirements

- The system should back up data every week and store backups for 15 days.

8. Conclusion

This SRS document outlines the necessary functional and non-functional requirements for **RepTrack**. By adhering to these specifications, the development team will create a system that meets the needs of all stakeholders.