Software Requirements Specification

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Contents

1. Abstract

FitToday is a web-based application designed to assist users in tracking and managing their fitness goals. The app provides users with a convenient platform to sign up or log in and input their personal details. Upon successful login, users gain access to a comprehensive list of exercises, each accompanied by its purpose and benefits. The app offers a preexisting workout plan, carefully curated to suit various fitness levels and goals. Users have the flexibility to customize their workout plan by adding exercises from the provided list. This empowers them to personalize their fitness journey based on their preferences and specific requirements.

To help users maintain consistency and track their progress, the app incorporates a daily task completion feature. Once users complete their workout for the day, they can mark it as done, ensuring they stay on top of their fitness routine. The profile page serves as a dashboard, showcasing users' daily progress based on their workout completion status. This visual representation enables users to stay motivated and monitor their consistency.

Additionally, the app includes a weight tracking functionality, allowing users to update their weight regularly. By recording weight changes over time, users can observe their progress and identify trends in their fitness journey. This feature promotes self-awareness and encourages users to stay focused on their overall well-being.

Overall, the fitness tracker app provides a user-friendly and intuitive interface for individuals seeking an efficient and organized approach to fitness tracking. It empowers users to tailor their workout plans, monitor their daily progress, and maintain a holistic view of their fitness journey

2. Modules

2.1 Home Page

The application starts with the Homepage and this page gives the user an overview of what the application is about. It provides the user with "Get Fit Today" button that offers them the choice of logging in or signing up. If the user has an existing account they can opt to log in. Otherwise, they can opt to sign up.

2.2 Log in/Sign Up

If the user has chosen to log in, only two fields will be required. These are their usernames and passwords. On entering the details the input is validated and the user is allowed to proceed to the dashboard. If the user has chosen sign up, they can create an account by

entering details like username, email id, password. The signing up process also allows user to create their fitness profile. This will require them to enter data like gender, height, weight etc. Then the admin would validate the data and if the data provided by the user is valid, then it will be stored in the database and the user's account will have been created. The user can log in using their credentials to proceed to dashboard.

Valid Username and Password:

1. Username: A minimum of 4 characters, including at least one capital letter and one number. The use of special characters is permitted.

2. Password: A minimum of 8 characters, including at least one capital letter, one number, and one special character has to be accepted by the system.

After entering all required input parameters, when the user clicks on the login button, the username and password entered will be verified with the database. If the credentials are verified successfully, the user will be redirected to the dashboard. If the credentials are incorrect, the system will display a message "Invalid Credentials" to the user.

2.3 Exercise list

The web app will offer a comprehensive list of exercises categorized by type (e.g., cardio, strength, flexibility) and provide users with detailed information about each exercise, including its purpose, benefits, and proper technique. The users can browse through these exercises to find ones that's most suited to them. They can mark their favorites to come back to it when they're ready. These exercises will be made available in the favorites section.

Search option will be made available on top that allows the users to search for a particular exercise.

2.4 Customizable Work-out Plan

This page will consist of predefined workout plans curated for different fitness goals targeting different body parts. But the users will also have the option of making their own workout plans. The users will have the ability to create and customize their workout plans based on their preferences, fitness levels, and goals. They can choose exercises from the provided list and add them to their workout plan, allowing for flexibility and personalization.

2.5 Daily Workout Completion Tracking and Weight Tracking

The app will feature a functionality that allows users to mark their workouts as "completed" once they finish their daily exercise routines. This tracking feature will provide users with a visual representation of their consistency and progress.

Users will be able to update their weight regularly within the app, allowing them to track their weight changes over time. This feature enables users to monitor their progress and observe trends in their weight management journey.

2.6 Profile Management

Users can view or update their personal details and credentials in this page. They can also log out from their account in this page.

3. Functional Requirements

3.1 Getting Started on Homepage

- This page must tell the user what the application is about.
- The user-interface must be easy to the eyes and relevant to the purpose of the application.
- The page will have a button called "Get Fit today ". Clicking on this should allow the users to choose between log in and sign up.
- Depending on the option selected, the user must be directed to the respective page

3.2 User Log in and Sign up

- The app shall provide a user-friendly registration and login interface.
- The app shall validate user inputs for registration, including email format and password strength.
- The app shall securely store and handle user credentials.
- The app shall allow users to update their profile information, including name, age, gender, and weight.
- The app shall provide options for users to customize their profile settings, such as privacy preferences.
- The app shall provide password reset functionality in case users forget their passwords.

3.3 Exercise Library and Information

This feature provides users with a library of exercises along with detailed information about each exercise's purpose and technique.

- The app shall present users with a categorized and searchable exercise library.
- The app shall provide exercise details such as exercise name, description, muscle groups targeted, and proper technique.
- The app shall allow users to add exercises from the library to their workout plans.
- The app shall support filtering and sorting options within the exercise library for easy exploration.

3.4 Workout Planning

This feature enables users to create personalized workout plans and track their progress. It is of high priority as it forms the core functionality of the fitness tracker app.

- The app shall allow users to create and customize their workout plans, including selecting exercises, defining sets and repetitions, and scheduling.
- The app shall provide preexisting workout plans for users to choose from.
- The app shall enable users to add exercises from the exercise library to their workout plans.
- The app shall allow users to mark exercises as completed for the day.

3.5 Workout Tracking

- The app shall track and display users' daily progress based on completed exercises.
- The app shall allow users to update their weight for progress tracking purposes.
- The weight progress will also be displayed graphically for easy visualization.

3.6 Profile Management

- The app shall allow users to view their profile details such as their username, email gender, height, weight, body type, age etc. That they had entered while signing up.
- The users can choose to update these details.
- The app shall allow the users to reset their password after authenticating it and checking its validity.

4. Non – Functional Requirements

4.1 Performance Requirements

Response Time:

The app should respond to user interactions within 1 second, ensuring a smooth and responsive user experience. Exercise details and workout plan loading should not exceed 2 seconds to avoid delays during browsing and selection.

Scalability:

The system should be designed to handle a growing number of users and exercise data without significant performance degradation. The app should be capable of supporting concurrent user activity without experiencing slowdowns or crashes.

4.2 Security Requirements

User Authentication:

The app should provide secure and reliable user authentication mechanisms to prevent unauthorized access to user accounts. Strong password policies should be enforced, requiring users to create passwords that meet specified complexity criteria.

Data Encryption:

User data, including personal information and progress records, should be encrypted both during transit and at rest to protect against unauthorized access. Encryption algorithms and protocols used for data protection should adhere to industry best practices and standards.

Access Control:

The app should implement appropriate access control measures to ensure that users can only access the data and features they are authorized to use. User roles and permissions should be defined to restrict access to sensitive information and administrative functionalities.

4.3 Usability Requirements

Intuitive User Interface:

The user interface should be designed with a clean and intuitive layout, making it easy for users to navigate and interact with the app. Clear labels, icons, and visual cues should be used to guide users through various functionalities.

Responsiveness:

The app should provide immediate feedback to user actions, such as button clicks or form submissions, to enhance the perceived responsiveness and user satisfaction.

4.4 Reliability Requirements

Availability:

The app should aim for a high level of availability, minimizing downtime and providing users with access to the service for the majority of the time. Scheduled maintenance and downtime, if any, should be communicated to users in advance through appropriate notifications.

Error Handling:

The app should handle errors gracefully, providing clear and informative error messages to users in case of failures or exceptional situations. Logging and error tracking mechanisms should be in place to aid in troubleshooting and resolving issues promptly.

Data Backup and Recovery:

Regular data backups should be performed to prevent data loss in case of system failures or disasters. Mechanisms for data recovery and restoration should be in place to minimize the impact of potential data loss incidents.

5. High-Level Design

The FitToday web application consists of multiple modules that work together to provide the users with a convenient way to plan, customize and track their workouts and optimize their fitness journey.

The High-Level Design of this fitness tracker app encompasses the overall architecture and key components that enable the functionality and performance of the application.

- **System Architecture**

  The fitness tracker app follows a client-server architecture, consisting of the following major components:

  Client Application:

  The client application communicates with the server-side components to retrieve user data, sync updates, and perform various actions.

  Server-Side Components:

  The server-side components serve as the core of the system and handle data storage, processing, and business logic.They are responsible for user management, exercise tracking, workout planning, and other system functionalities. The server-side components provide APIs for the client application to communicate and exchange data securely.

  Database:

  The system utilizes a relational database management system (RDBMS) to store user profiles, exercise data, workout plans, and related information. The database is designed to ensure data consistency, integrity, and efficient retrieval for a smooth user

experience.

- **System Modules:**

The fitness tracker app is organized into the following modules, each serving a specific purpose within the system:

User Management:

This module handles user registration, authentication, and profile management.

It provides functionality for users to create accounts, log in securely, and update their profile information.

Exercise Tracking:

The exercise tracking module enables users to record and track their workouts.

It allows users to enter exercise details such as type, duration, intensity, and associated metrics. The module provides features for real-time tracking, history viewing, and progress monitoring.

Workout Planning:

This module facilitates the creation and management of workout plans tailored to the user's fitness goals. Users can define workout routines, specify exercises, set goals, and schedule activities. The module offers flexibility in customizing plans and provides recommendations based on user preferences and progress.

Reporting and Analytics:

The reporting and analytics module generates insightful reports and visualizations based on user data. It provides users with summarized information on their performance, progress, and achievements.The module helps users gain insights into their fitness journey and make informed decisions for improvement.

6. Low-Level Design

The Low-Level Design of the online bus reservation system is as follows:

1. Homepage Module:
   a) The user can read about the website here.
   b) The user clicks on "Get Fit Today" and is offered options to log in or sign up.
   c) If the user has an account he selects log in, else he selects sign up.

2. Login Module:
   a) The user enters their login credentials (username and password).
   b) The system verifies the user's credentials by checking them against the database.
   c) If the credentials are valid, the user is logged in and granted access to the system.

3. Sign up Module:
   a) The user provides their personal information (name, email, password, height, weight, age, gender, body type, fitness goal etc.)
   b) The system validates the information and creates a new account for the user.

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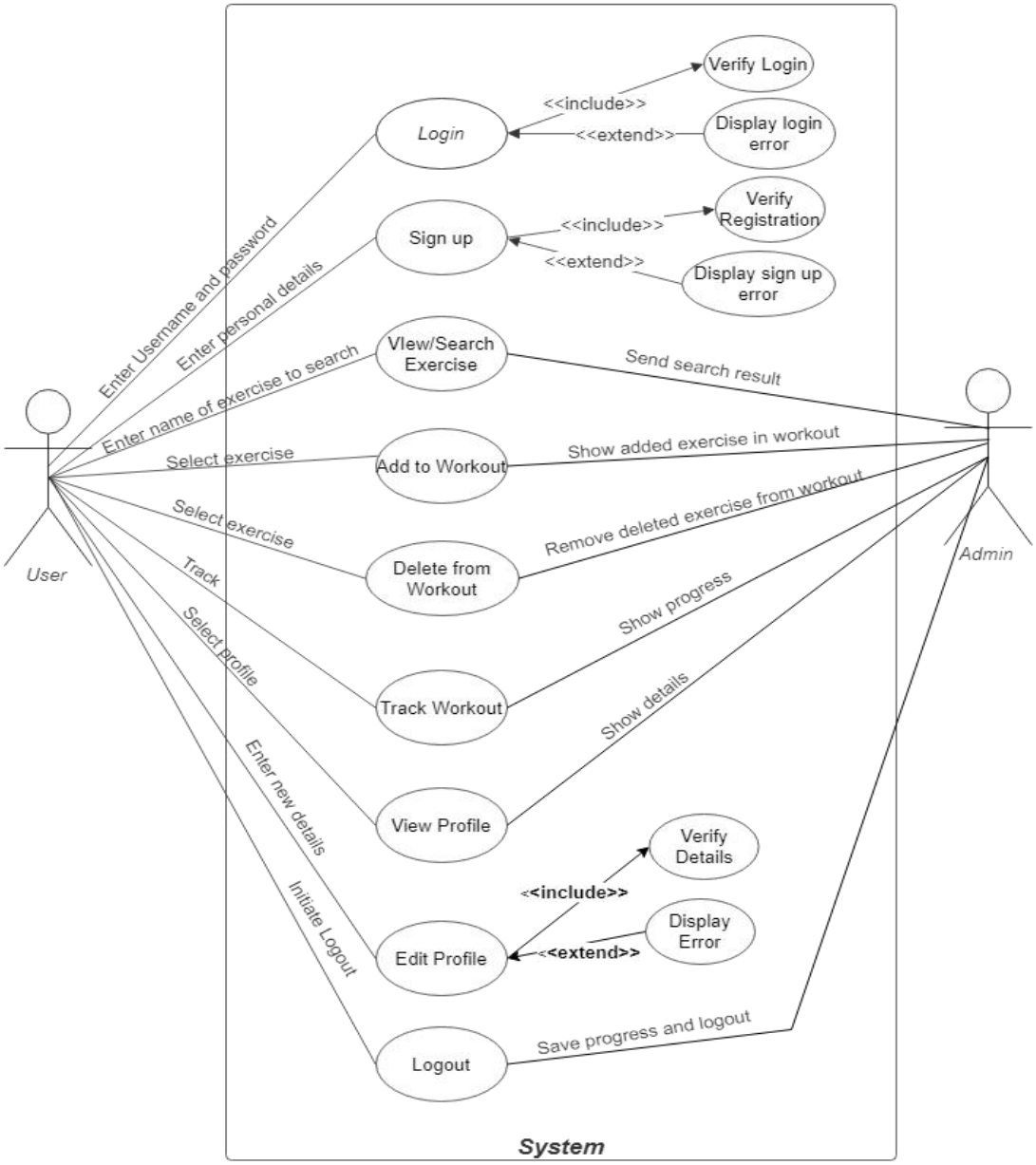
4. Exercise Library Module:
   a) A list of exercises is provided.
   b) The user can scroll through to explore new exercises.
   c) A search function is also provided to allow the user to search for their preferred exercise.
   d) On clicking on an exercise, information about the same is provided such as the exercise name, the body part it targets, method of performing it etc.
   e) Users can choose to add an exercise to their favorites.

5. Work-out Planning and Customizing Module:
   a) A set of predefined exercises is made available to the users.
   b) The users can choose to use these preexisting workout plans or modify them.
   c) They can modify their workout plan by first clicking on the desired workout plan and then clicking on "Add Exercise" to add their desired exercise.
   d) They can also create a new workout model with all their preferred exercise.

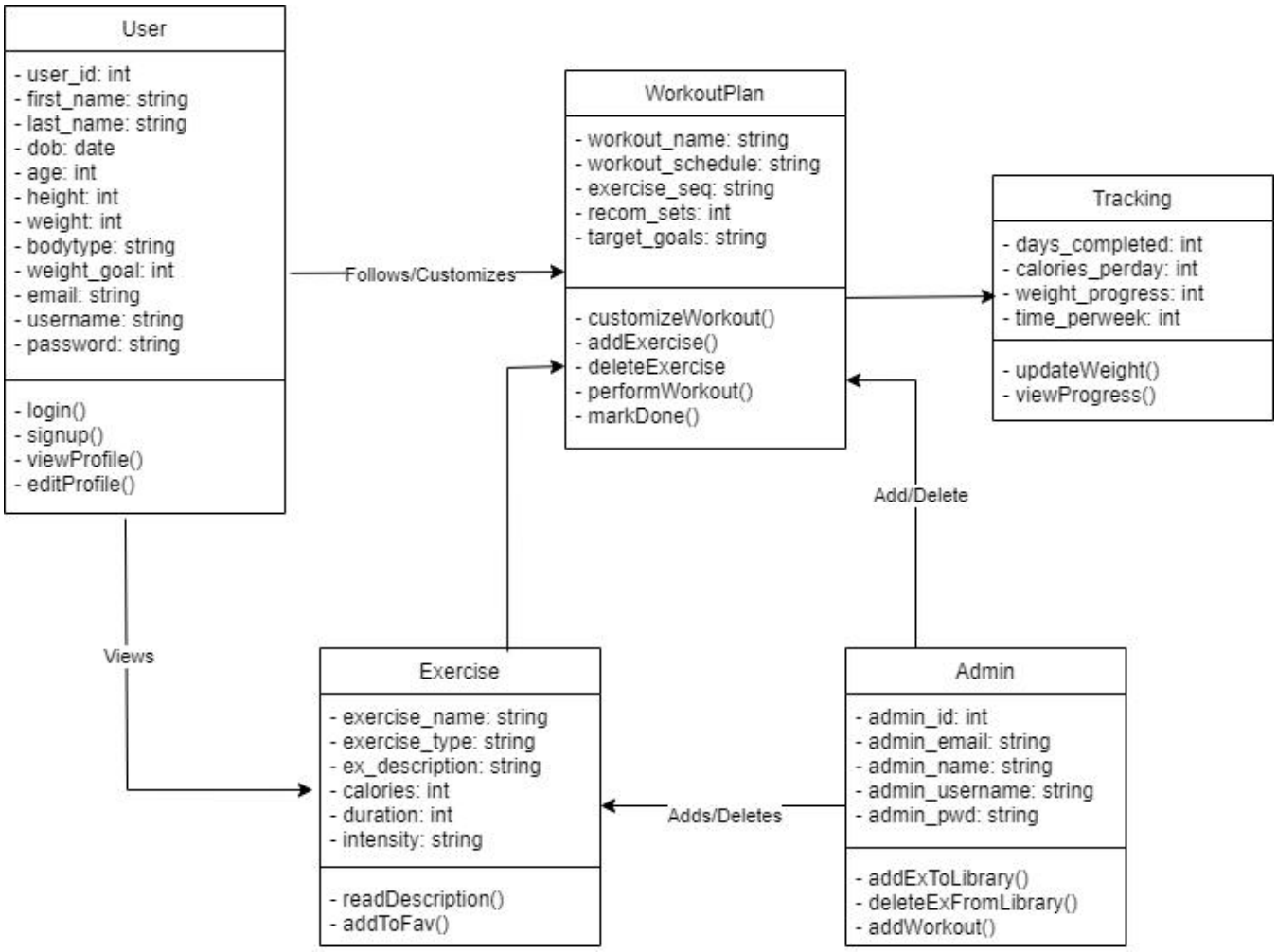
6. Work-out Tracking Module:
   a) The users can review their progress in this module.
   b) The can also update their weight routinely to keep track.

7. Profile Management Module:
   a) Users can view or change their personal details.
   b) Users can also reset their password here.

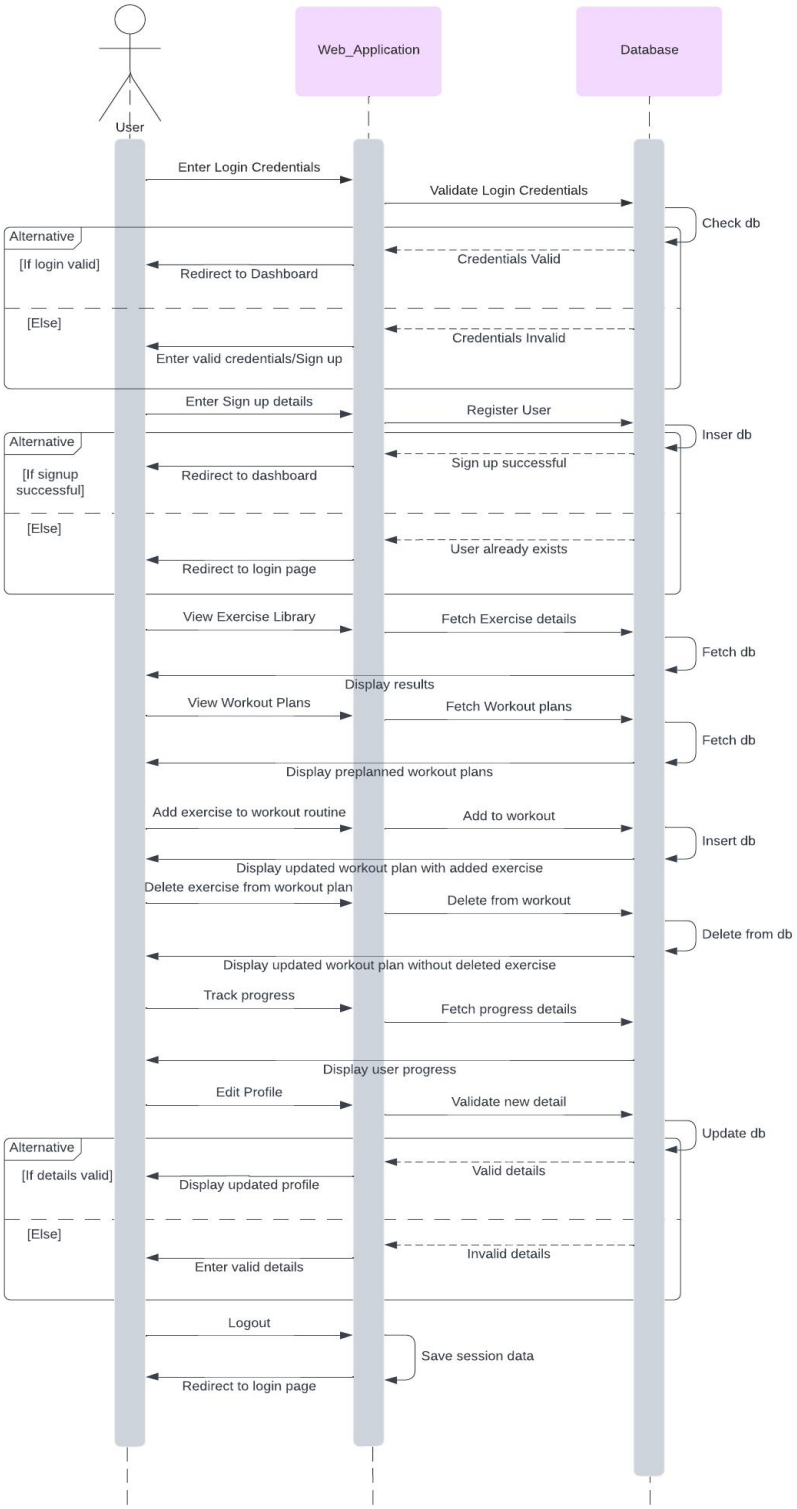
7. Use Case Diagram



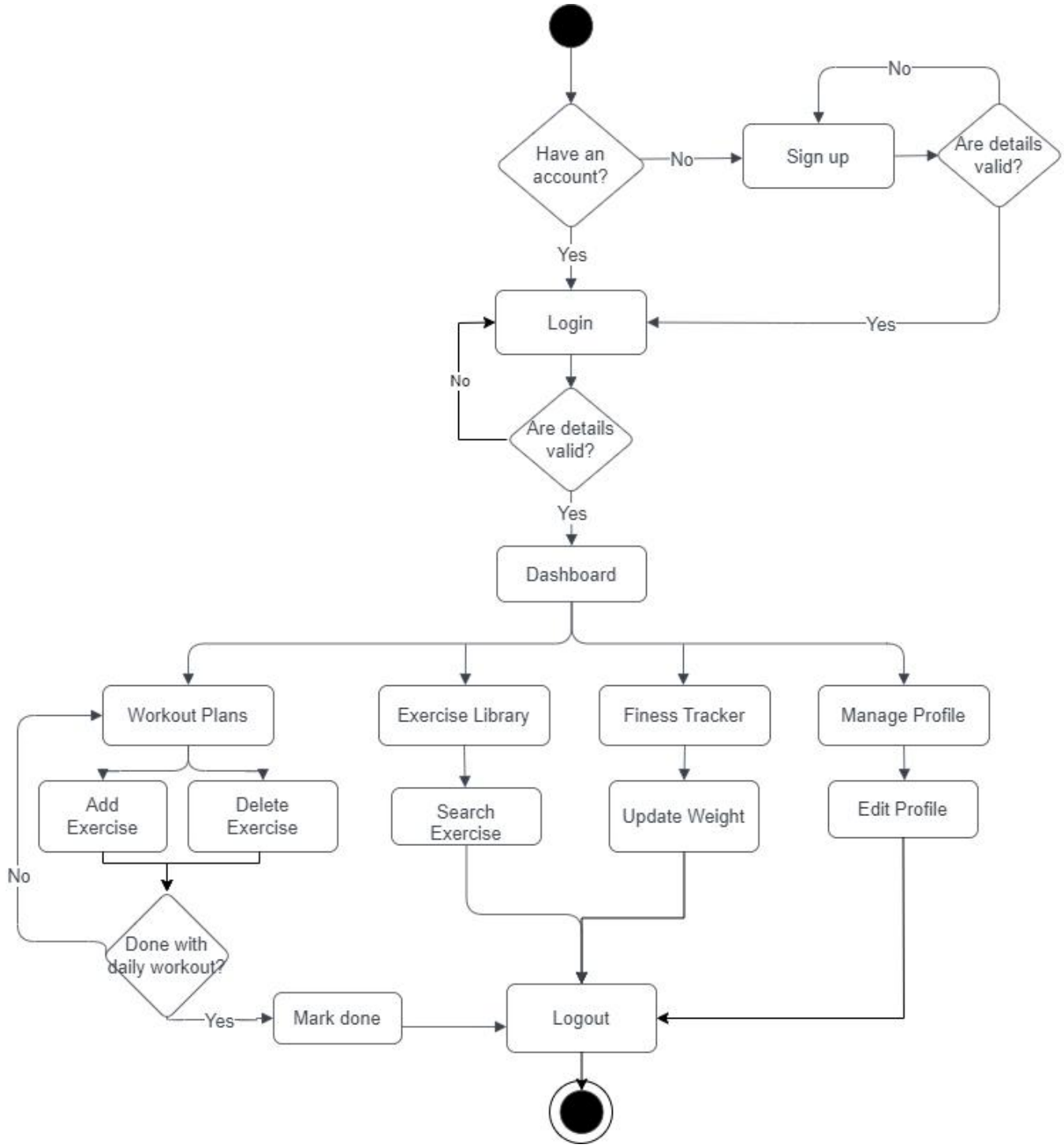
8. Class Diagram



9. Sequence Diagram



10. Flow Chart



11. ER Diagram