Software Requirements and Design Document

For

Group 4

Version 1.1

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1. Overview (5 points)

The gym app is designed to help users track their fitness journey by allowing them to upload daily workout photos, monitor their gym progress, and manage their nutrition. The app will provide a comprehensive platform for users to log their workouts, track their physical progress through photos, and maintain a nutrition tracker to ensure they meet their dietary goals. The app will also include features to visualize progress over time, set fitness goals, and receive reminders to stay consistent. The primary goal is to create a user-friendly, all-in-one fitness companion that motivates users to achieve their fitness goals.

2. Functional Requirements (10 points)

1. ***User Registration and Login (High Priority)*** ○ *The system shall allow users to create an account and log in using email or social media credentials.*
   - ○ *Rationale: Ensures secure access to user data and personalized features.*
2. ***Daily Workout Photo Upload (High Priority)*** ○ *The system shall allow users to upload photos of their daily workouts.* ○ *Rationale: Helps users visually track their physical progress over time.*
3. ***Workout Progress Tracking (High Priority)*** ○ *The system shall allow users to log their workouts, including exercises, sets, reps, and weights.*
   - ○ *Rationale: Enables users to monitor their gym performance and improvements.*
4. ***Nutrition Tracking (High Priority)*** ○ *The system shall allow users to log their daily food intake, including calories, macronutrients (carbs, proteins, fats), and water intake.*
   - ○ *Rationale: Helps users maintain a balanced diet and meet their nutritional goals.*
5. ***Progress Visualization (Medium Priority)*** ○ *The system shall provide charts and graphs to visualize workout and nutrition progress over time.*
   - ○ *Rationale: Motivates users by showing tangible progress.*
6. ***Goal Setting (Medium Priority)*** ○ *The system shall allow users to set fitness and nutrition goals (e.g., target weight, calorie intake).*

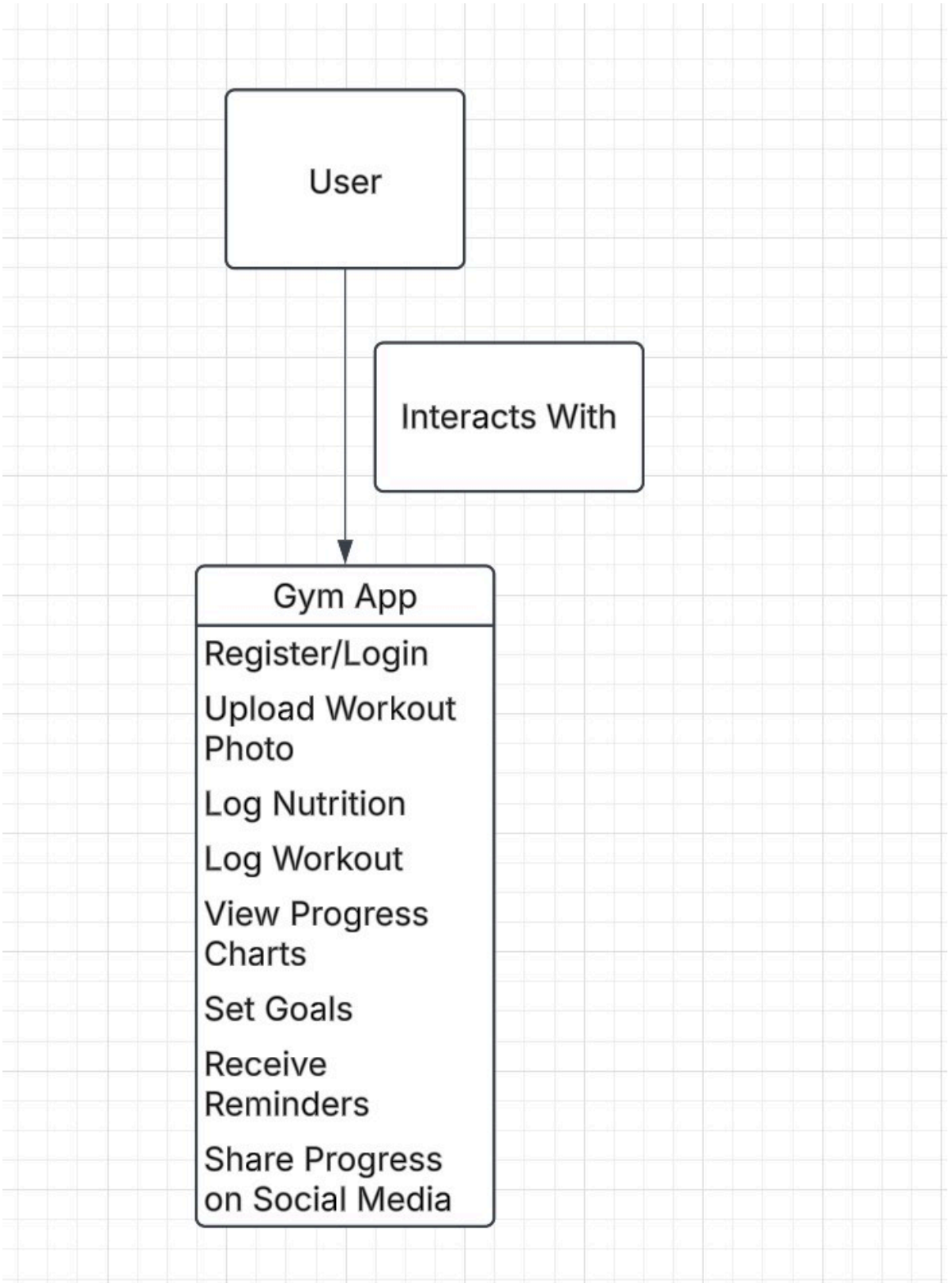
- *Rationale: Helps users stay focused and motivated.*

7. ***Reminders and Notifications (Low Priority)*** *The system shall send reminders to users to log their workouts, meals, and water intake.*
   - *Rationale: Encourages consistency and habit formation.*
8. ***Social Sharing (Low Priority)*** *The system shall allow users to share their progress photos and achievements on social media.*
   - *Rationale: Increases user engagement and motivation through community support.*

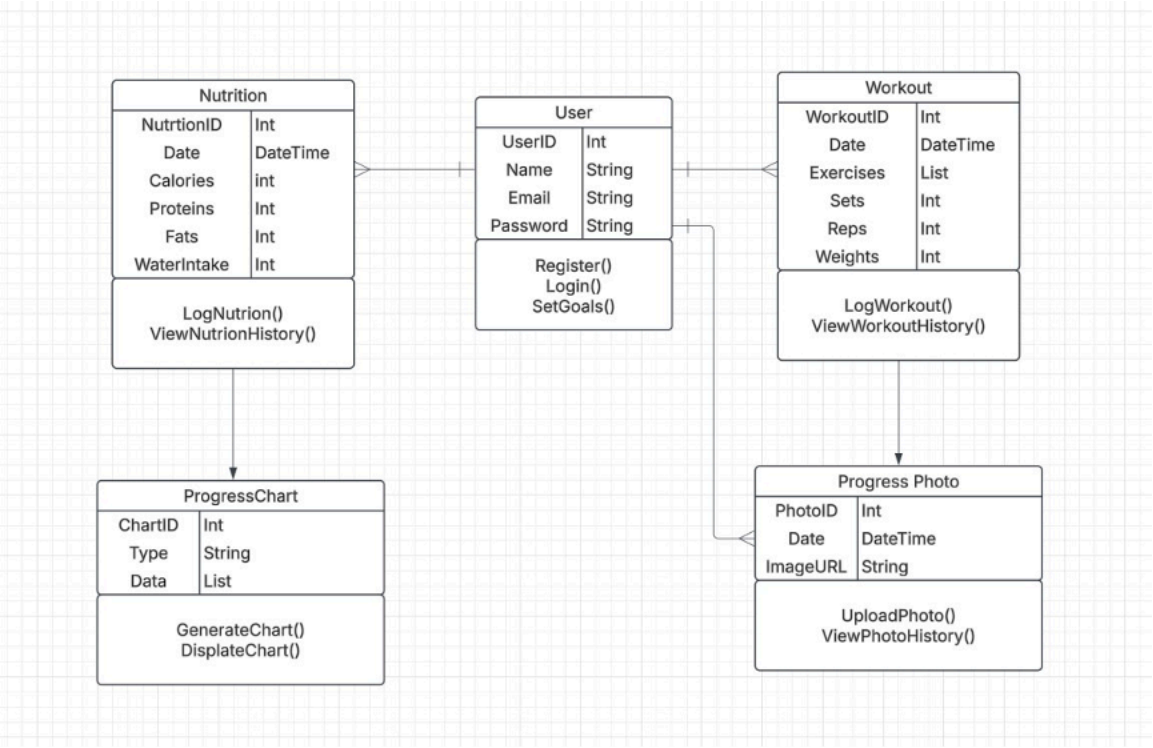
3. Non-functional Requirements (10 points) *1.* ***Performance***

1. `Perfomance`
   - *The App shall load user data within clicking certain buttons*
   - *Rationale; Ensure smooth user experience*
2. ***Security***
   - *The app will encrypt user data such as login credentials both in transit and rest*
   - *Rationale: Protects user privacy and data integrity*
3. ***Reliability***
   - *The app shall have an uptime of 99.9%.*
   - *Rationale: nsures users can access the app whenever needed.*
4. ***Usability***
   - *app will have an intuitive user interface with a learning curve of less than 5 minutes for new users.*
   - *Rationale: Ensures ease of use and adoption.*
5. ***Compatibility***
   - *The app will be compatable with IOS and Android devices*
   - *Rationale: Esnure accessibility for a wide range of users*
6. ***Scalability***
   - *The app will be able to support a large amount of users without performance costs*
   - *Rationale: Ensure the app can handle growth in user base*

4. Use Case Diagram (10 points)



5. Class Diagram and/or Sequence Diagrams (15 points)



Sequence Diagrams
Sequence Diagram 1: Log Workout
User -> System: Select "Log Workout"
System -> User: Display workout logging form
User -> System: Enter workout details
System -> Database: Save workout data
Database -> System: Confirm data saved
System -> User: Confirm workout logged

Sequence Diagram 2: Upload Workout Photo

User -> System: Select "Upload Photo"
System -> User: Open camera/gallery
User -> System: Select/upload photo
System -> Database: Save photo metadata
Database -> System: Confirm data saved
System -> User: Confirm photo uploaded

Sequence Diagram 3: Log Nutrition

User -> System: Select "Log Nutrition"
System -> User: Display nutrition logging form
User -> System: Enter food details
System -> Database: Save nutrition data
Database -> System: Confirm data saved
System -> User: Confirm nutrition logged

6. Operating Environment (5 points)

Hardware Platform: Mobile devices (iOS and Android smartphones and tablets).
Operating System: iOS 14+ and Android 10+.
Other Software: The app will integrate with social media platforms (e.g., Facebook, Instagram) for sharing progress and will use cloud storage for photo and data backup.

7. Assumptions and Dependencies (5 points) Assumptions

1. Users have access to a Computer that the they ccan upload photos from
2. Users have a stable internet connection for logging data and syncing progress.

. **Dependencies**

1. **APIs:** Nutrional API so that users have a large database of foods

2. **Local Storage:** Using SQLite, we are locally storing our data on the users main appdata
3. **Nutrition Database**: Dependency on a third-party nutrition database for accurate calorie and macronutrient information.