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Vellore Institute of Technology

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Smart Workout Planner

CSI1007 – Software Engineering Principles Laboratory

23MID0023

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Description of the Project

This project aims to develop a user-friendly workout planner app for individuals based on their Body Mass Index (BMI). The app helps users achieve their fitness goals by offering pre-planned workout routines, tracking meal intake, and providing personalized insights. It also includes a rewards system for motivation, notifications for reminders, and secure account management. Users can choose a premium subscription to remove ads and control ad frequency. The app is designed to enhance user engagement through a clean interface, meal and workout tracking, and customizable features like light/dark mode.

Impact of the developing Project

Economic Impact:
- Offers a premium subscription model that generates revenue for developers.
- Provides potential partnerships with fitness brands and food tracking services, opening additional revenue streams.

Social Impact:
- Encourages users to lead healthier lifestyles by setting achievable fitness goals and tracking progress.
- Promotes awareness about balanced nutrition and sustainable workout habits, positively impacting community well-being.

Technological Impact:
- Introduces an innovative, personalized app that has user security, meal tracking, and fitness planning integrated into a single platform.
- Leverages cloud-based data synchronization, enabling seamless access across multiple devices for users.

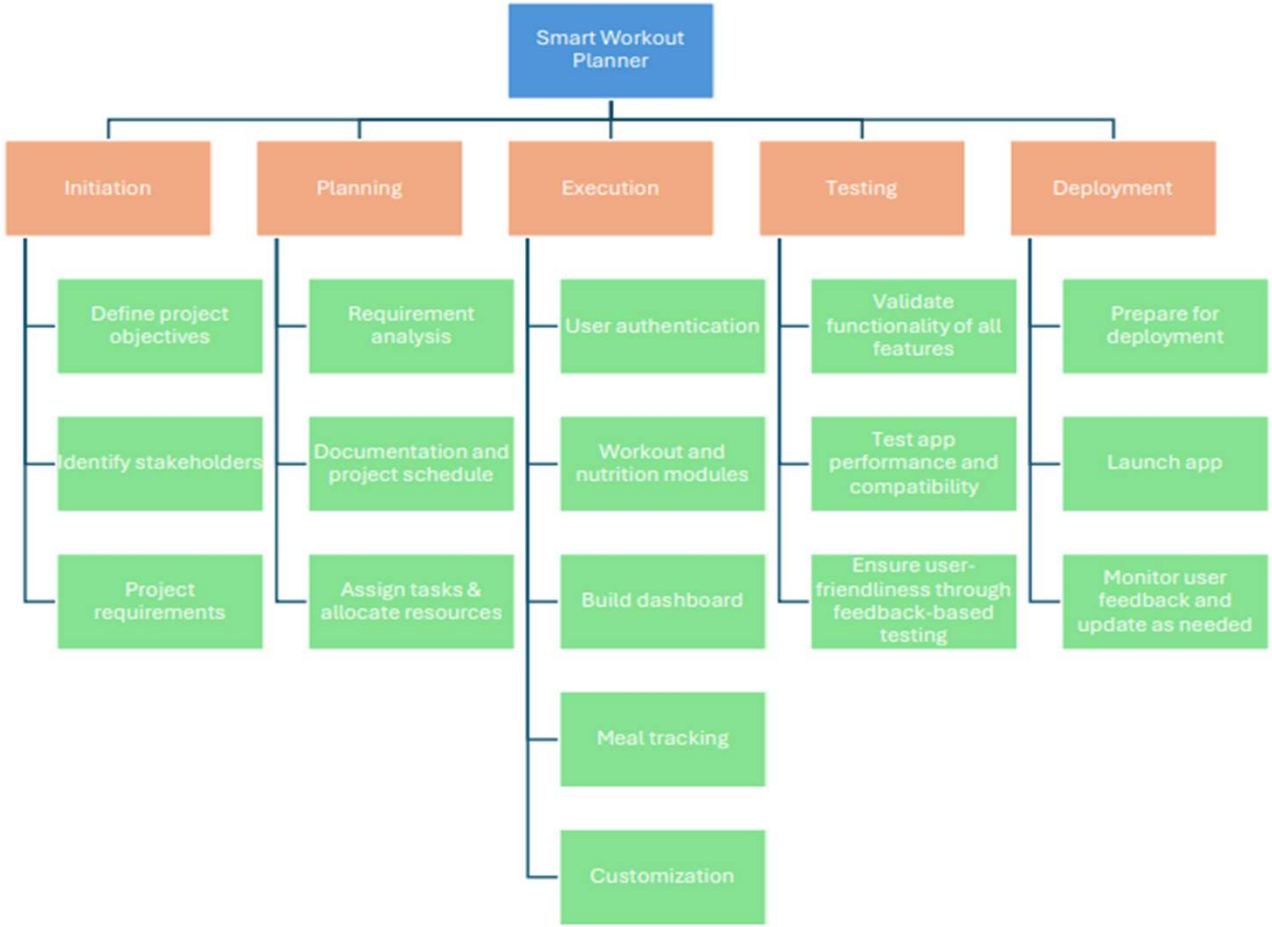
Environmental Impact:
- Digital-only format reduces paper-based fitness tracking methods, making it eco-friendly.
- Encourages sustainable living by promoting healthier eating habits and waste reduction through conscious meal planning.

Scope of the Project

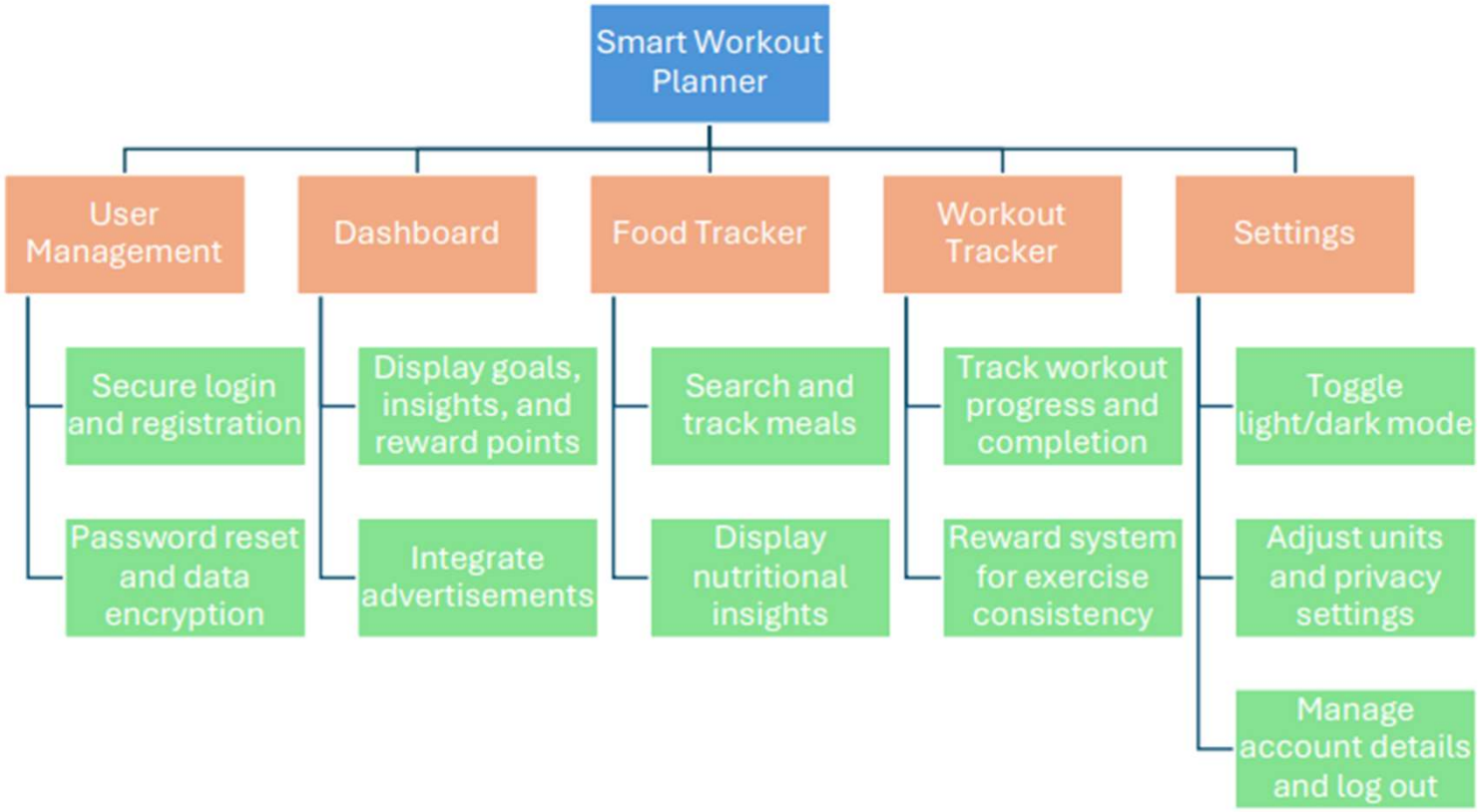
The app calculates BMI, provides fitness and nutritional guidance tailored to users' goals (e.g., becoming an athlete, maintaining a healthy body), and helps track meals and workouts. Additional features include reminders, a reward system for motivation, and premium options to remove ads and unlock advanced features. Real-time feedback and insights based on user data, ensuring an adaptive and personalized experience. A progress tracking system that allows users to view past workouts, meal logs, and reward achievements. The application will also integrate data analytics to suggest diet improvements and predict performance trends based on past user activity.

Work Breakdown Structure

Process-Based Work Breakdown Structure:



Product-Based Work Breakdown Structure:



SRS Documentation

Functional Requirements

User Authentication

Secure login with encrypted data storage, user registration, and password reset features.

BMI Calculation and Goal Setting

Calculates BMI based on user inputs and suggests fitness plans aligned with goals.

Meal Tracker and Insights

Tracks meals through a searchable database and provides feedback on nutritional content.

Reward System

Offers points for completing workouts and tracking meals, redeemable for discounts or vouchers.

Premium Subscription

Unlocks advanced features such as an ad-free experience, AI-based progress insights, and priority customer support.

Non-Functional Requirements

Performance

The app should handle up to 5,000 concurrent users.

Safety

Ensure data privacy through AES encryption and periodic security audits.

Security

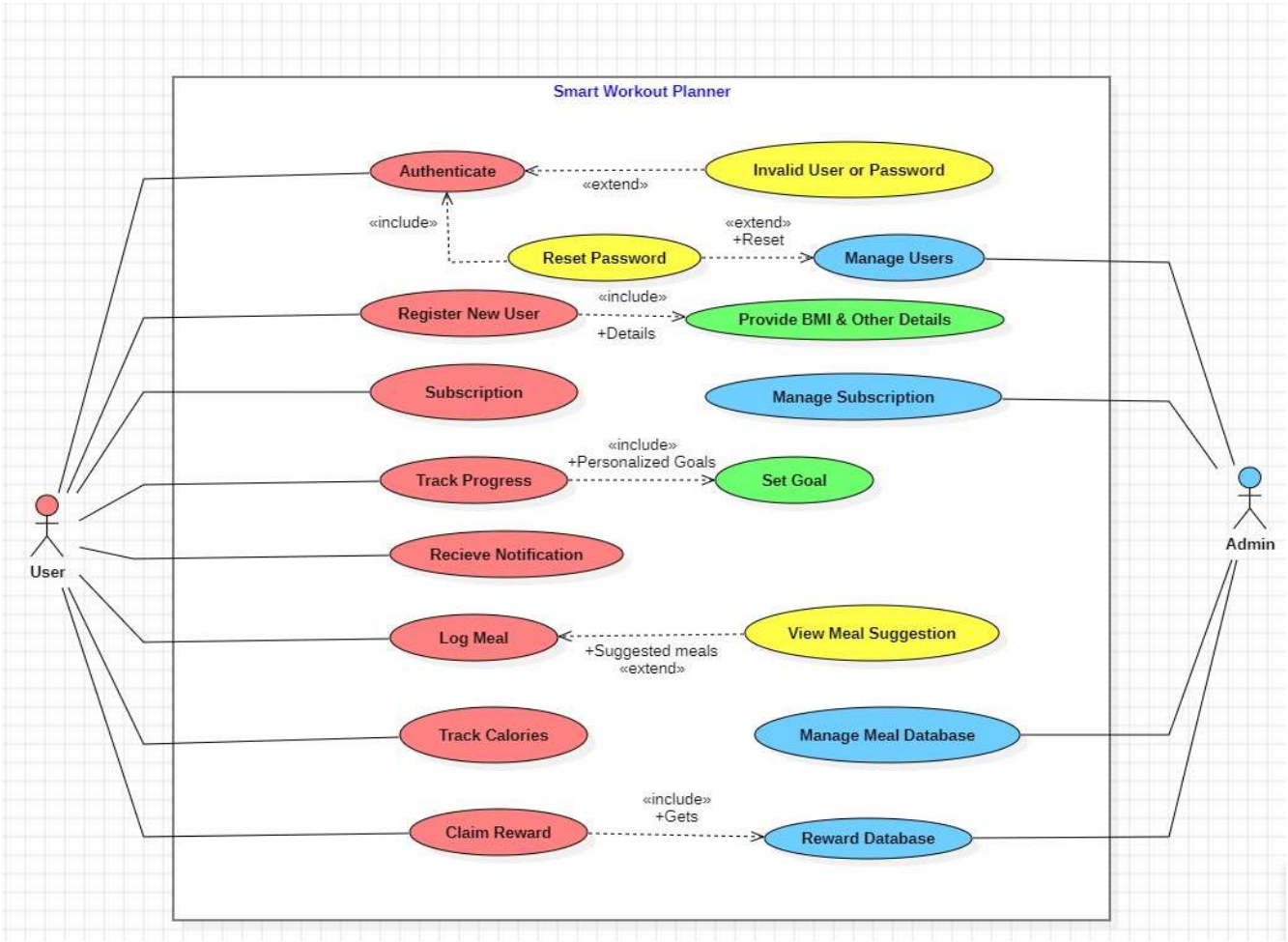
Use SSL encryption for all data transfers between user devices and cloud servers.

Scalability

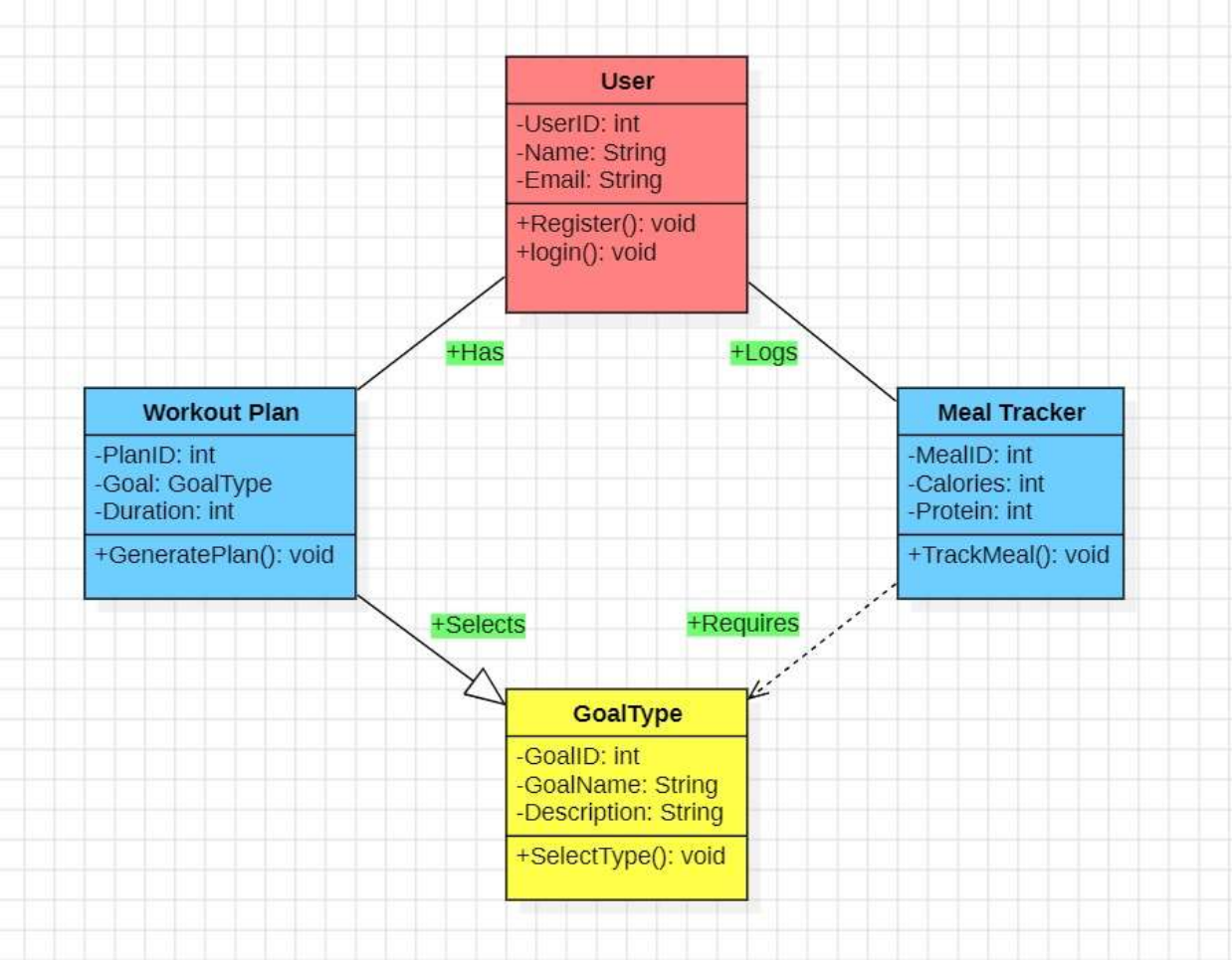
Support for AI-based personalized training plans in future updates.

UML - Diagrams

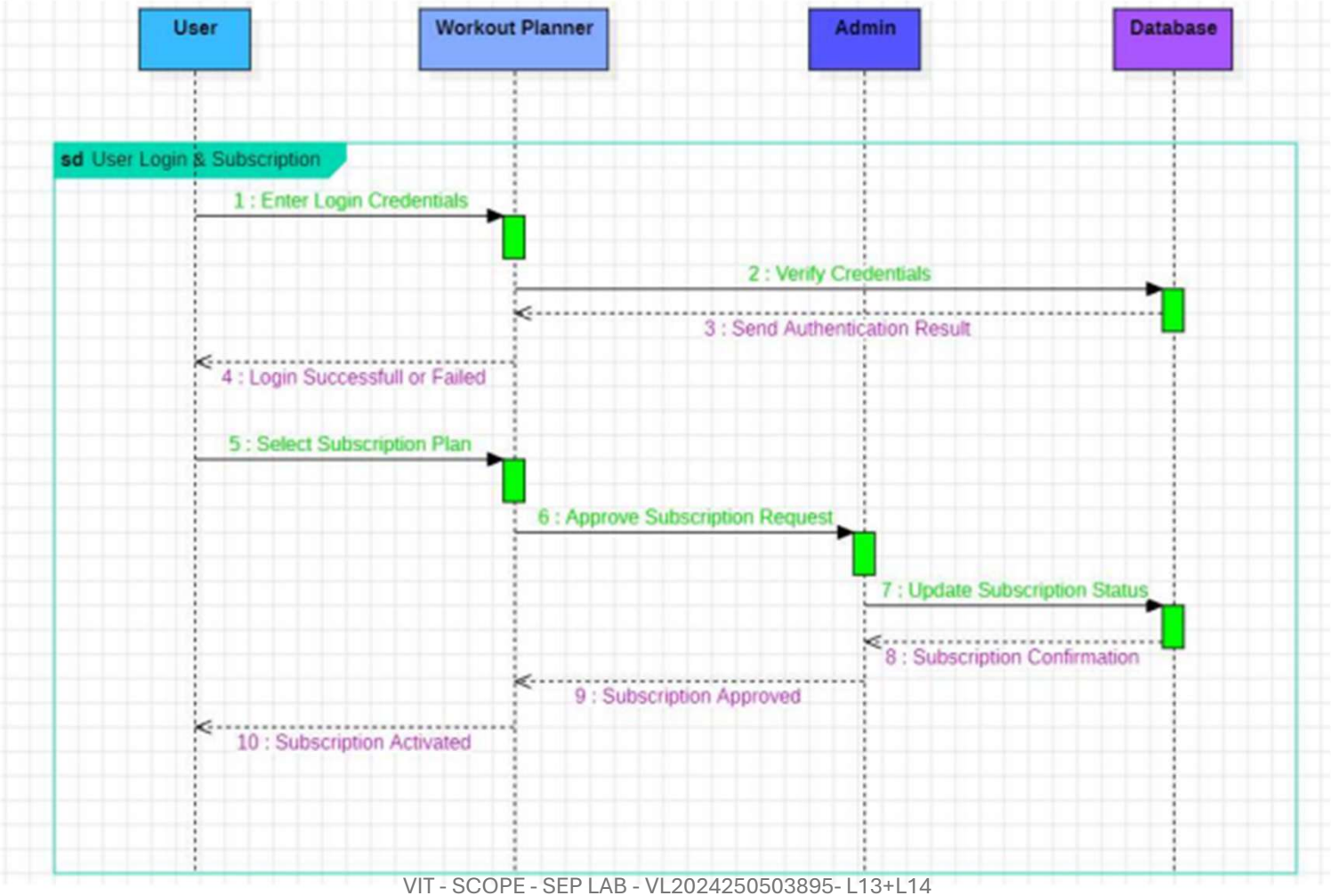
Use-case Diagram



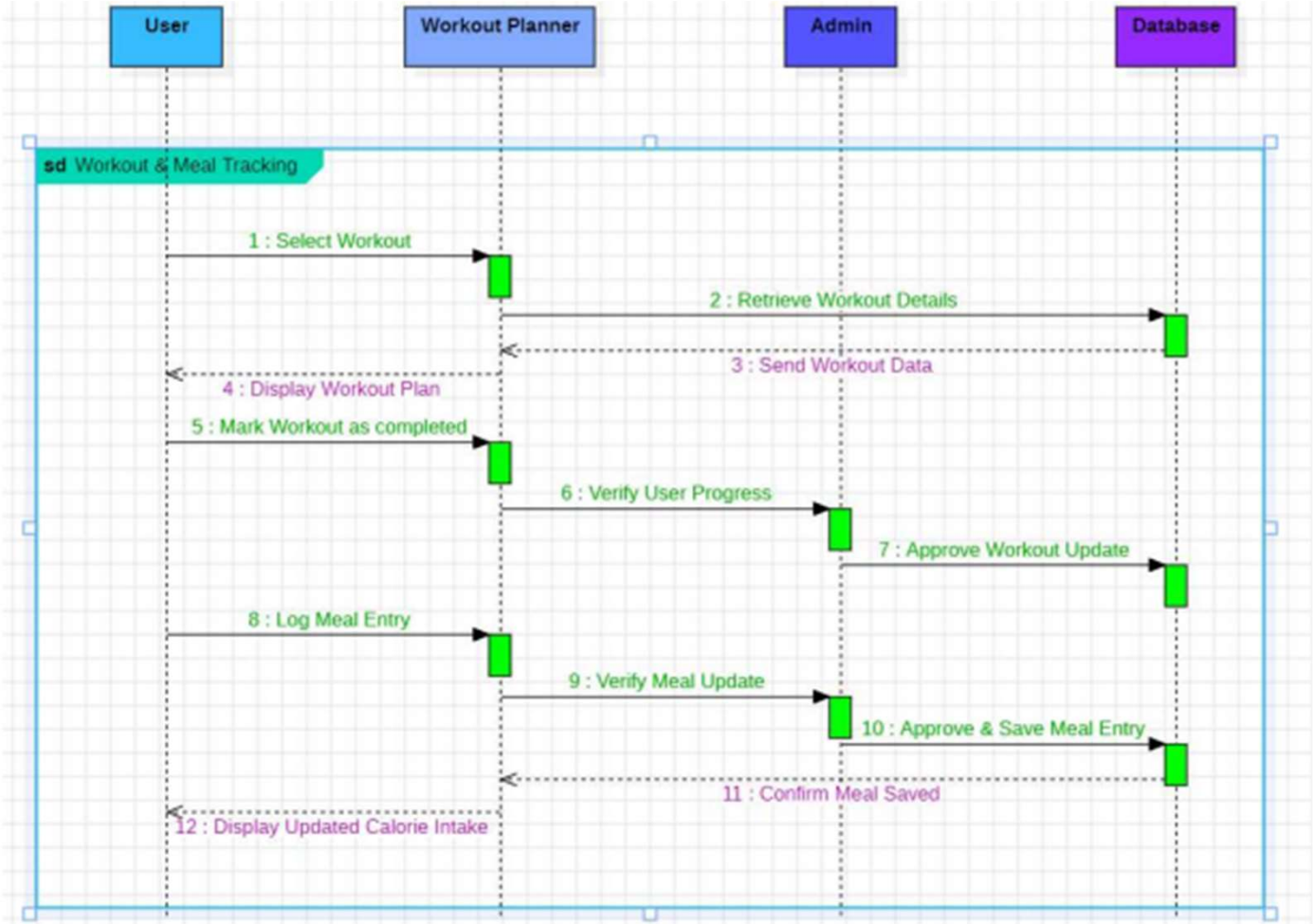
Class Diagram



Sequence Diagram 1: User Login & Subscription Handling



Sequence Diagram 2: Workout & Meal Tracking



Testing

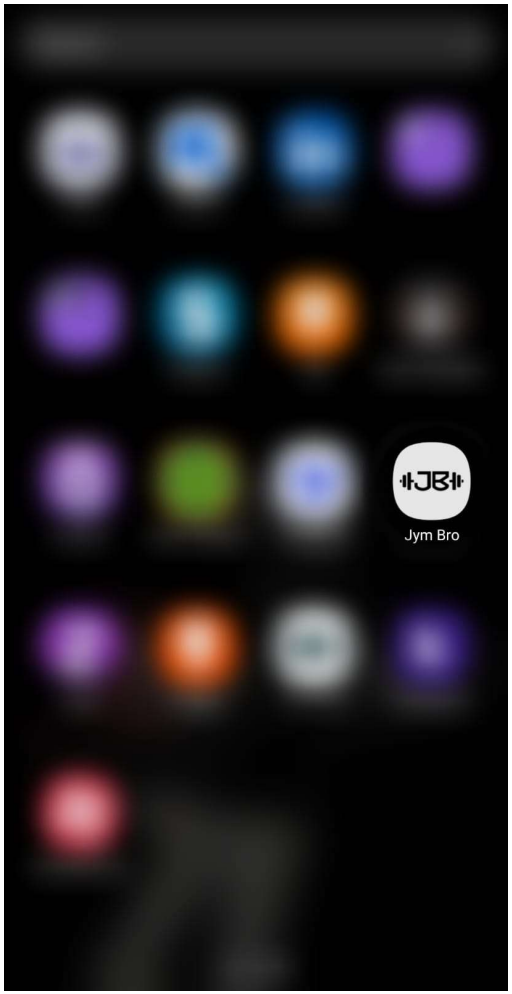
Test Case 1: User Login Verification

Test Case ID:	T1
Test Scenario:	Verify login functionality with valid and invalid credentials.
Test Case Description:	Ensure the login system allows users to log in with correct credentials and denies access for incorrect inputs.
Test Steps:	1. Open the login page. 2. Enter a username. 3. Enter a password. 4. Click the "Login" button.
Test Data:	**Valid Case:** Username: user123, Password: Fit@2025 **Invalid Case 1:** Username: wronguser, Password: Fit@2025 **Invalid Case 2:** Username: user123, Password: wrongpass
Test Expected Result:	**Valid:** User is redirected to the dashboard. **Invalid:** Error message "Invalid Username or Password" appears.
Actual Result:	**As Expected:** System correctly logs in valid users and blocks invalid attempts.
Pass/Fail:	**Pass**

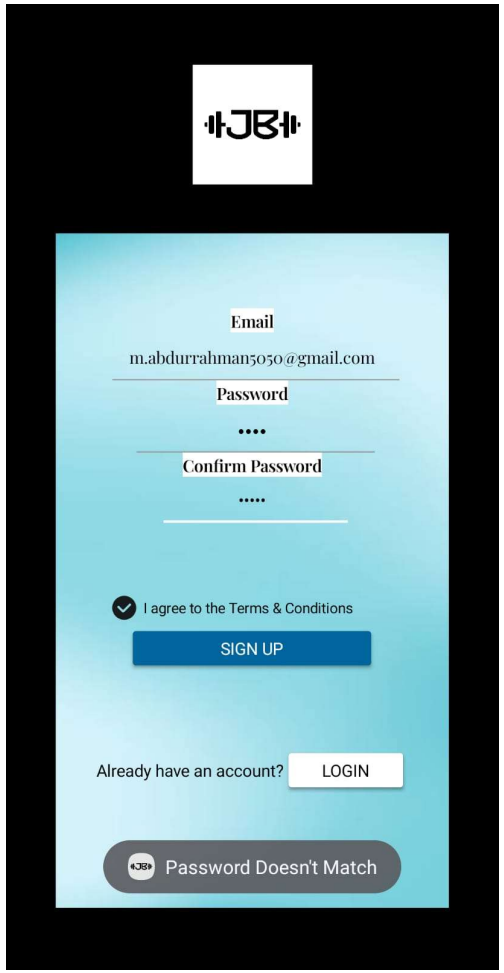
Test Case 2: Workout & Meal Tracking

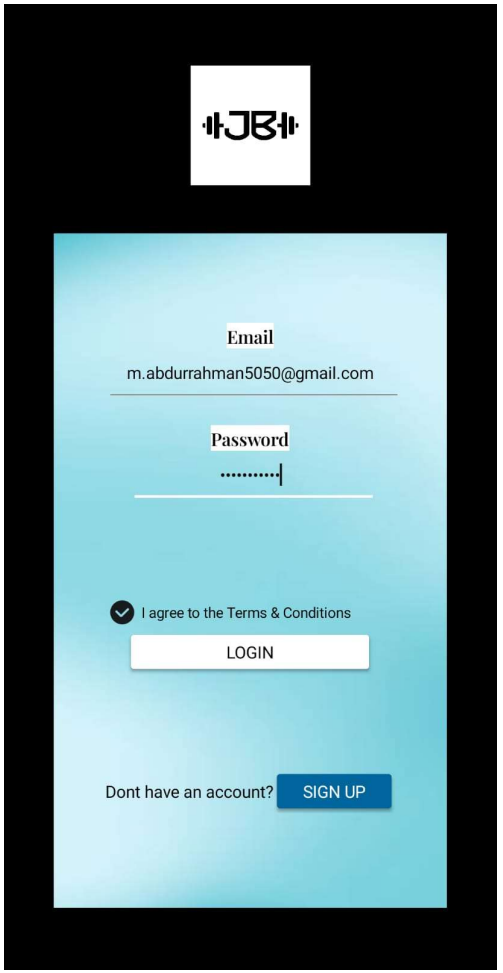
Test Case ID	T2
Test Scenario	Verify that users can successfully log workouts and track meals.
Test Case Description	Ensure that when users mark workouts as completed and log meals, the system updates progress correctly.
Test Steps	1. Open the app dashboard. 2. Select a workout and mark it as "Completed". 3. Go to Meal Tracker and add a meal. 4. Save meal entry. 5. Check progress stats.
Test Data	**Workout:** "Full Body Strength" **Meal:** "Grilled Chicken Salad - 450 Calories"
Test Expected Result	Workout marked as completed. Meal saved in the tracker. Progress statistics updated.
Actual Result	✅ **As Expected:** Workout and meal are logged successfully, progress updates correctly.
Pass/Fail	✅ **Pass**

Project – UI Screenshots

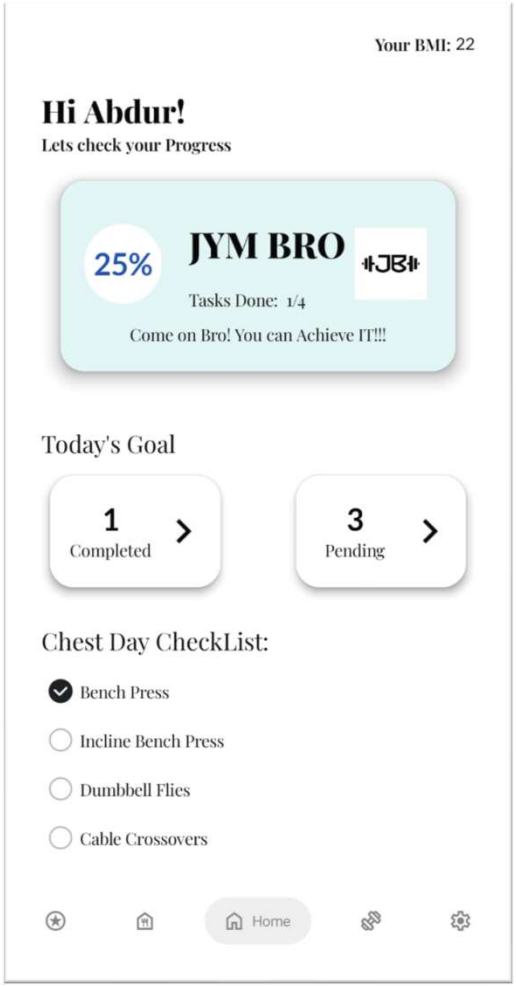

Jym Bro

Authentication

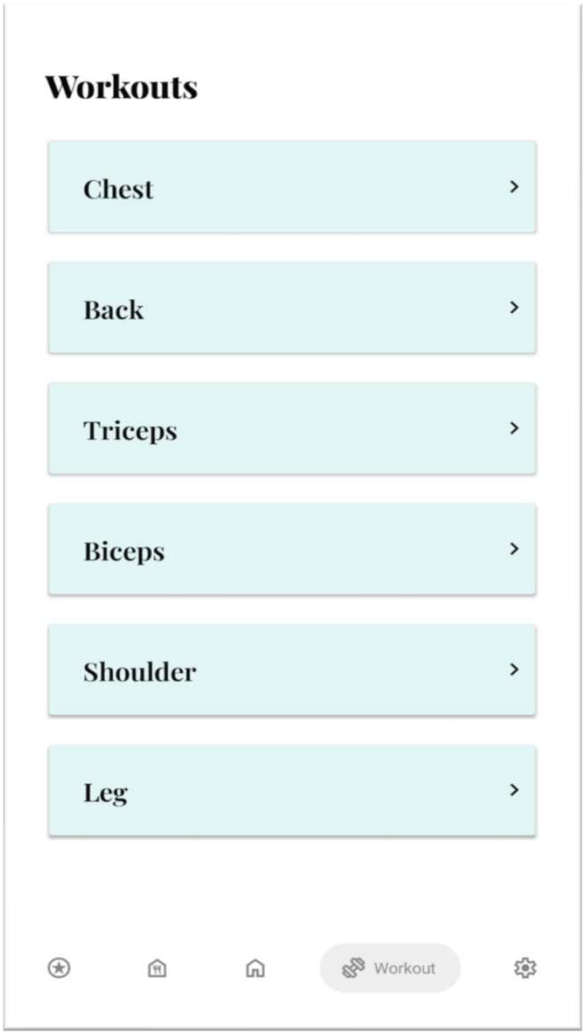




Home Screen


Your BMI: 22
Hi Abdur!
Lets check your Progress
25%
JYM BRO
Tasks Done: 1/4
Come on Bro! You can Achieve IT!!!
Today's Goal
1
Completed
3
Pending
Chest Day CheckList:
Bench Press
Incline Bench Press
Dumbbell Flies
Cable Crossovers
Home

Workout Screen



Chest Workout