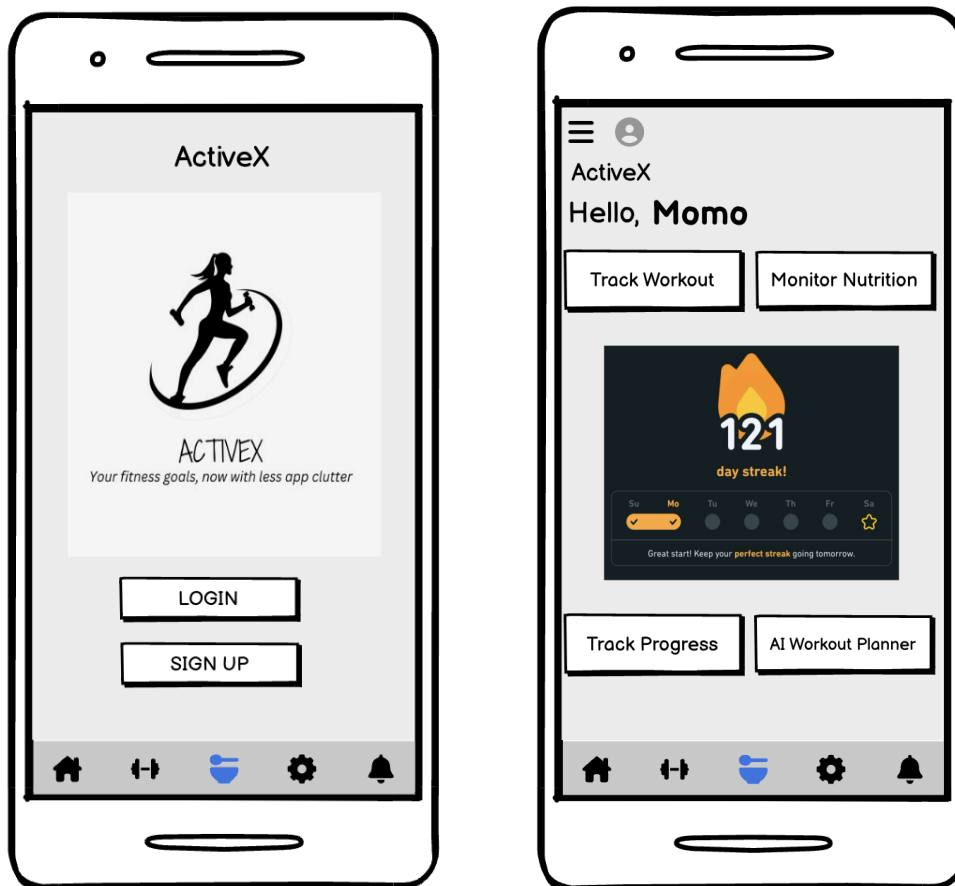Shamsi Mumtahina Momo
COSI 125A
HW3
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ActiveX: Comprehensive Fitness Tracking Application

App Overview

ActiveX is an all-in-one mobile fitness tracking application designed to provide users with a comprehensive platform for managing their health and wellness. Unlike other apps that focus solely on either workout tracking or nutrition logging, ActiveX seamlessly integrates multiple essential features into a single, user-friendly interface. Users can:

- Track fitness progress through detailed body-part-specific graphs.
- Log daily nutrition intake.
- Stay motivated with a streak system inspired by Duolingo.
- Customize settings, including dark mode, calorie count toggles, and unit preferences (metric or imperial).

By combining these features, ActiveX helps users stay on top of their fitness journey with a structured and engaging approach.

Task Analysis

1. Sign Up and Log In

- Preconditions: The user must install the app and have an internet connection.
- Description: New users create an account by entering details such as name, email, weight, height, and password. Returning users log in using their credentials.
- User Needs: Ensures a personalized experience and data tracking.

2. Log Daily Nutrition

- Preconditions: The user must be logged in and have access to the nutrition log.
- Description: Users input meals, select food items from a database, and track their calorie intake.
- User Needs: Helps users maintain a balanced diet and manage caloric intake.

3. Track Fitness Progress

- Preconditions: The user must have logged multiple workout sessions.
- Description: The app presents progress tracking through graphs that focus on specific body parts (belly, legs, arms).
- User Needs: Provides visual feedback and motivation for users.

4. Maintain Streaks for Motivation

- Preconditions: The user must complete daily fitness goals.
- Description: A streak feature, similar to Duolingo, rewards users for consistent activity and nutrition logging.
- User Needs: Encourages consistency and long-term engagement.

5. Customize Settings

- Preconditions: The user must navigate to the settings page.
- Description: Users can enable dark mode, toggle calorie tracking, and switch between metric and imperial units.
- User Needs: Allows personalization for accessibility and user preference.

6. AI Workout Planner

- Preconditions: The user must have logged at least one previous workout session.
- Description: The AI workout planner suggests workout sets based on previous days, ensuring proper rest and recovery. It also considers:

- ○ Muscle group fatigue to prevent overuse.
  - ○ Workout variety to keep routines engaging.
  - ○ User feedback on difficulty to tailor workout intensity.
- User Needs: Helps users optimize workouts while preventing overtraining and maintaining a diverse and engaging fitness routine.

Semantic Analysis

Functions and Parameters

1. User Authentication

- Parameters: Email, password (or new user details for sign-up).
- Description: Logs users into their accounts or creates new ones.
- Feedback: Confirmation message and redirection to the home screen.
- Errors: Incorrect credentials prompt an error message.

2. Add a Meal to Nutrition Log

- Parameters: Food item, quantity, optional calorie count.
- Description: Logs meal intake for daily tracking.
- Feedback: Displays updated calorie count and confirms entry.
- Errors: Invalid input triggers an error message.

3. Track Progress

- Parameters: Time period selection (daily, weekly, monthly), body part focus.
- Description: Generates graphs based on recorded data.
- Feedback: Displays graphical trends of progress.
- Errors: Lack of data results in a notification.

4. Update Streak Feature

- Parameters: User activity completion.
- Description: Updates streak counter for continued engagement.
- Feedback: Displays streak progress and congratulatory messages.
- Errors: Missing activity results in a streak reset notification.

5. Modify Settings

- Parameters: Theme (light/dark), calorie tracking (on/off), units (metric/lb).
- Description: Updates user preferences.
- Feedback: Displays confirmation of changes.
- Errors: Invalid input triggers an error message.

6. AI Workout Planner

- Parameters: Previous workout history, muscle group fatigue level, workout variety, user difficulty feedback.
- Description: Recommends workout sets while ensuring proper rest and muscle recovery.
- Feedback: Displays suggested workout sets and a rationale for the recommendations.
- Errors: Lack of workout history results in a default beginner workout plan.


Lexical Analysis

States:

- Home Screen – Displays daily activity, nutrition log, and streak counter.
- Sign-Up/Login Screen – Allows new users to register or existing users to log in.
- Nutrition Log Page – Provides meal entry and calorie tracking.
- Progress Tracking Page – Displays body-specific graphs of fitness progress.
- Streak Display Page – Shows daily consistency and motivational elements.
- Settings Page – Allows customization of user preferences.
- Workout Tracking Page – Logs workouts and provides real-time tracking.

Transitions:

- Opening the App: Device home screen → App launch screen → Login/Sign-up screen
- Logging In or Signing Up: Login/Sign-up screen → Home screen (successful login)
- Navigating to Nutrition Log: Home screen → Nutrition log page
- Logging a Meal: Nutrition log page → Updated daily intake view within the nutrition log
- Viewing Progress Tracking: Home screen → Progress tracking page
- Checking Streaks: Home screen → Streak tracking page
- Modifying Settings: Any screen → Settings menu
- Starting a Workout: Home screen → Workout tracking page
- Completing a Workout: Workout tracking page → Updated progress tracking page
- Using AI Workout Planner: Workout tracking page → AI-generated workout set suggestions → Updated progress tracking page
- Logging Out: Any screen → Settings menu → Login/Sign-up screen

Mockups:

- **Sign up/Login and Home Screen:** Overview of the app
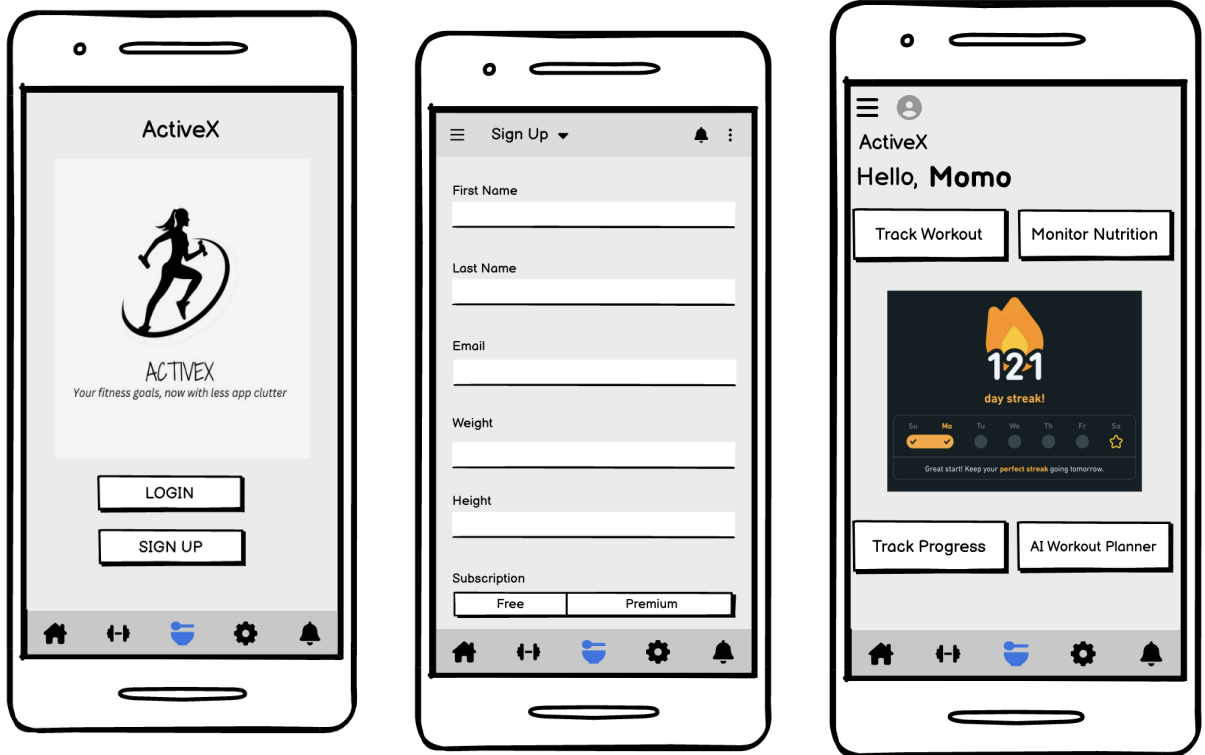
- **Workout Progress Tracking and AI Workout Planner:** Shows the workout progress and the AI assistant recommends a workout routine for the day based on it.
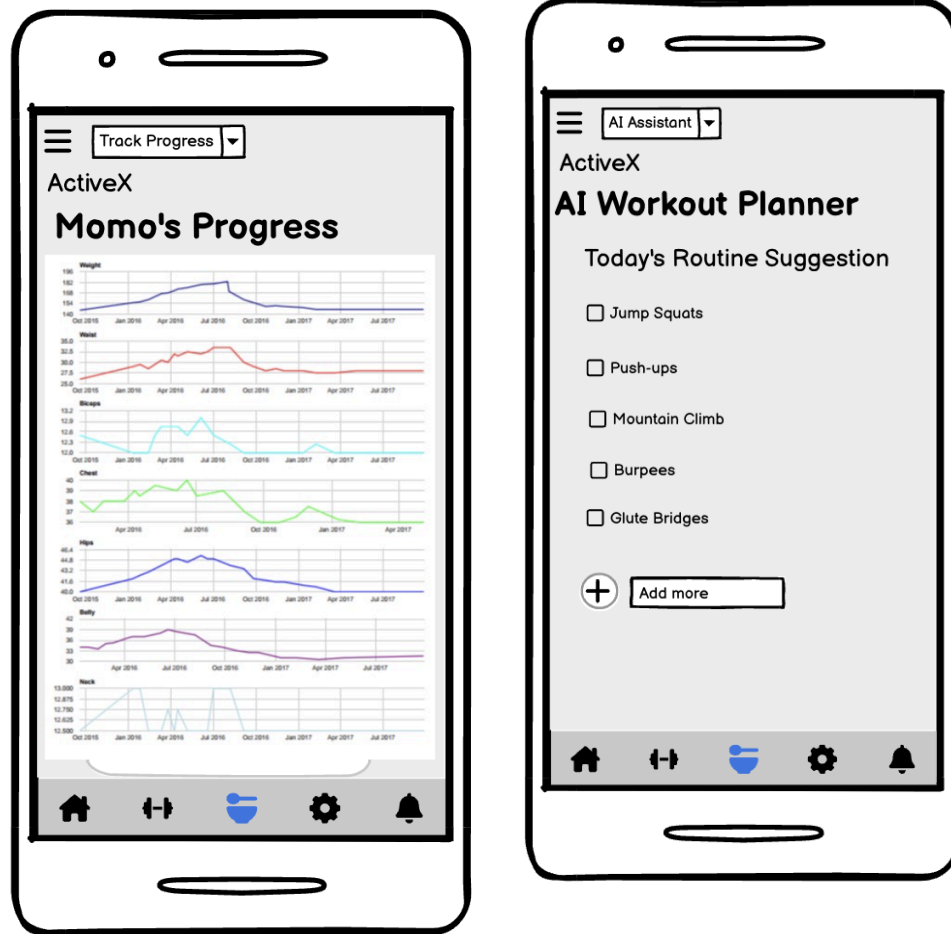
- **Nutrition Tracking**: Interface for food logging

- Customizable Options: Allows users to customize the interface of the app, and to sync it with their calendar.

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6. Usability Testing and Reflection Usability Testing Summary:

● Participants: Noah (pseudonym) and Arthur (pseudonym)

● Testing Method: Conducted usability tasks in person

● Key Findings:

- Strengths:
  1. The AI workout planner was appreciated for its personalized approach, helping users optimize workouts based on previous activity and recovery needs. However, the AI feature was viewed as an enhancement rather than the main selling point.
  2. The streamlined design of ActiveX resonated with users who prefer a no-frills, straightforward experience focused solely on their physical health journey.
- Weaknesses:

1. The notification system could be more interactive, as users missed motivation-driven cues or progress updates in some areas (like streaks or workout completion).

-Suggested Fixes:

1. Refine the app's navigation flow to ensure easier transitions between sections, especially between workouts and nutrition logging. Consider implementing a bottom navigation bar or swipe gestures for quicker access.
2. Introduce more engaging visual elements or micro-interactions to give the app a sense of personality, enhancing user engagement without overwhelming the core functionality.
3. Improve the notification system to provide more immediate feedback on activities, progress, and streaks, creating a more rewarding user experience.