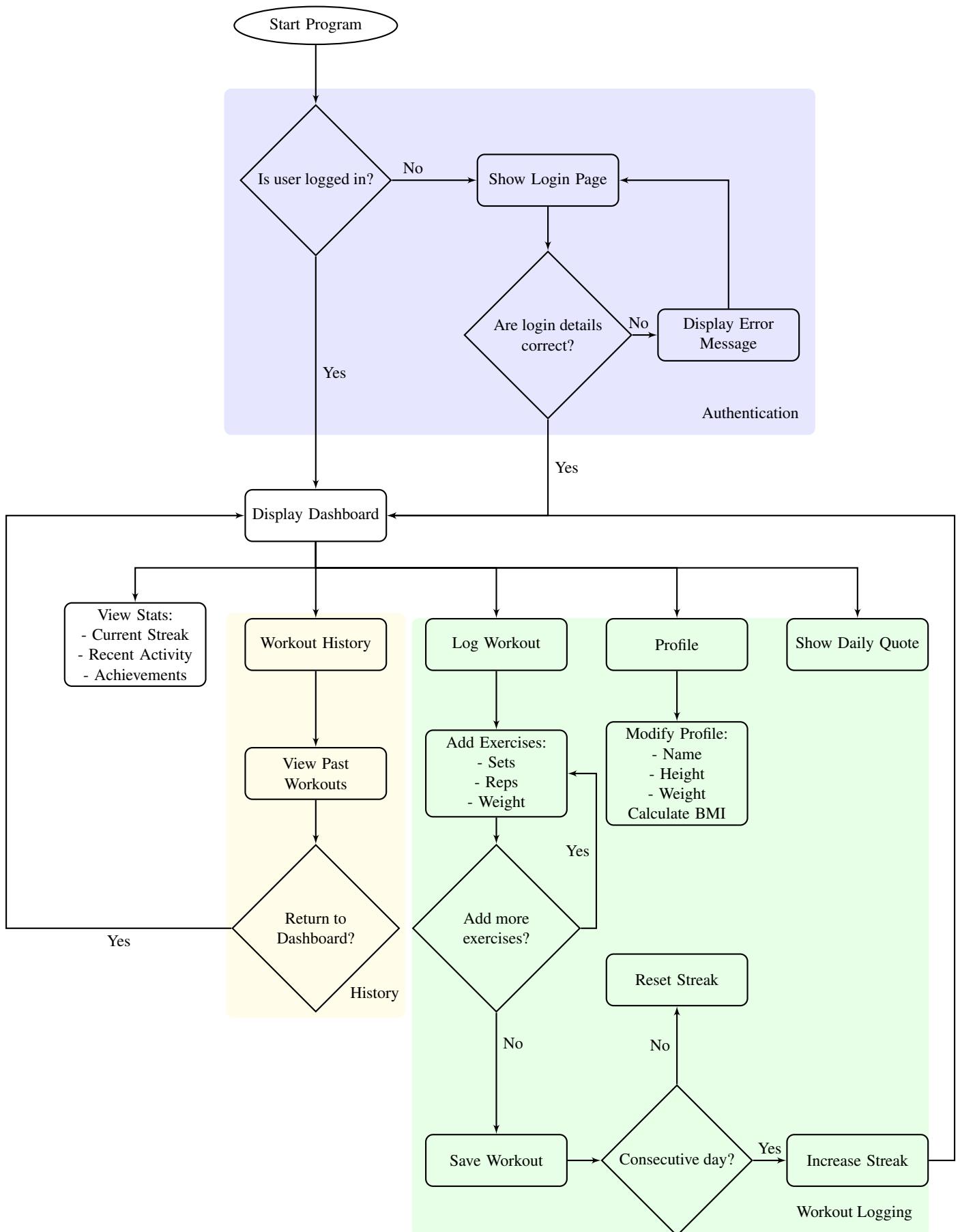
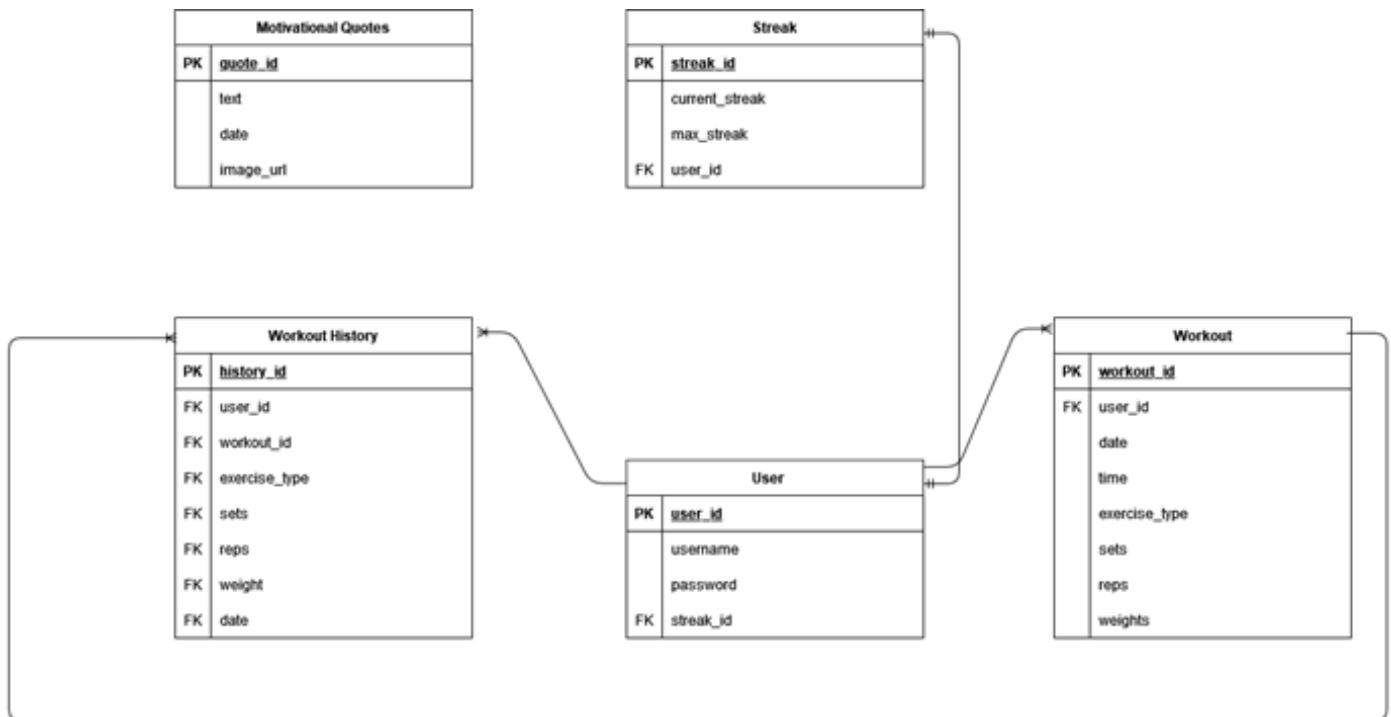


Criterion B - Design

1 Program Overview

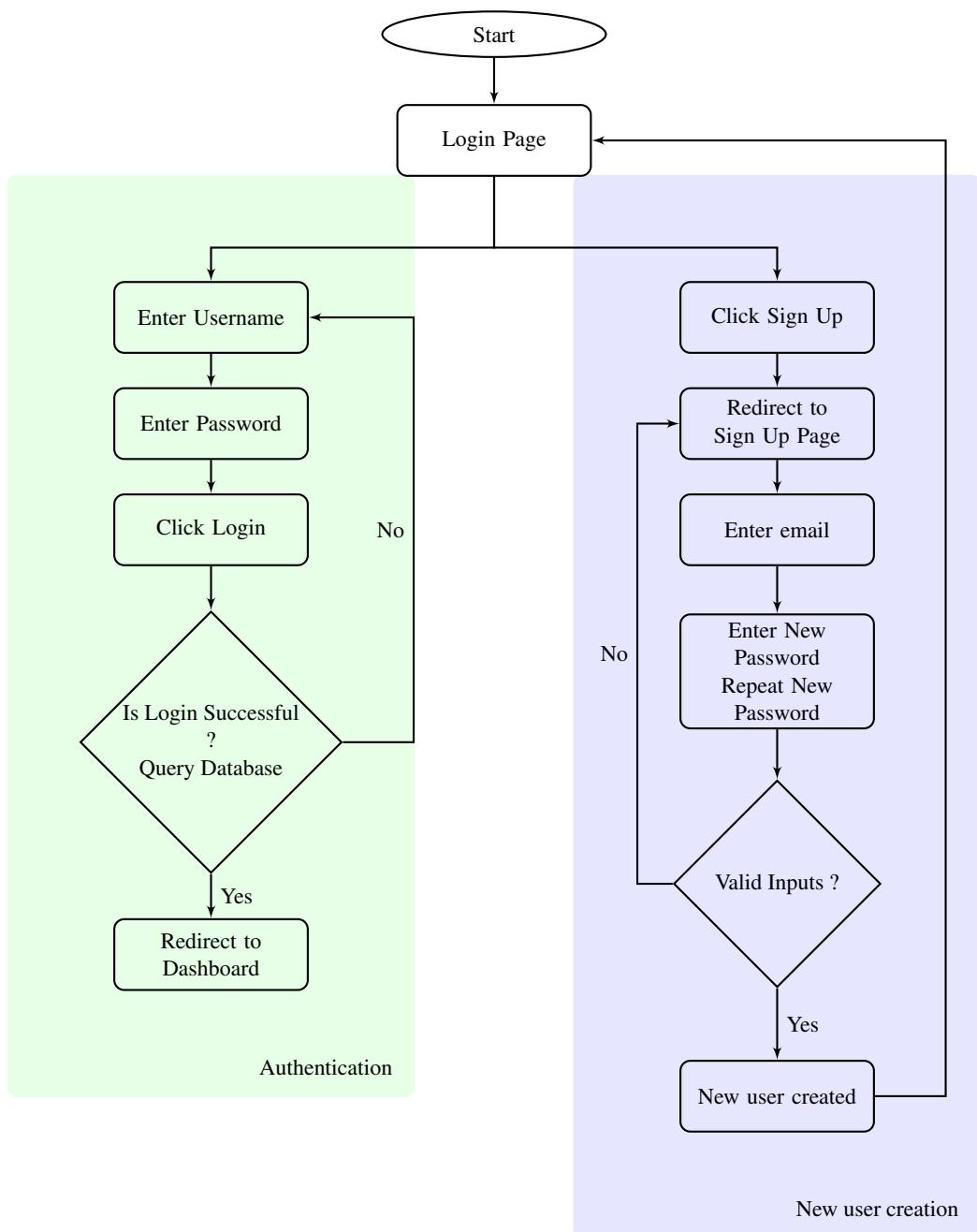


2 Entity Relation Diagram

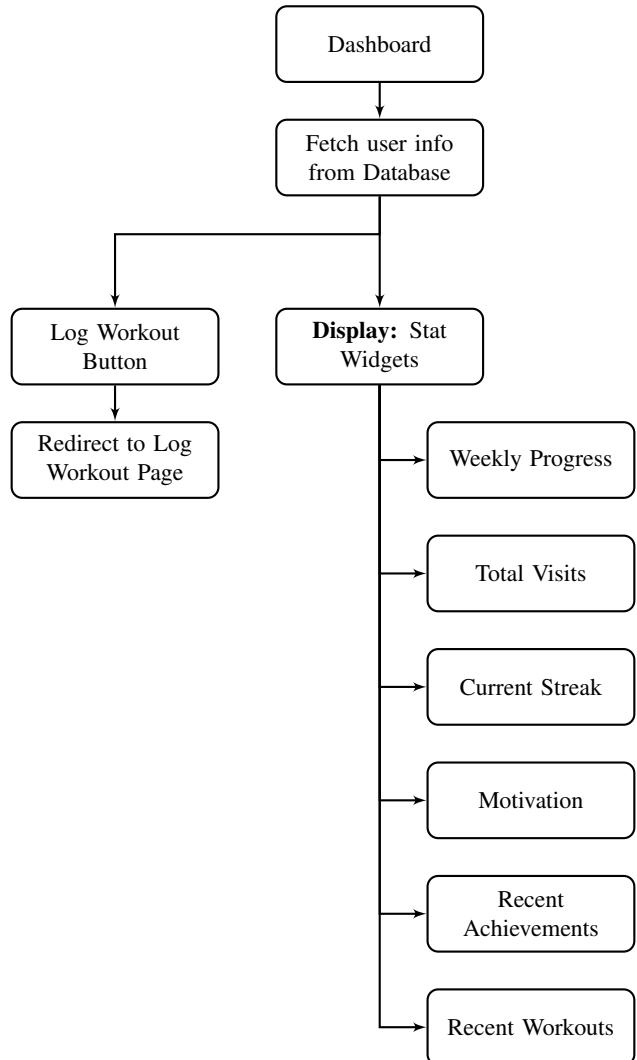


3 Flowcharts

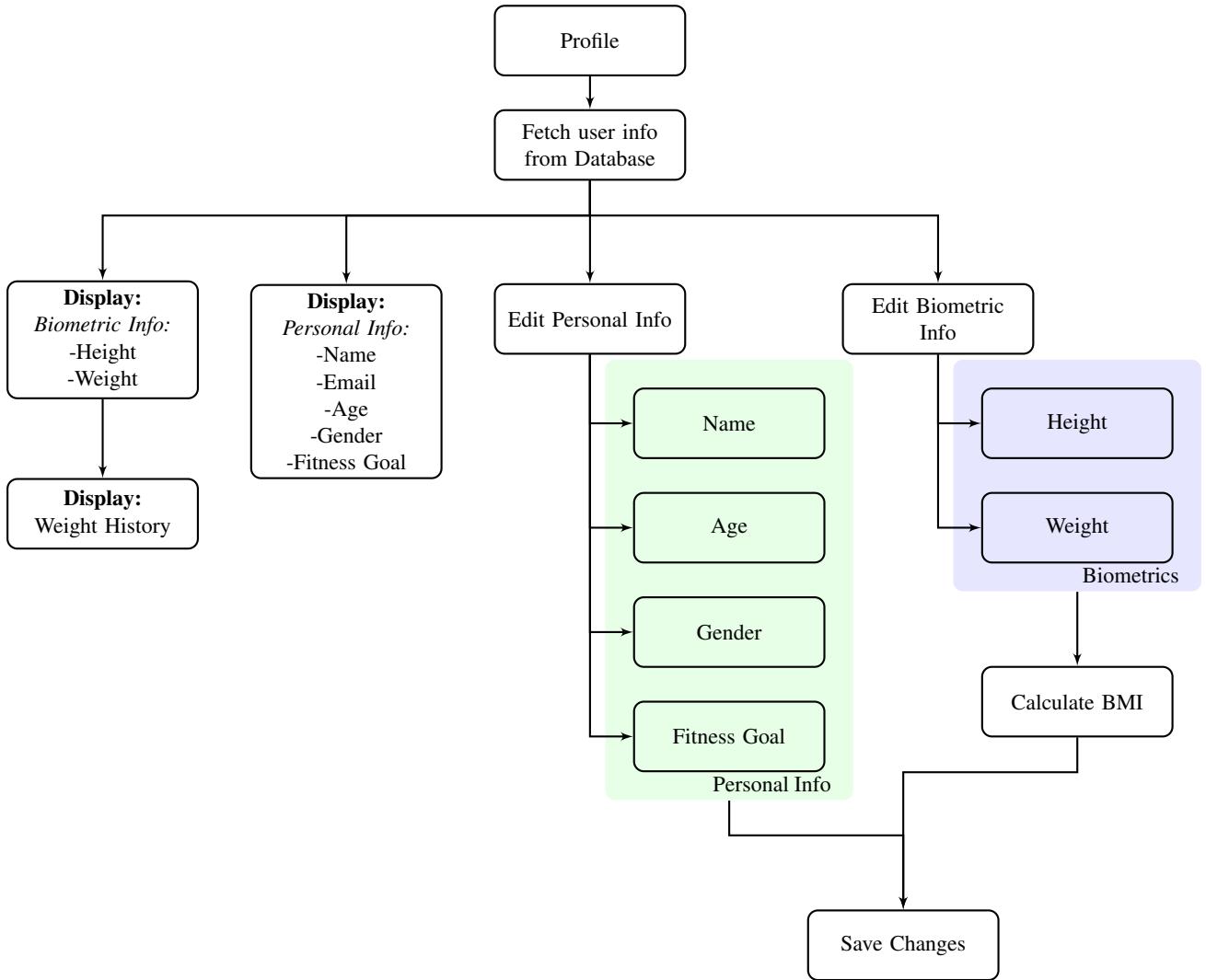
3.1 Basic Login Page



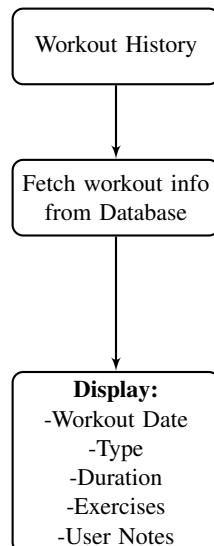
3.2 Dashboard



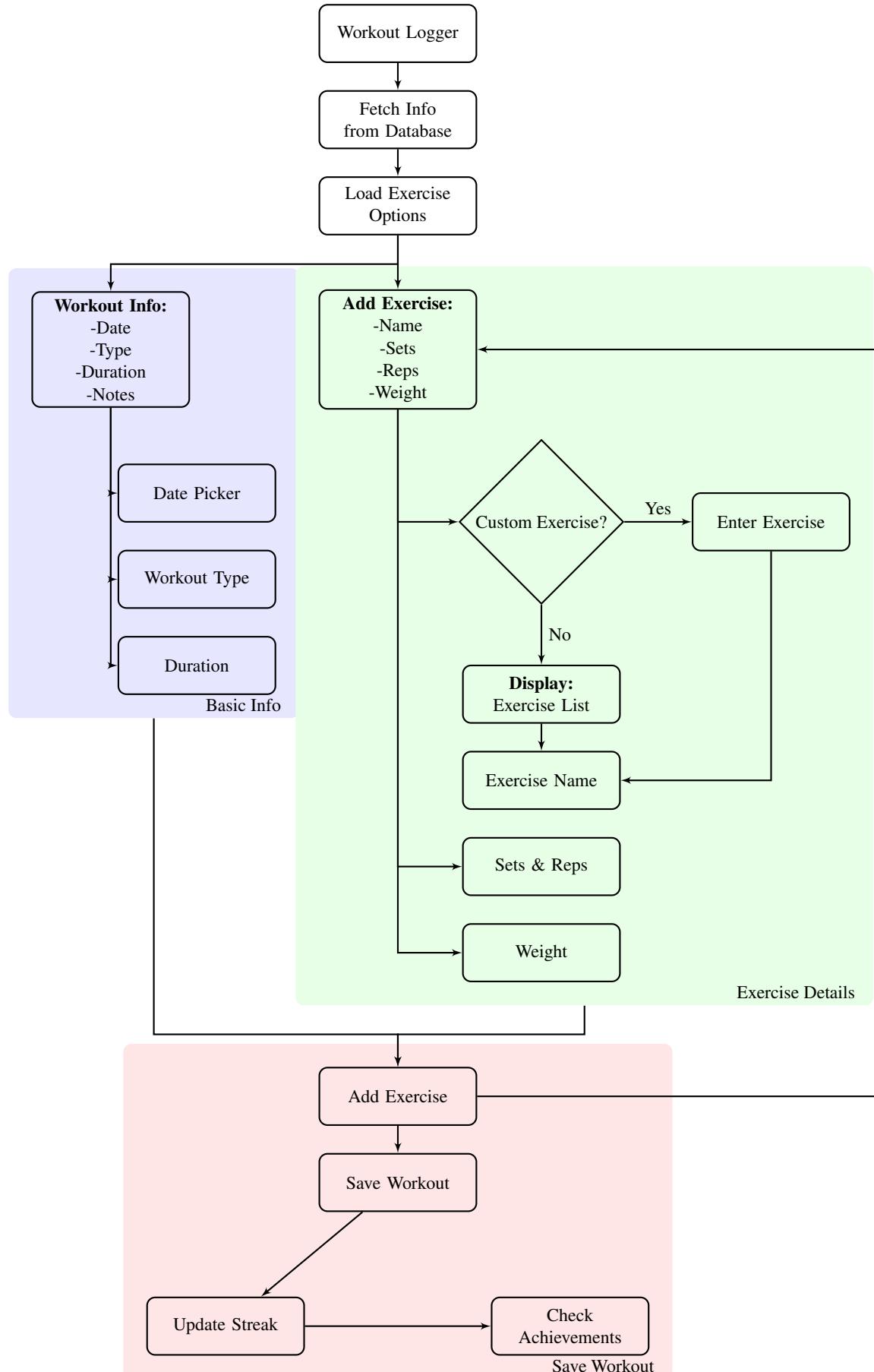
3.3 Profile Page



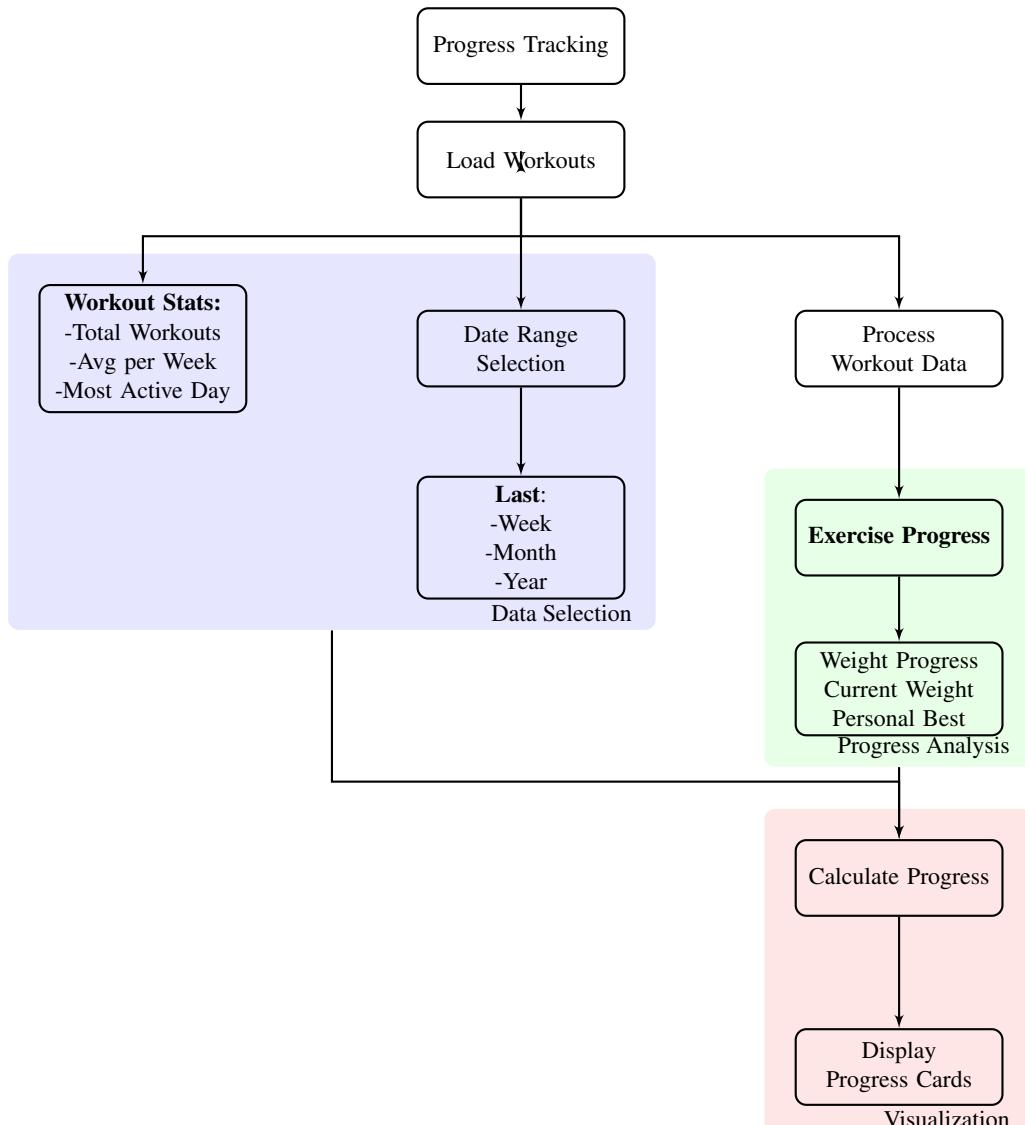
3.4 Workout History Page



3.5 Log Workout Page



3.6 Progress Tracking Page



4 Wireframes

4.1 Basic Login Page



Figure 1: Basic Login Page

4.2 Dashboard



Figure 2: Dashboard

4.3 Profile Page

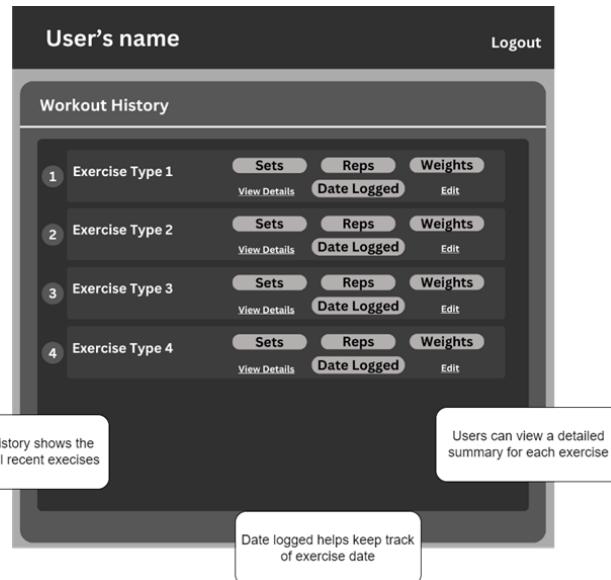


Figure 3: Profile Page

4.4 Workout History Page

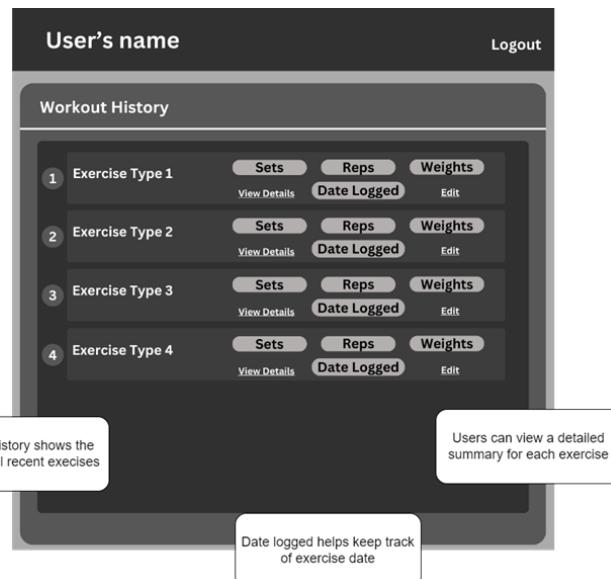


Figure 4: Workout History

4.5 Log Workout Page



Figure 5: Log Workout

5 Data Dictionaries

User Table	Data Type
userId	Int
email	String
password	String
name	String
height	Float
weight	Float
age	Int
gender	String
goal	String

Figure 6: User Table Schema

Exercise Table	Data Type
exerciseId	Int
workoutId*	Int
name	String
sets	Int
reps	Int
weight	Float

Figure 7: Exercise Table Schema

Workout Table	Data Type
workoutId	Int
userId*	Int
date	DateTime
duration	Int
type	String
notes	String

Figure 8: Workout Table Schema

Achievement Table	Data Type
achievementId	Int
userId*	Int
title	String
description	String
dateEarned	DateTime

Figure 9: Achievement Table Schema

Streak Table	Data Type
streakId	Int
userId*	Int
startDate	DateTime
endDate	DateTime
currentStreak	Int
longestStreak	Int

Figure 10: Streak Table Schema

Weight Table	Data Type
weightHistoryId	Int
userId*	Int
weight	Float
date	DateTime

Figure 11: Weight History Table Schema

Motivational Quote Table	Data Type
quoteId	Int
quote	String
author	String
dateDisplayed	DateTime

Figure 12: Motivational Quote Table Schema

6 UI Interface

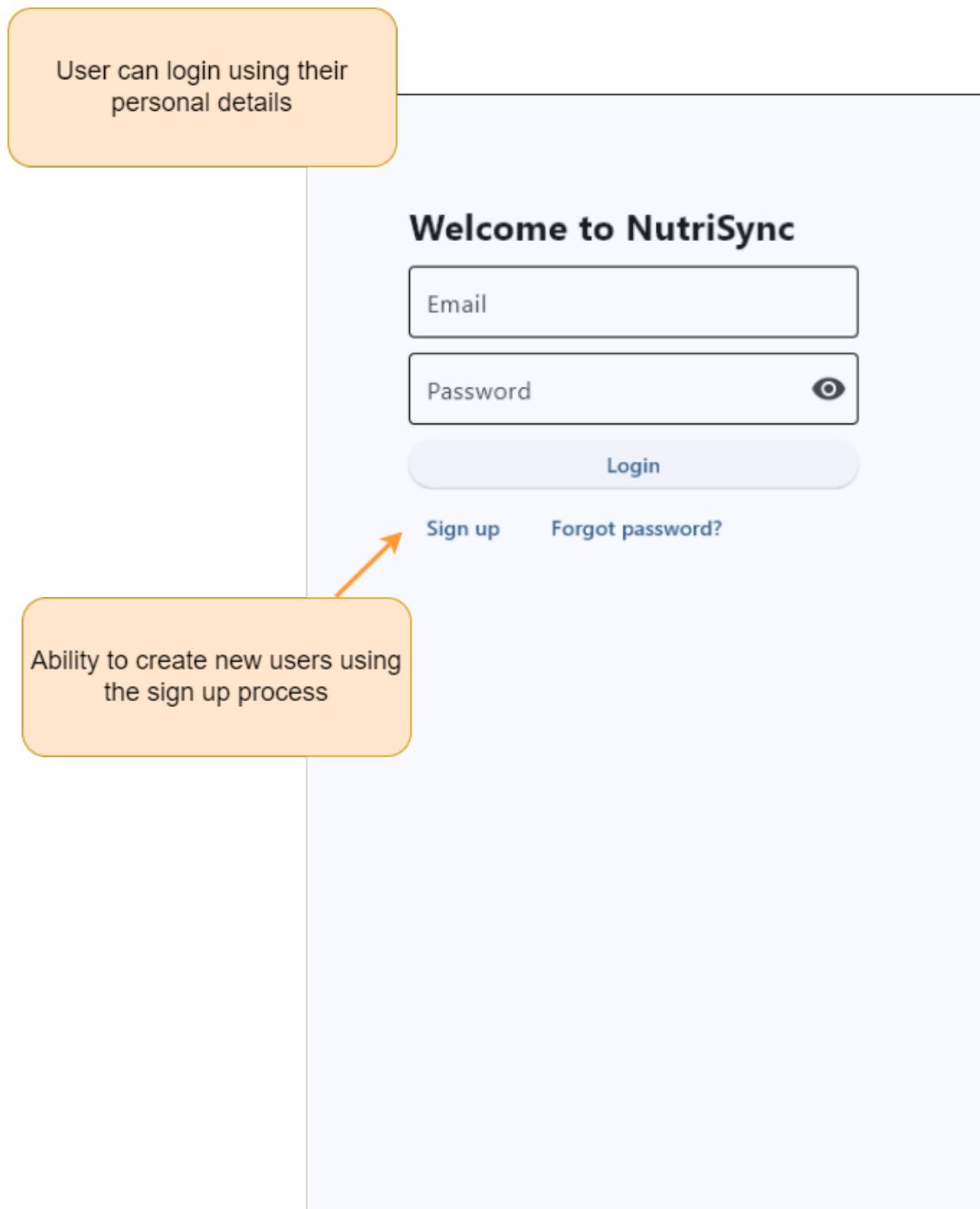


Figure 13: Login Screen

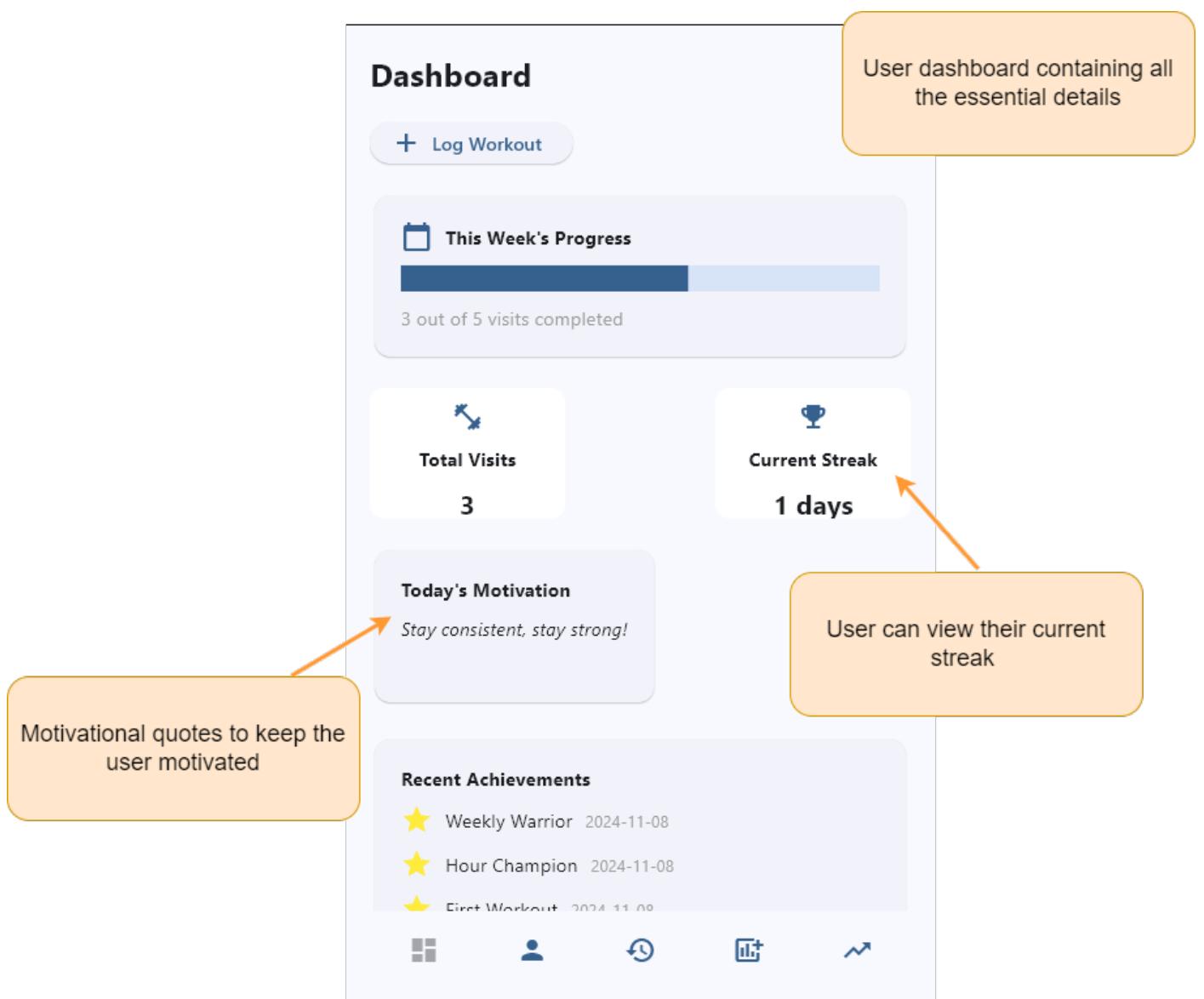


Figure 14: Dashboard Overview

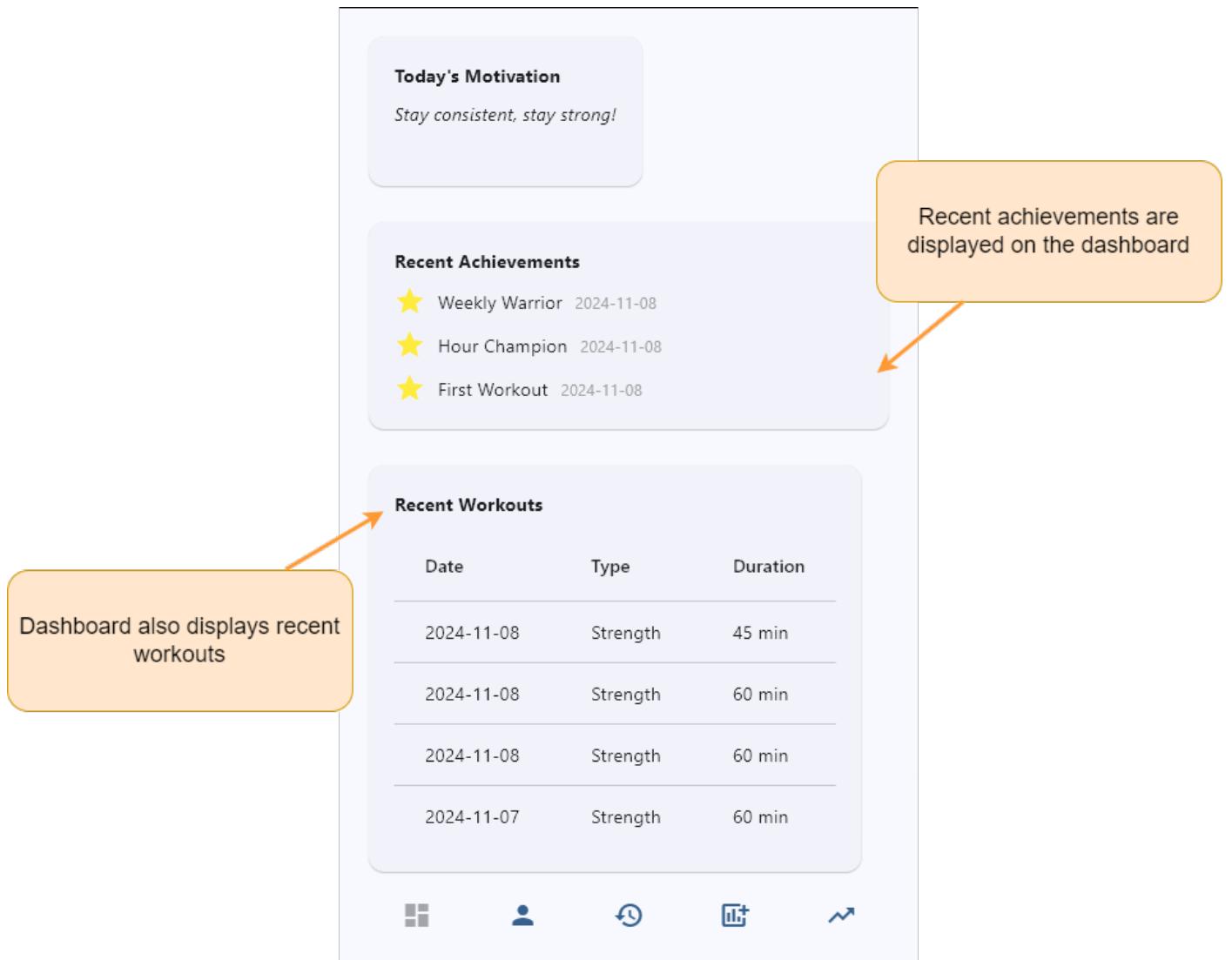


Figure 15: Dashboard Statistics

Log Workout

Date CALENDAR

Workout Type DROPDOWN

Duration (minutes)

Add Exercises

Exercise DROPDOWN + Add Exercise

Sets Reps Weight (lbs)

Exercise List

Notes

SAVE Save Workout

GRID PERSON CLOCK GRAPH LINE GRAPH

User can log their exercise with the exact details (sets, reps, weights)

Log Workout page helps keep track of all the exercises performed in detail

Ability to add additional notes in case user wants a personalized workout log

Figure 16: Workout Logging Interface

Log Workout page example

Log Workout

Date ————— 2024-11-09 

Workout Type ————— Strength 

Duration (minutes) ————— 60

Add Exercises

Exercise ————— Bench Press 

Sets ————— 3 Reps ————— 10 Weight (lbs) ————— 150

Exercise List

Notes

 Save Workout

Here, the workout type along with the exercise is filled with all the necessary details

Finally, user can save the workout with all the details

Figure 17: Filled Workout Form

User profile with all personal details

Profile

Personal Information

Name: Ad

Email: ad

Age: 16 Gender: Male

Fitness Goal: Muscle Gain

Biometric information of the users which displays their BMI along with their weight status

Biometric Information

Height (cm): 175.0 Weight (kg): 85.0

BMI: 27.8
Overweight

Recent Weight History:

- 2024-11-08: 85.0 kg
- 2024-11-08: 80.0 kg

Weight history to keep track of weight loss/gain

Save Changes

Users can personalize their profile details and save the changes

Figure 18: User Profile Page

The screenshot shows the 'Progress Tracking' page of a fitness application. At the top, there is a date range selector set to 'Last Month'. Below it, a section titled 'Workout Statistics' displays the following data:

- Total Workouts: 4
- Average Workouts per Week: 1.0
- Most Active Day: 2024-11-08 (3 workouts)

On the left side of the main content area, there is a callout box with the text: 'Workout stats with details on all previous workouts'. Another callout box on the left, with an arrow pointing to the 'Bench Press' section, contains the text: 'Exercise progress shows how much progress is made by displaying increase in weights, reps, sets, etc'. On the right side, there is a callout box with the text: 'Progress Tracking page that keeps a track of all workouts from a specific date'. At the bottom of the screen, there are five navigation icons: a grid, a person, a clock, a bar chart, and a line graph.

Progress Tracking

Date Range
Last Month

Workout Statistics

Total Workouts: 4
Average Workouts per Week: 1.0
Most Active Day: 2024-11-08 (3 workouts)

Exercise Progress

Bench Press

Current Weight: 200.0 lbs
Personal Best: 200.0 lbs
Progress: +50.0 lbs

Workout stats with details on all previous workouts

Exercise progress shows how much progress is made by displaying increase in weights, reps, sets, etc

Progress Tracking page that keeps a track of all workouts from a specific date

Figure 19: Progress Tracking View

Workout History to help the user keep track of their previous workouts

Workout History

Date: 2024-11-08

Type: Strength

Duration: 45 minutes

Exercises:

- Bicep Curls: 3 sets, 15 reps, 45.0 lbs

Notes: No notes

All necessary details are present for each workout along with the workout date

Date: 2024-11-08

Type: Strength

Duration: 60 minutes

Exercises:

- Bench Press: 3 sets, 5 reps, 200.0 lbs

Notes: No notes

Date: 2024-11-08

Type: Strength

Duration: 60 minutes

Exercises:

Notes: No notes



Figure 20: Workout History Display

7 Test Plan

Action to be tested	Test Method	Expected Result
User Registration	Create new account with email and password	User account is created and stored in database with hashed password
User Login	Login with registered email and password	User successfully logs in and is redirected to dashboard
Password Security	Attempt login with incorrect password	System denies access and shows appropriate error message
Basic Workout Logging	Log a workout with exercise type, sets, reps, and weights	Workout is logged and can be viewed in workout history with all details preserved
Custom Exercise Entry	Add a new exercise type not in predefined list	New exercise is saved and available for future workouts
Workout History Display	Access workout history from the main menu	All logged workouts are displayed in reverse chronological order with complete exercise details
Daily Streak Tracking	Log workouts on consecutive days	Streak counter increases by one each day a workout is logged
Streak Break Handling	Miss a day of workout after maintaining streak	Streak counter resets and new streak begins with next workout
Achievement System	Complete various workout milestones	Appropriate achievements are unlocked and displayed in user profile
Dashboard Statistics	View dashboard after logging several workouts	Dashboard shows accurate workout frequency, streak, and recent activity
Progress Visualization	Track workout performance over time	Charts show progress trends for weights, frequency, and duration
Exercise Weight Tracking	Log increasing weights for specific exercises	Progress tracking shows weight progression over time
Workout Duration Tracking	Log workouts with different durations	System accurately records and displays workout duration statistics
Workout Type Statistics	Log different types of workouts (Strength, Cardio, etc.)	Dashboard shows breakdown of workout types
Motivational Quotes Display	Access the daily motivational quote	A new motivational quote is displayed each day from database
Multiple Exercise Logging	Add multiple exercises to a single workout session	All exercises are properly saved and associated with the workout
Data Validation	Enter invalid data (incomplete entries)	System shows appropriate error messages and prevents invalid data entry
Workout Plan Creation	Create a preset workout plan	Plan is saved and can be used as template for future workouts
Achievement Notification	Earn a new achievement	System displays appropriate notification and updates achievement list
Profile Management	Update user profile information	Changes are saved and reflected throughout the application
Exercise History	View history of specific exercise	System shows progression and history for individual exercises
Date Selection	Log workout for past date	System correctly associates workout with selected date
UI Responsiveness	Navigate between different sections	UI updates smoothly without delays or visual artifacts
Error Handling	Attempt actions with poor network connection	System handles errors gracefully and preserves data
Data Persistence	Close and reopen application	All previously logged data is preserved and accessible