

ACTIVE LIFE REPORT



1. INTRODUCTION

1.1 Introduction

Our project is a comprehensive fitness management app designed to support users on their journey toward a healthier lifestyle. The app welcomes users with a dynamic splash screen, displaying a random motivational quote alongside the app logo to inspire each day.

For new users, the experience begins with a simple sign-up process, where they provide essential details like name, email, activity level, and other information to create a personalized fitness profile.

Upon login, users are greeted by a user-friendly dashboard with four main sections: **Homepage**, **Meal Planning**, **Workouts**, and **Profile**.

- **Homepage**: This section highlights the user's name and avatar, along with daily streaks that encourage consistent use. It also includes a step counter, workout counter, and showcases recommended workouts to help users meet their fitness goals.
- **Meal Planning**: Here, users find curated meal plans, each with detailed nutritional information. Beneath the top plans, they can also access nutritional tips to support their dietary choices.
- **Workouts**: Users can browse a comprehensive library of workout routines. Each workout features exercises with step-by-step instructions, targeted body parts, breathing techniques, and common mistakes. During workouts, an animated guide is available, along with a circular timer, and options to skip, resume, or quit.
- **Profile**: In this section, users can manage personal information such as weight, height, and age, and access features like progress photos, BMI calculation, step goal adjustments, achievement badges, and trainer preferences.

1.2 Problem Definition

In today's fast-paced world, maintaining a healthy lifestyle can be challenging due to a lack of structured guidance and support. Many individuals struggle with consistency in their fitness routines and meal planning, often leading to frustration and decreased motivation. Existing fitness solutions are frequently fragmented, making it difficult for users to track their progress and stay engaged in their wellness journey.

1.3 Project Category

This project falls under the category of Health and Fitness Applications, specifically focusing on mobile app development. It aims to provide an integrated platform that combines workout routines, meal planning, and personal progress tracking to enhance user engagement and promote a healthier lifestyle.

1.4 Motivation and Scope Objectives

The motivation for developing this fitness management app comes from the growing need for easy-to-access, comprehensive health tools. With more people looking for ways to improve their fitness and well-being, this app is designed to help users take charge of their health journey. The project aims to create a flexible platform that meets a variety of user needs, including workout guidance, meal planning, and tracking personal progress, all in one place to keep users motivated and on the path to their fitness goals.

1.5 Objectives

The primary objectives of the fitness management app are:

- To create a user-friendly interface that enhances accessibility and engagement.
- To provide personalized meal plans and nutritional advice tailored to individual needs.
- To offer a wide range of workout routines with detailed instructions and progress tracking.
- To motivate users through daily streaks, achievement badges, and personalized fitness insights.
- To facilitate community building among users through shared goals and achievements.

1.6 Background Study: Existing System

Current fitness applications often struggle with the integration of workout tracking and meal planning, which leads users to rely on multiple apps or resources to meet their fitness needs. Many existing platforms lack personalization, resulting in a one-size-fits-all experience that does not cater to individual fitness goals. Additionally, these applications may fail to engage users effectively, leading to decreased motivation and participation over time.

1.7 Proposed System

The proposed fitness management app addresses these gaps by providing a single, integrated platform that combines workout routines, meal planning, and personalized progress tracking. Users will benefit from features like a dynamic homepage displaying motivational quotes, a meal planning section with curated plans and nutritional tips, a comprehensive workout library with instructional content, and a user profile to manage personal fitness information. The app is designed to foster consistency and motivation through features like daily streak tracking and achievement badges.

1.8 Unique Features of the system

- **Dynamic Splash Screen**: Each time the app is opened, users are greeted with a random motivational quote to inspire their fitness journey. The splash screen also displays key metrics such as streak count and step count, providing users with immediate feedback on their progress.
- **Progress Tracking and Badges**: Users can track their progress through achievements and badges, creating a sense of accomplishment and motivation to continue their fitness journey. Additionally, users can upload progress photos, which are saved in a dedicated progress album, allowing them to visually track their transformation over time.
- **Interactive Workout Sessions**: Each workout includes animated video guides, a circular timer, and the ability to skip, resume, or quit exercises, providing flexibility during workouts. Users can easily navigate through different exercises, making their workout experience more enjoyable and efficient.
- **Personalized Dashboard**: A user-friendly dashboard showcases personalized stats in one place, including:
 - a) **Workout Progress**: Users can view their completed workouts and overall progress, motivating them to keep pushing toward their fitness goals.
 - b) **BMI Calculator**: An integrated BMI calculator helps users assess their body mass index, providing insight into their health and fitness status.
 - c) **Daily Streaks**: Users can track how many consecutive days they have engaged with the app, promoting consistent usage.
 - d) **Step Counts**: A built-in step counter allows users to monitor their daily activity levels, encouraging them to stay active.

2. REQUIREMENTS ANALYSIS AND SYSTEM SPECIFICATIONS

2.1 Feasibility Study

Technical Feasibility: The fitness management app has been developed using Android Studio, which allows for compatibility with both Android and iOS platforms. Data is efficiently managed through SQLite databases. The app is fully functional and ready for user engagement.

2.2 System Specification

The system specification outlines the functional and non-functional requirements of the fitness management app to ensure it meets user needs and expectations.

Functional Requirements:

- **User Registration and Login:** Users can create accounts and log in securely to access their personalized dashboard.
- **Dashboard Display:** The dashboard shows daily streaks, step counts, workout progress, and BMI calculations.
- **Workout Library:** The app provides access to a range of predefined workout routines with detailed instructions and video guides.
- **Meal Planning Section:** Users can access general nutritional information and tips for healthy eating.
- **Progress Tracking:** Users can upload progress photos, track achievements, and earn badges for completed workouts.
- **Interactive Features:** Users can start, pause, skip, or quit workouts at any time during their sessions.

Non-Functional Requirements:

- Usability: The app has an intuitive and user-friendly interface that is easy to navigate for users of all ages and fitness levels.
- Performance: The app loads quickly and operates smoothly, with minimal downtime or lag during use.
- Scalability: The backend infrastructure can handle an increasing number of users and data as the app grows in popularity.
- Security: User data is protected through encryption and secure authentication methods to ensure privacy and confidentiality.
- Compatibility: The app is compatible with major mobile operating systems (iOS and Android) and works on various screen sizes.

3. SYSTEM DESIGN

3.1 Design Approach

The fitness management app follows an **Object-Oriented Design (OOD)** approach, which means it's built around "objects" that group together related data and actions.

Encapsulation: Each part of the app is designed as a separate object that holds its own data and functions. This keeps things organized and makes it easier to manage and update the code when needed.

Abstraction: Complex workings are hidden behind simple, user-friendly features. Users see only what they need, without dealing with the technical details in the background.

Inheritance: The app uses a structure where certain features or functions are shared across different parts, saving time and effort. For instance, basic workout features are defined once and then extended to different workout types, reducing repeated code.

Polymorphism: This feature allows the app to handle different kinds of workouts or meal plans under one unified system, making it flexible and adaptable.

User-Centered Design: While following technical principles, the app is always designed with the user in mind. Feedback from users helps refine the design to ensure it remains simple, intuitive, and effective.

3.2 System Design using Structured Analysis and Design Tools

The system design of the fitness management app employs structured analysis and design tools to create a clear and organized representation of the application's architecture and functionalities. The following tools and techniques are used:

Data Flow Diagrams (DFDs): DFDs are utilized to illustrate how data moves through the app. These diagrams help visualize user interactions and how information is processed in different modules, such as user registration, workout tracking, and meal planning.

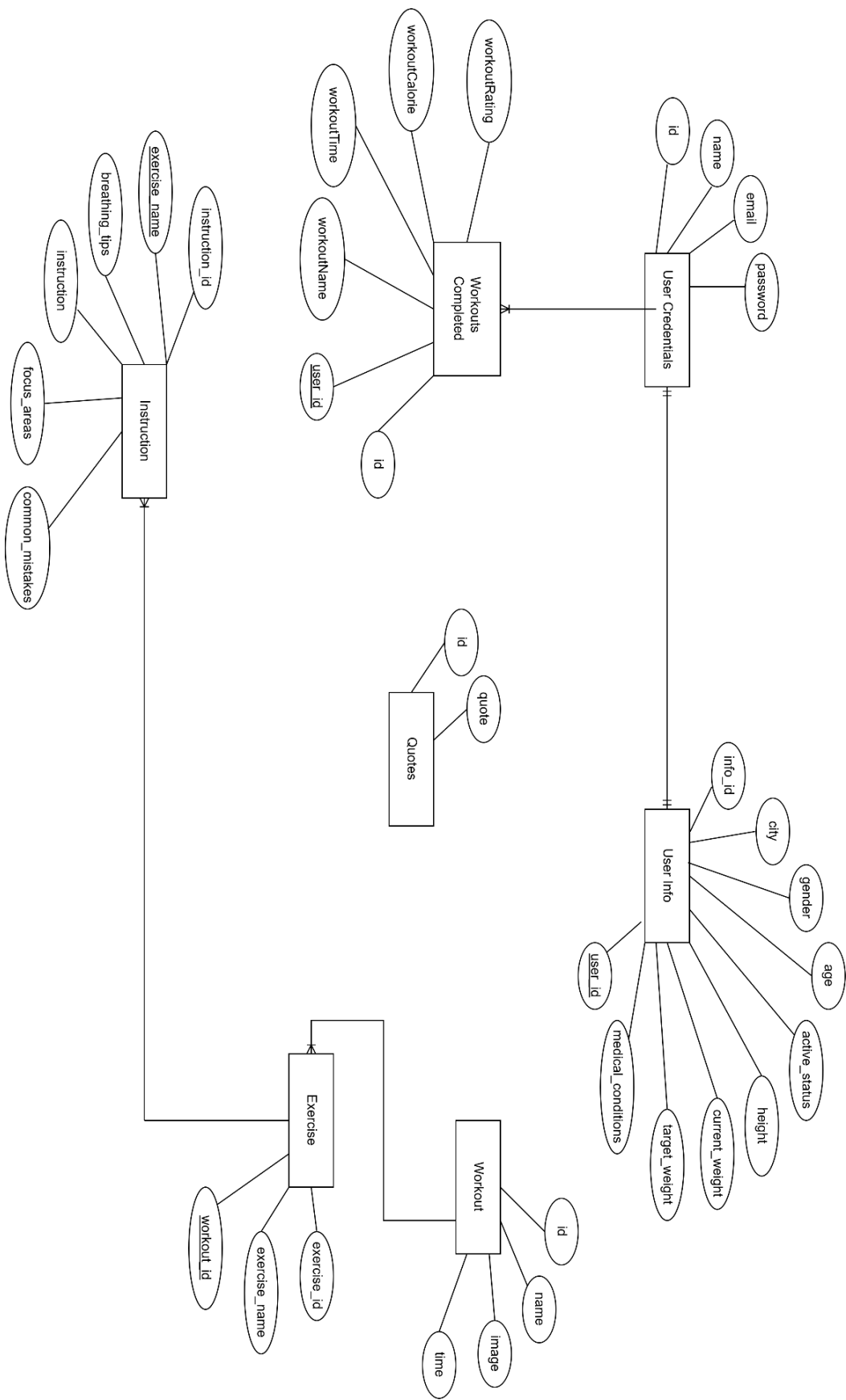
Entity-Relationship Diagrams (ERDs): ERDs are used to define the relationships between various data entities within the app, such as users, workouts, meal plans, and achievements. This representation assists in understanding the database structure and how different data points are connected.

Use Case Diagrams: Use case diagrams outline the interactions between users and the app's features. These diagrams provide a high-level overview of how users will engage with the app, such as logging in, tracking workouts, and accessing meal plans.

Class Diagrams: Class diagrams detail the various classes in the app, their attributes, methods, and relationships. This helps in organizing the object-oriented structure of the application and facilitates better code management.

Flowcharts: Flowcharts are used to detail the processes within the app, such as user registration and workout session management. These visual representations help clarify the steps involved in each process, making it easier to identify potential issues or areas for improvement.

3.3 Database Design using ER Diagram



4. IMPLEMENTATION, TESTING AND MAINTENANCE

4.1 Introduction to Languages, IDE's Tools, and Technologies Used for Implementation

Programming Languages:

The development of the fitness management app required a combination of programming languages, development environments, and tools to create a functional and user-friendly experience. Here is an overview of the key technologies used:

- **XML**: Used for designing the user interface layouts. XML allows for clear, structured, and easy-to-edit UI components that enhance the look and usability of the app.
- **Java**: Used for the main app development on Android. It is widely supported and provide powerful libraries for creating dynamic mobile applications.

Integrated Development Environment (IDE):

- **Android Studio**: The primary IDE used for developing the app. Android Studio offers a robust suite of tools, including emulators for testing on various devices, layout editors, and debugging tools, making it ideal for Android app development.

Database:

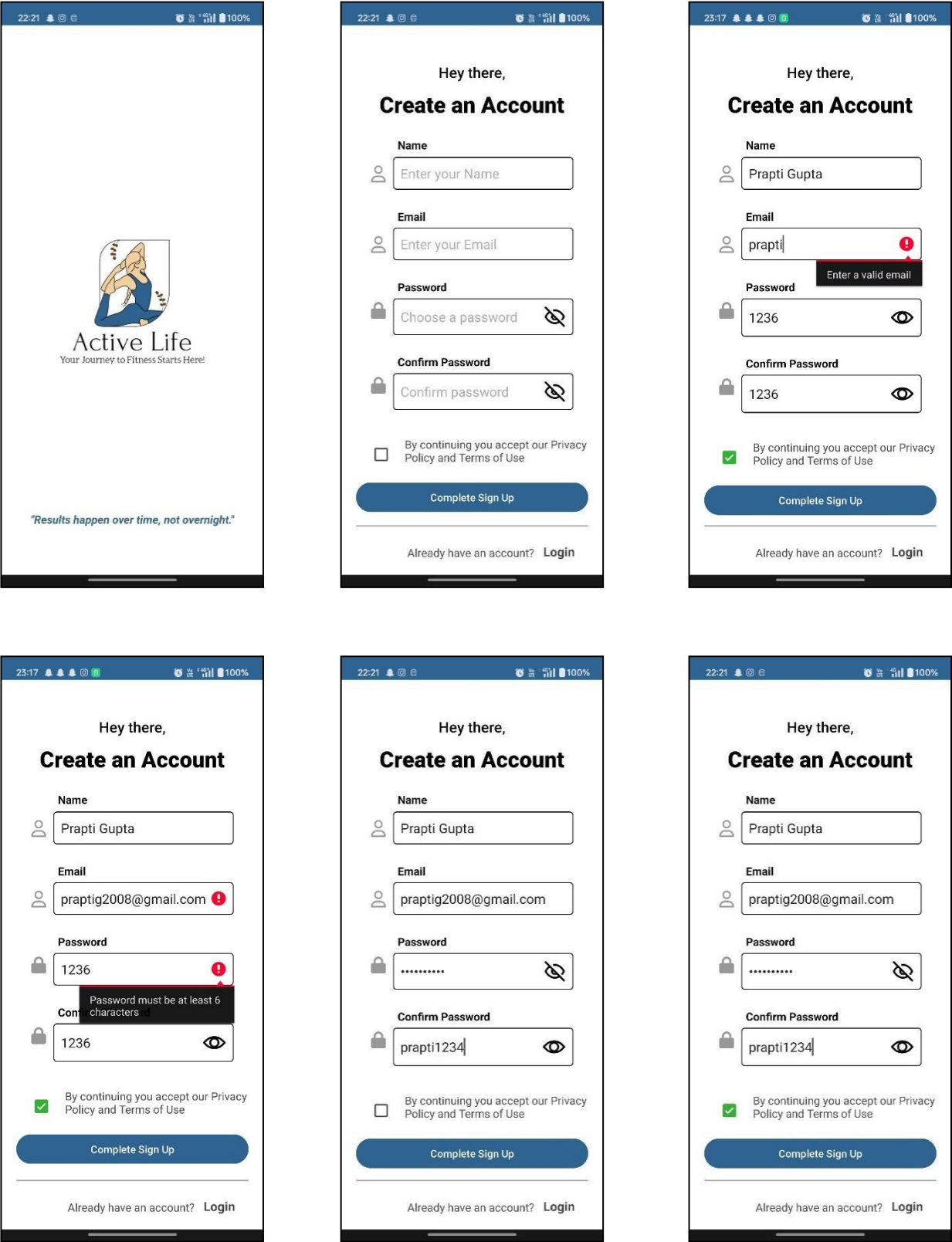
- **SQLite**: This lightweight, local database is used to store user data on the device, such as workout progress, meal plans, and personal information. SQLite is ideal for mobile applications because it is efficient and doesn't require a network connection.

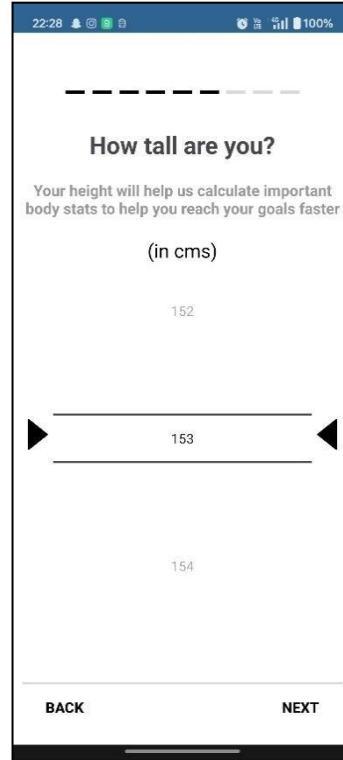
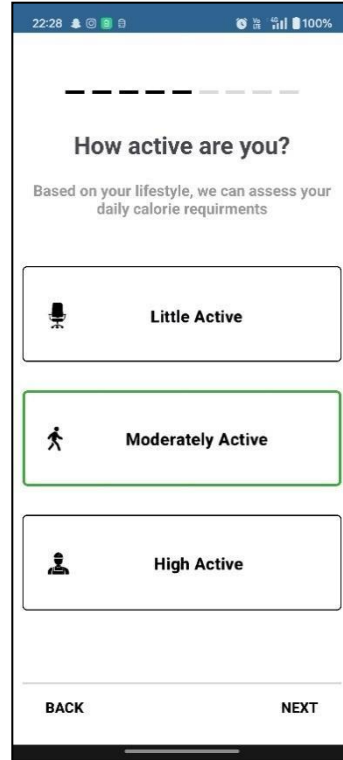
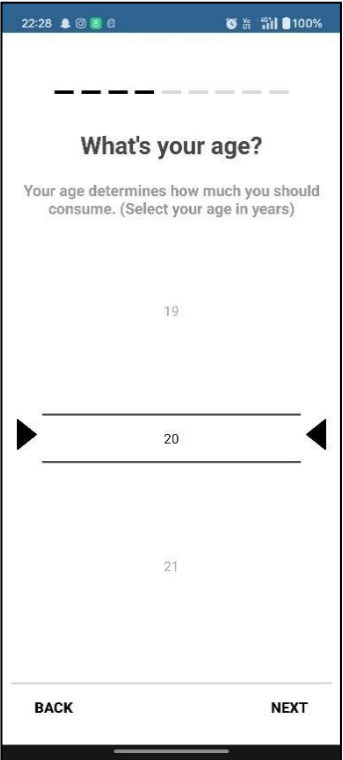
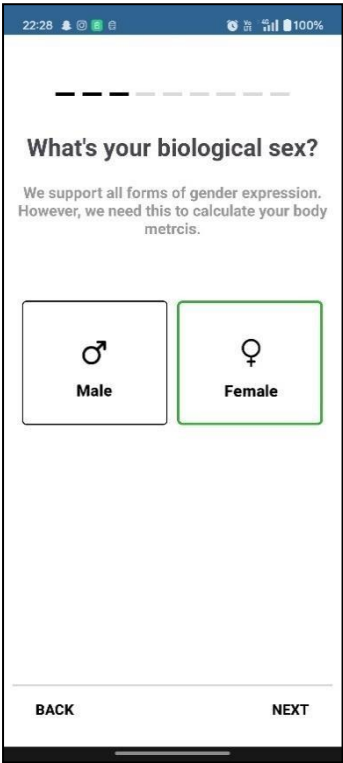
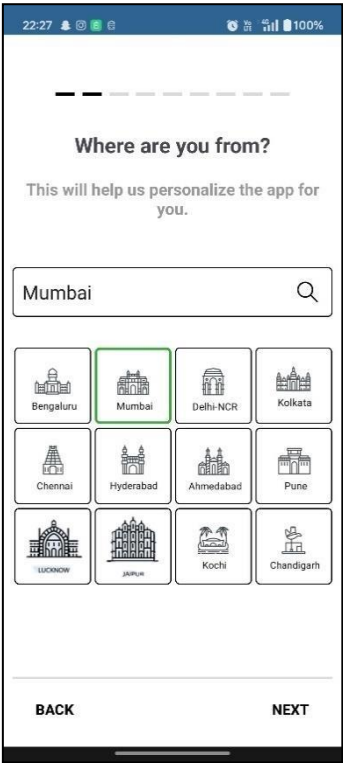
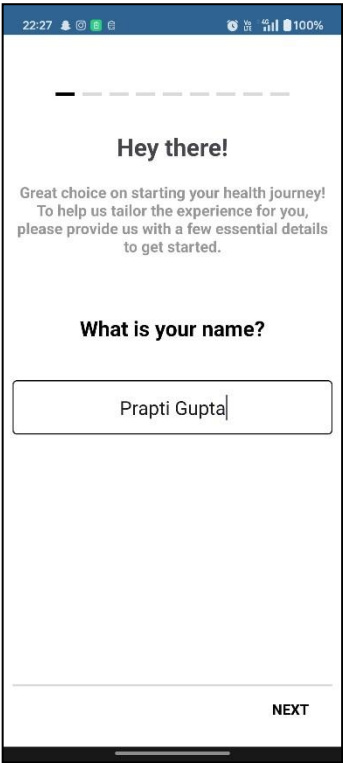
Design and Prototyping Tools:

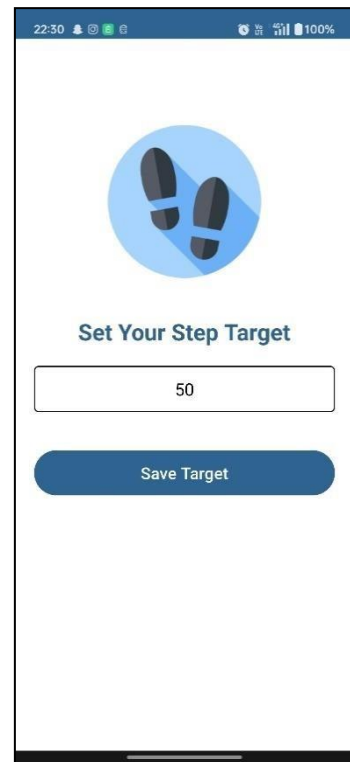
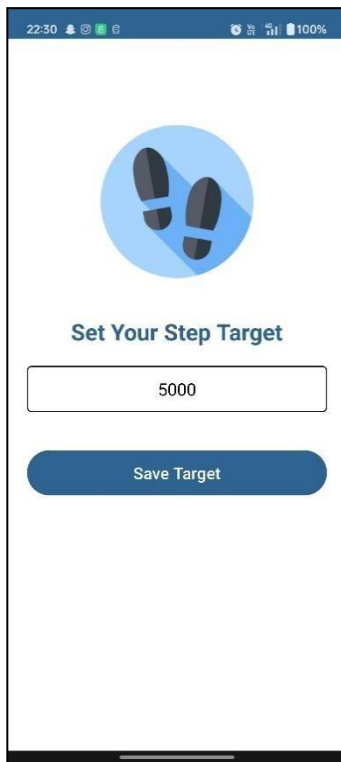
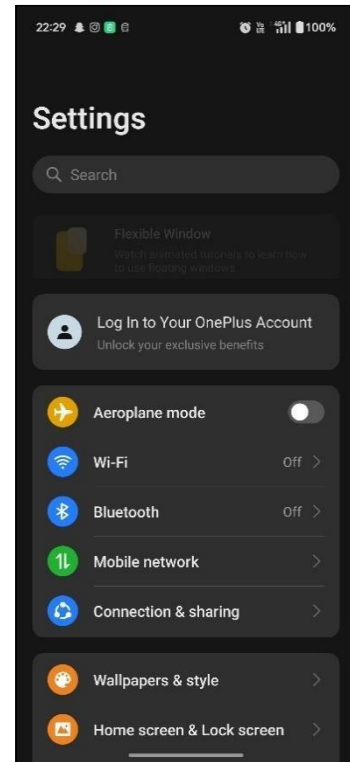
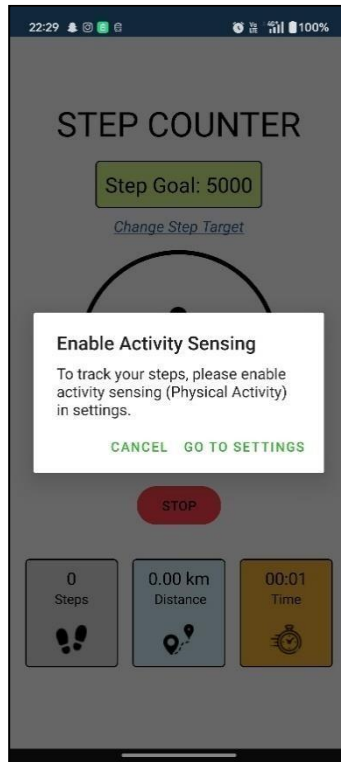
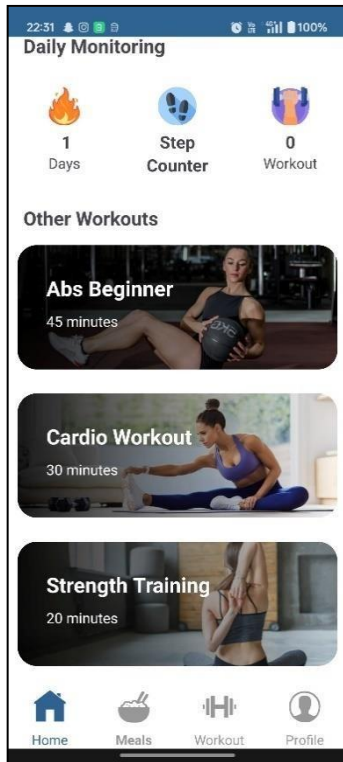
- **Figma**: These tools were used to create wireframes and mockups for the app. They allow the team to visualize the user interface before implementation and make it easy to gather feedback and refine the design.

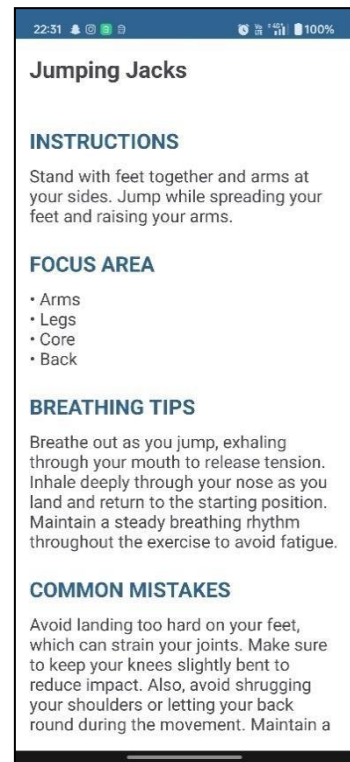
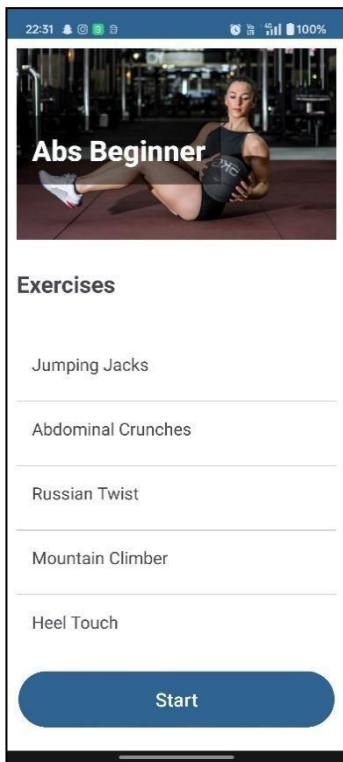
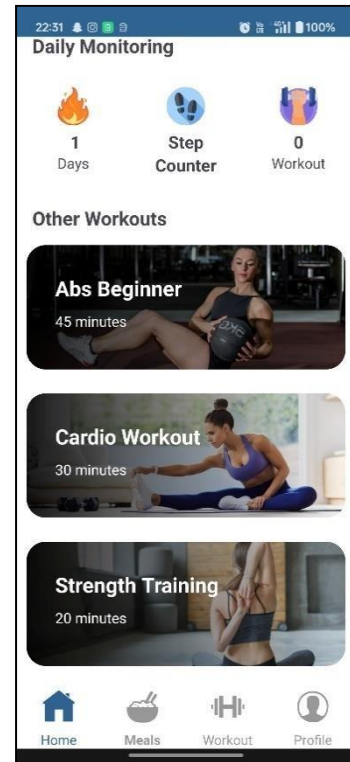
5. RESULTS AND DISCUSSION

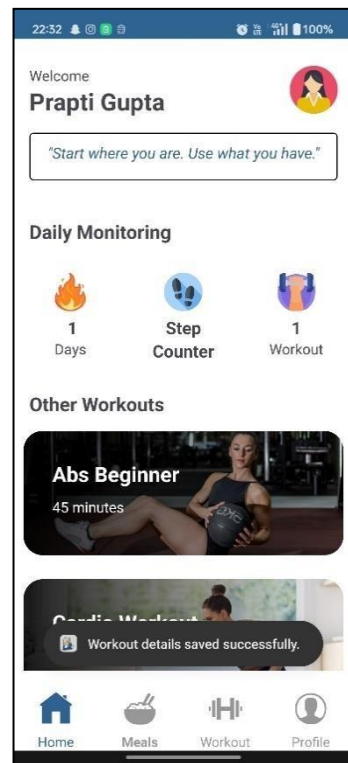
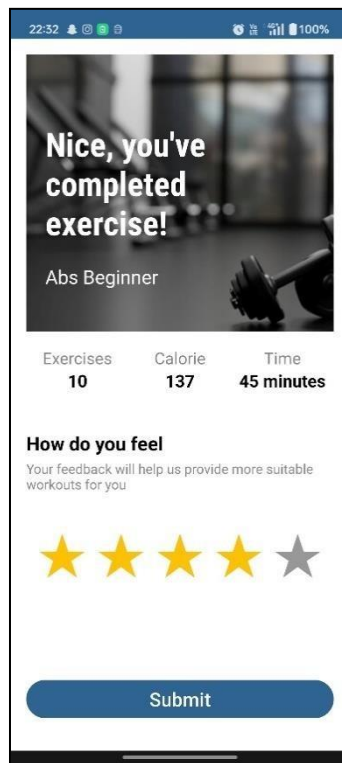
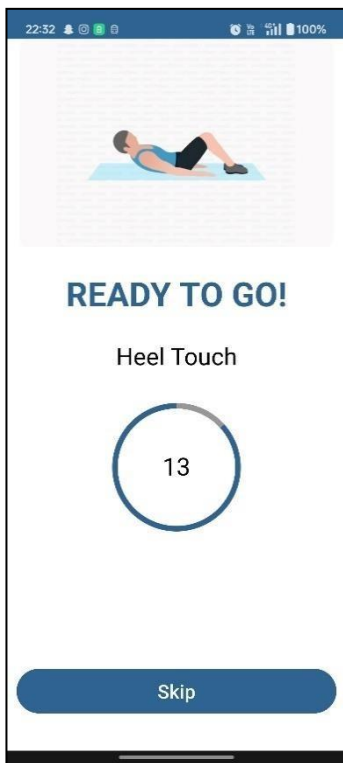
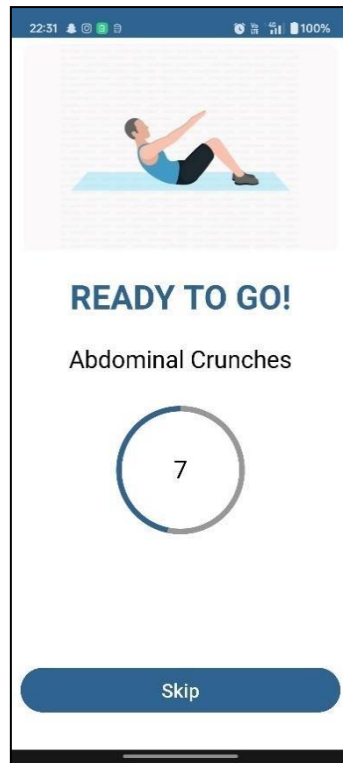
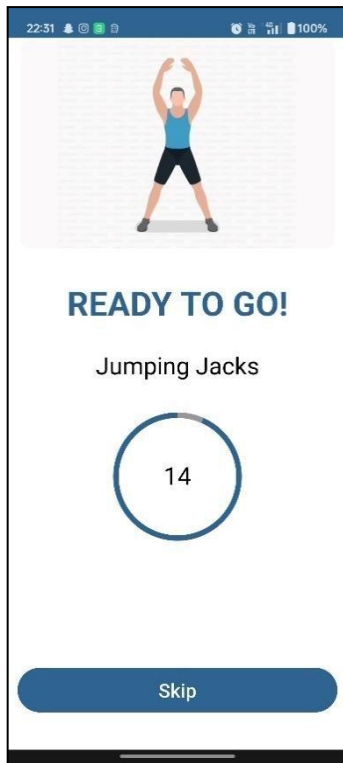
5.1 Snapshots of the modules of the system

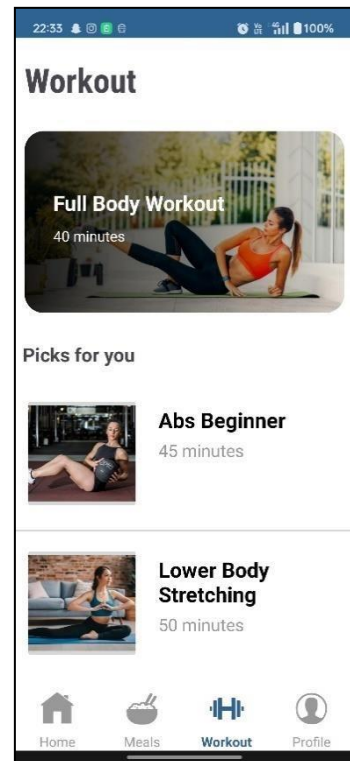
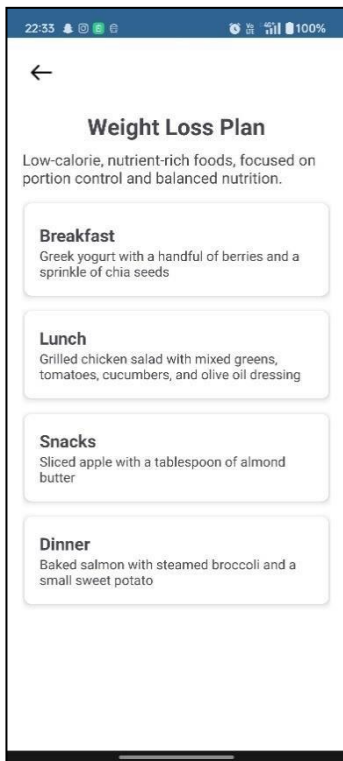
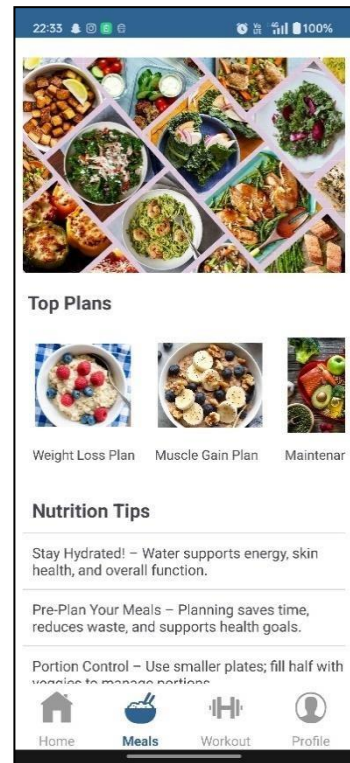
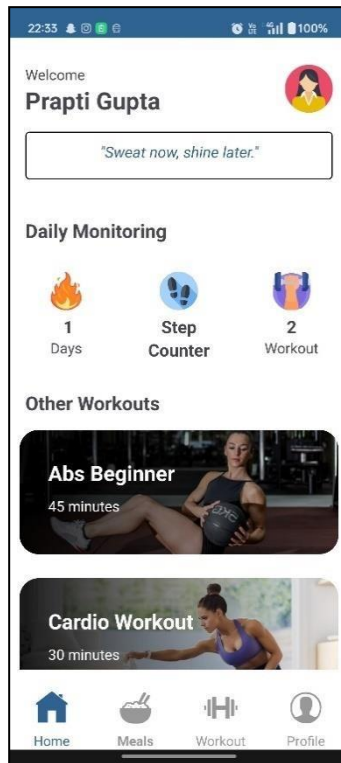
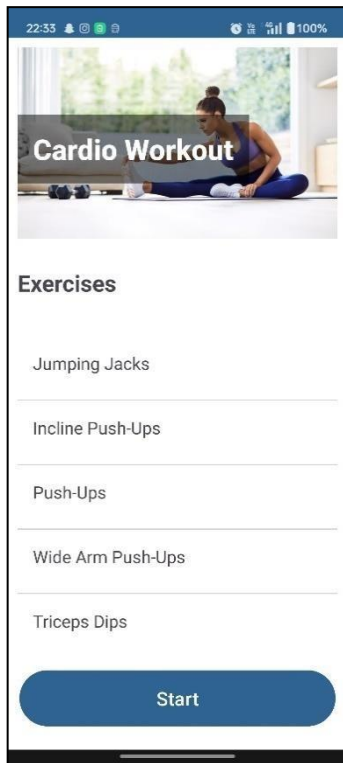


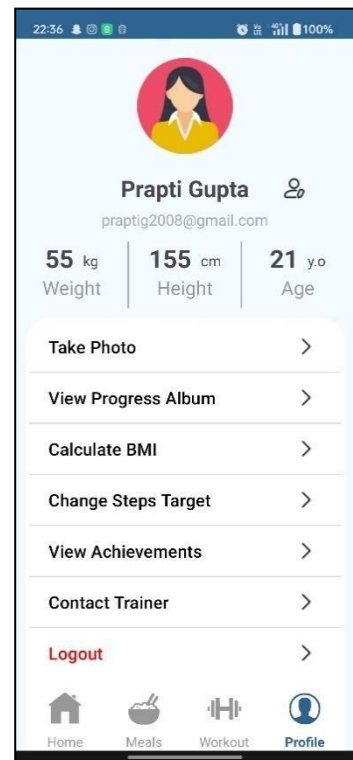
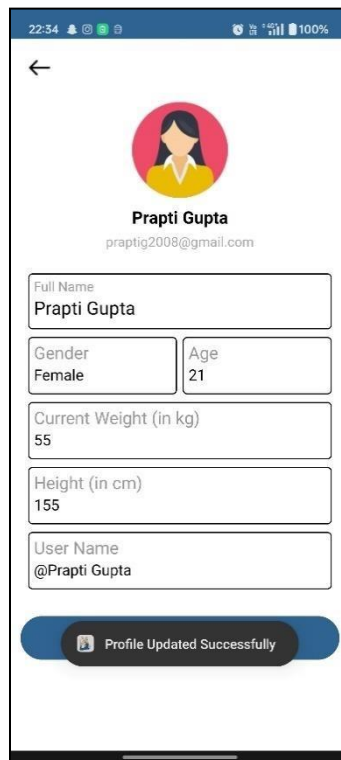
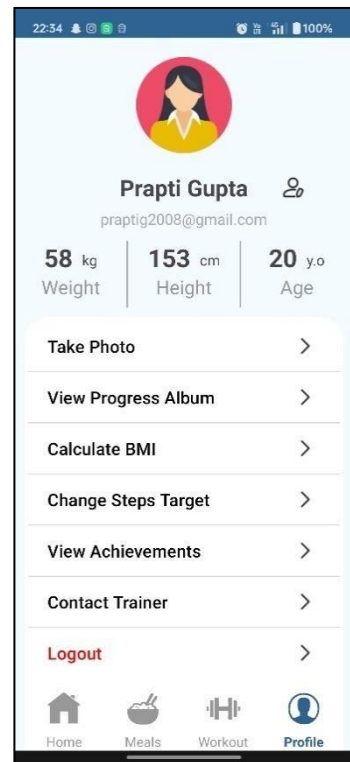
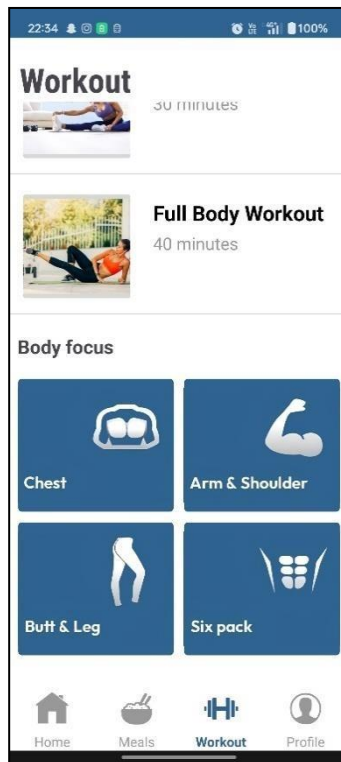
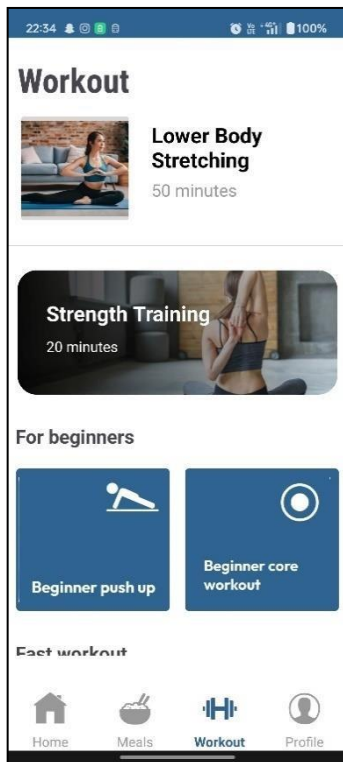


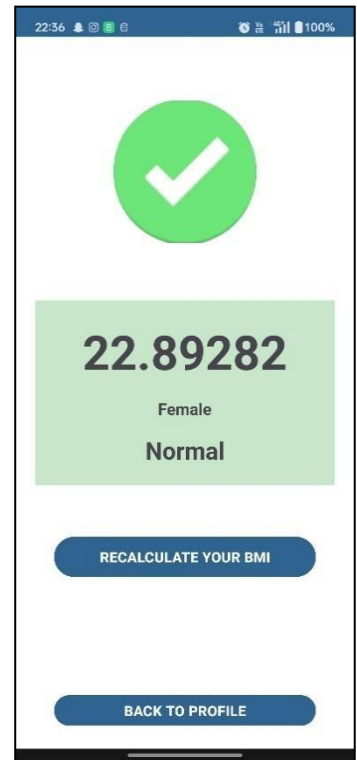
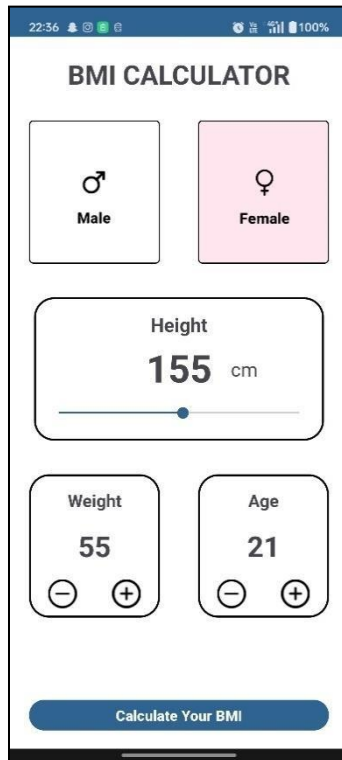
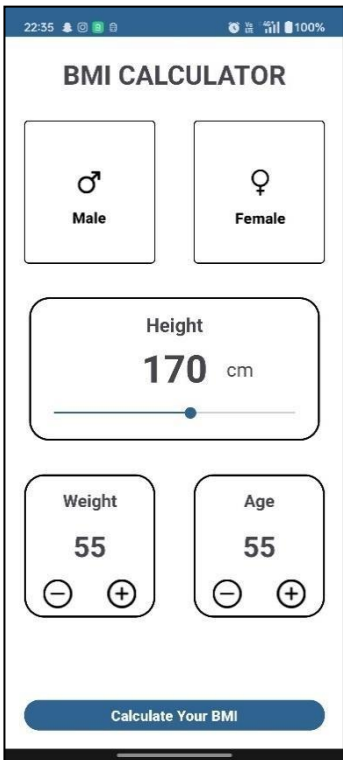
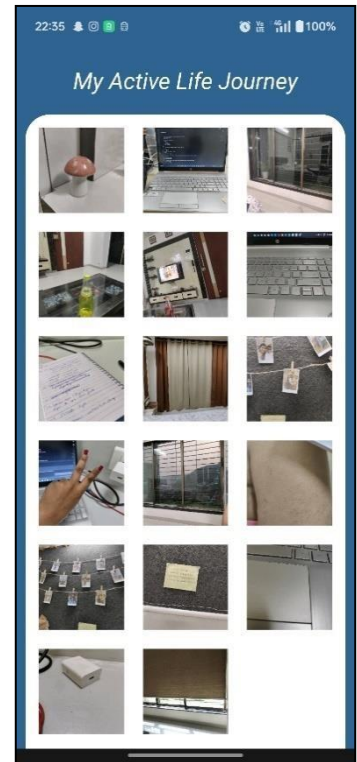
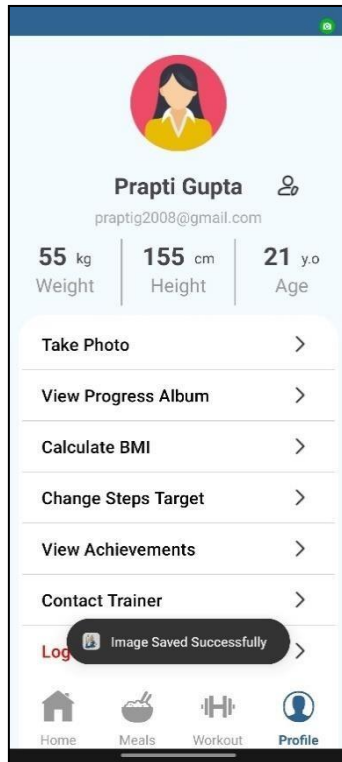


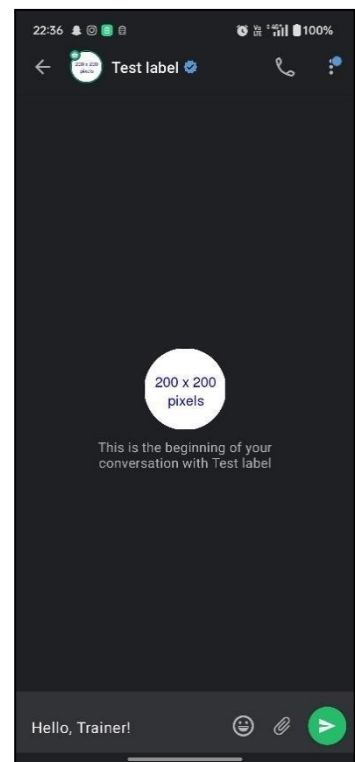
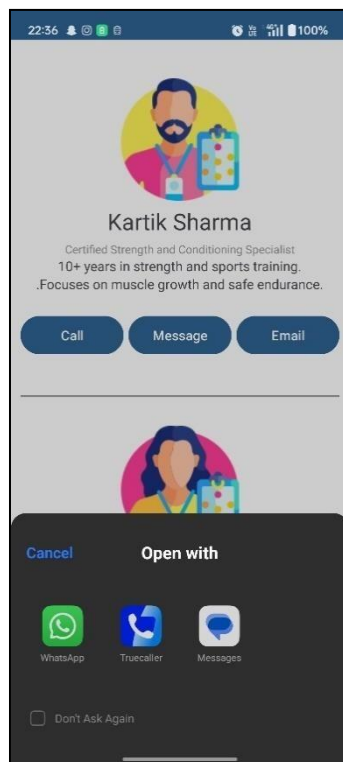
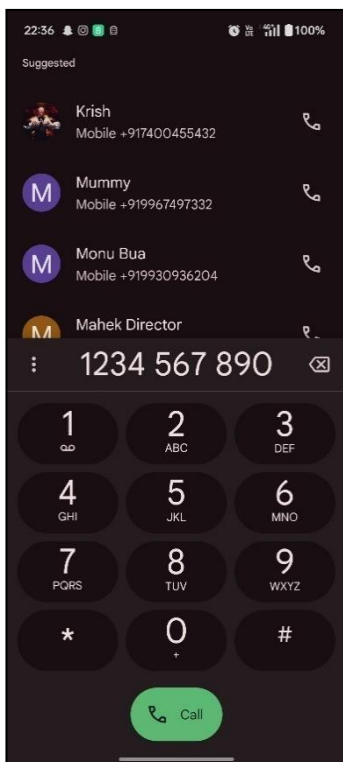
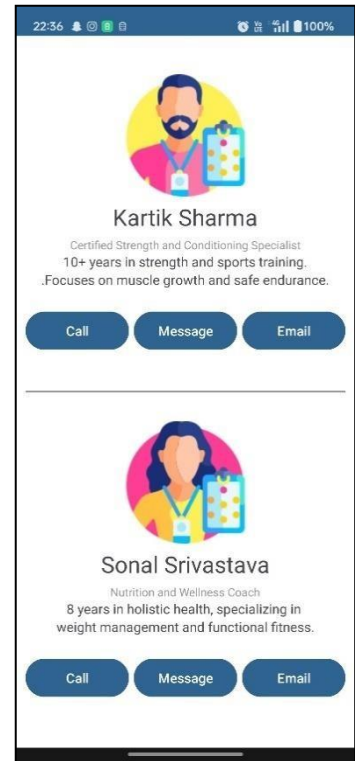
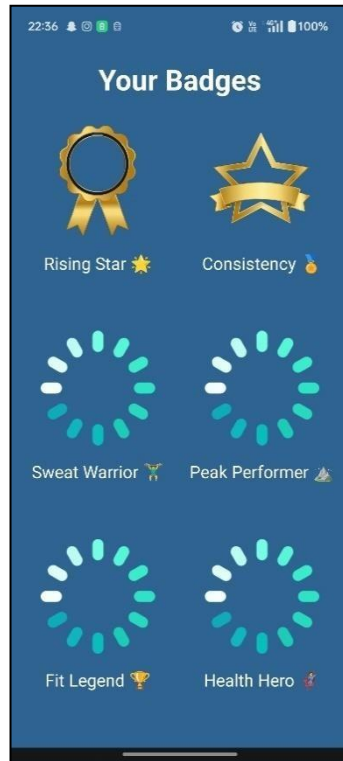
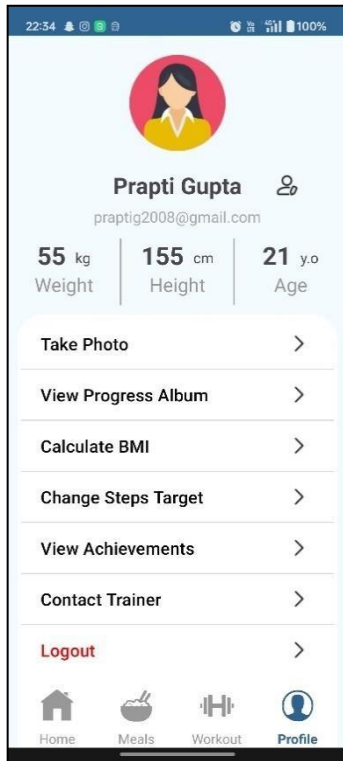


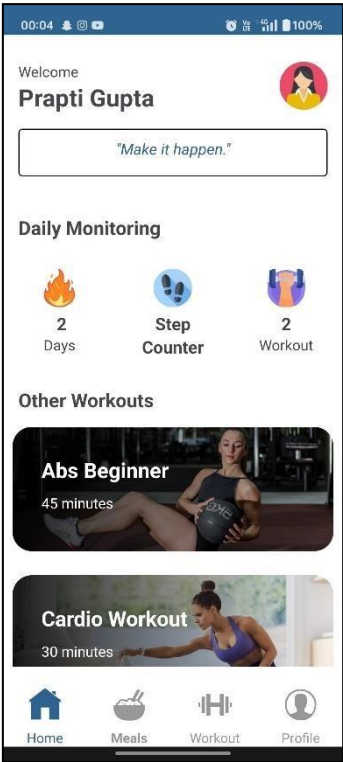












5.2 Snapshots of Database Tables

ActiveLife.db ▶ instruction					
Reset Filters Records: 28					
	instruction...	exercise...	instructions	breathing tips	focus areas
1	1	Jumping Jacks	Stand with feet tog...	Breathe out as you j...	• Arms • Legs • Cor...
2	2	Abdominal Crunches	Lie on your back wi...	Exhale fully as you l...	• Arms • Legs • Cor...
3	3	Russian Twist	Sit on the floor with...	Exhale as you twist ...	• Core • Obliques
4	4	Mountain Climber	Start in a plank posi...	Exhale as you drive ...	• Core • Arms • Legs
5	5	Heel Touch	Lie on your back wi...	Exhale as you reach...	• Core • Obliques
6	6	Leg Raises	Lie on your back wi...	Exhale as you lift yo...	• Core • Lower Abs
7	7	Plank	Start in a push-up p...	Breathe steadily. D...	• Core • Arms • Sho...
8	8	Cobra Stretch	Lie face down and ...	Inhale deeply as yo...	• Lower Back • Core
9	9	Stretch Left	Stand with feet tog...	Inhale deeply as yo...	• Side Body • Arms
10	10	Stretch Right	Stand with feet tog...	Inhale deeply as yo...	• Side Body • Arms
11	11	Incline Push-Ups	Place your hands ou...	Inhale as you lower ...	• Chest • Shoulders ...
12	12	Push-Ups	Start in a plank posi...	Inhale as you lower ...	• Chest • Shoulders ...
13	13	Wide Arm Push-Ups	Start in a plank posi...	Inhale as you lower...	• Chest • Shoulders ...
14	14	Triceps Dips	Sit on the edge of a...	Inhale as you lower...	• Triceps • Shoulder...
15	15	Knee Push-Ups	Start in a plank posi...	Inhale as you lower ...	• Chest • Arms • Core
16	16	Arm Raises	Stand with feet sho...	Inhale as you lift yo...	• Shoulders • Arms
17	17	Side Arm Raises	Stand with feet sho...	Inhale as you raise ...	• Shoulders • Arms
18	18	Arm Circles Clockw...	Stand with arms ext...	Breathe steadily thr...	• Shoulders • Arms
19	19	Diamond Push-Ups	Start in a push-up p...	Inhale as you lower...	• Triceps • Chest • S...
20	20	Diagonal Plank	Start in a standard ...	Breathe steadily wh...	• Core • Shoulders •

ActiveLife.db ▶ exercise			
Reset Filters Records: 41			
	exercise_id	exercise_name	workout_id
1	1	Jumping Jacks	1
2	2	Abdominal Crunches	1
3	3	Russian Twist	1
4	4	Mountain Climber	1
5	5	Heel Touch	1
6	6	Leg Raises	1
7	7	Plank	1
8	8	Cobra Stretch	1
9	9	Stretch Left	1
10	10	Stretch Right	1
11	11	Jumping Jacks	2
12	12	Incline Push-Ups	2
13	13	Push-Ups	2
14	14	Wide Arm Push-Ups	2
15	15	Triceps Dips	2
16	16	Knee Push-Ups	2
17	17	Cobra Stretch	2
18	18	Arm Raises	3
19	19	Side Arm Raises	3
20	20	Triceps Dips	3

ActiveLife.db ▶ 📅 workout					
Reset Filters		Records: 5			
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	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	
1	1	Abs Beginner	2131165515	45 minutes	
2	2	Cardio Workout	2131165510	30 minutes	
3	3	Strength Training	2131165517	20 minutes	
4	4	Lower Body Stretchi...	2131165527	50 minutes	
5	5	Full Body Workout	2131165415	40 minutes	

ActiveLife.db ▶ 📅 quotes			
Reset Filters		Records: 18	
	id 🔑 🔍 🔒 🔥	quote 🔍 🔒 🔥	
	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	
1	1	No pain, no gain. Shut up and train.	
2	2	Dream it. Wish it. Do it.	
3	3	Good things come to those who sweat.	
4	4	Progress, not perfection.	
5	5	Small steps every day.	
6	6	Stronger than yesterday.	
7	7	Sweat now, shine later.	
8	8	Make it happen.	
9	9	Keep pushing forward.	
10	10	You are your only limit.	
11	11	Today's effort leads to tomorrow's success.	
12	12	Results happen over time, not overnight.	
13	13	Believe you can and you're halfway there.	
14	14	Start where you are. Use what you have.	
15	15	Fall in love with taking care of yourself.	
16	16	Every workout counts.	
17	17	Your only limit is you.	
18	18	Push harder than yesterday.	

ActiveLife.db ▶ 📅 user_info										
Reset Filters		Records: 2								Search 2 records...
	info_id 🔑 🔍 🔒 🔥	user_id 🔍 🔒 🔥	city 🔍 🔒 🔥	gender 🔍 🔒 🔥	age 🔍 🔒 🔥	active_status 🔍 🔒 🔥	height 🔍 🔒 🔥	current_weight 🔍 🔒 🔥	target_weight 🔍 🔒 🔥	medical_con... 🔍 🔒 🔥
	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>
1	1	1	Mumbai	Female	21	Moderate Active	155	55	50	PCOS, Breathing Iss..
2	2	2	Ahmedabad	Male	25	Moderate Active	168	68	72	None

ActiveLife.db ▶ user_credentials

Reset Filters

Records: 2

Search 2 records...

	id		name	email	password		
	<input type="text" value="Search column..."/>		<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>		
1	1		Prapti Gupta	praptig2008@gmail...	prapti1234		
2	2		Yash Gupta	yash@gmail.com	yash@1234		

ActiveLife.db ▶ workouts_completed

Reset Filters

Records: 3

	id		user_id	workoutName	workoutTime	workoutCalo...	workoutRating	
	<input type="text" value="Search column..."/>		<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	<input type="text" value="Search column..."/>	
1	1	1	1	Abs Beginner	45 minutes	137	4	
2	2	2	1	Cardio Workout	30 minutes	124	4	
3	3	3	2	Strength Training	20 minutes	118	3	

</> ActiveLifeLogin.xml ×

```
1 <?xml version='1.0' encoding='utf-8' standalone='yes' ?>
2 <map>
3   <boolean name="isAlertShown" value="true" />
4   <int name="currentStreak" value="1" />
5   <string name="lastCompletedDate">2024-11-04</string>
6   <boolean name="isLoggedIn" value="true" />
7   <long name="userId" value="1" />
8   <int name="stepCountTarget" value="50" />
9 </map>
10
```

6. CONCLUSION AND FUTURE SCOPES

Conclusion

The fitness management app provides an all-in-one solution for users looking to improve their health and fitness. By combining workout guidance, meal planning, progress tracking, and motivational features, the app encourages users to stay consistent and engaged in their fitness journey. Its user-friendly design and comprehensive approach make it a valuable tool for anyone seeking to adopt a healthier lifestyle. The app's development has shown the potential of integrating multiple health-related functions into a single platform, enhancing accessibility and convenience for users.

Future Scope

Looking ahead, the app has several opportunities for enhancement and expansion. Potential future developments include:

- **Customizable Workouts and Meal Plans:** Introducing personalized plans based on user preferences, goals, and fitness levels to make the experience even more tailored.
- **Integration with Wearable Devices:** Connecting with popular fitness trackers to provide users with more precise health data, such as heart rate monitoring and sleep tracking.
- **Community and Social Features:** Adding a feature where users can join groups, share achievements, and connect with friends to foster a supportive fitness community.
- **Advanced Analytics and AI Recommendations:** Using AI to provide smart recommendations for workouts and meal plans based on user progress, helping them achieve their goals more effectively.
