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GRADUATION PROJECT 1

Gym Management App

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We are grateful to our families and friends for their love, encouragement, and patience during the long hours spent working on this project.

2 Disclaimer

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3 Abstract

A gym management app is a software tool supported by web and mobile, designed to help gym owners and trainers Simplify their operations and provide better services to their members The app provides a range of features including member registration and management, Workout scheduling, making custom or advanced plans, and a Nutrition plan, members can purchase supplements, view health tips, and do billing and payment processing. The app is user-friendly and easy to use, allowing gym staff to efficiently manage daily operations and provide better support to members.

Additionally, a gym management app can also help with marketing and Advertising by allowing gym owners to send targeted promotions and offers to members based on their interests and preferences. It also provides detailed reporting and analytics to help gym owners track membership growth and revenue.

Another benefit of using a gym management app is the ability to provide a better customer experience. Members can easily view workout plans, their membership information, and their progress through the app. They can also receive notifications of new workouts or updates. This helps build a stronger relationship between the gym and its members and fosters a sense of community and engagement. The project aims to address the challenges traditional gym management methods face and improve the efficiency of gym operations. The software will be a valuable tool for gym owners and managers, providing a robust solution for managing their gym and ensuring a positive experience for members.

Finally, after searching and gathering information about this idea we got to those points the application isn't common in the gyms in our country, and a high percentage of new trainees face many problems when start hitting the gym because of the lack of information they have about nutrition plans and the best attitude for targeting muscles and in worst seniors end up with an injury preventing them from doing this sport again so the application will provide all the information needed by providing photographed videos tutorials about all exercises for each muscle and a full meal tutorial provided by the nutrition's also the application will have a payment method for renewing the monthly fees.

4 Introduction

4.1 Background and Motivation

The gym management side of the fitness industry has gained significant importance due to its large growth in recent years. Nevertheless, a lot of gym owners and administrators continue to use manual methods to oversee their gyms, which may consume a lot of time, be ineffective, and be prone to errors. When faced with such difficulties, there could be a decline in customer satisfaction, a decrease in earnings, and in the end, decreased business success.

We created software for managing gyms that automates a majority of the manual tasks related to gym management, in order to tackle these challenges. Our application offers a simple and easy-to-use platform for gym supervisors and owners to handle memberships, Workout-classes, and schedules, and also supervise attendance and payments. Our app has the ability to enhance business results by allowing gym owners and managers to save time and be more efficient through process automation.

Our passion for technology and fitness served as the inspiration for creating this app. We, as computer engineering students, saw an opportunity to apply our technical know-how to a practical problem in the fitness industry. Our perspective is that the gym management application we have developed has the capability to bring about constructive change in the fitness sector as it enhances the management experience of gyms for both customers and owners.

Furthermore, we acknowledge that our application has the capacity to aid in the advancement and growth of small to medium-scale gym enterprises. Our application is capable of assisting these businesses to compete with bigger gym franchises and draw in new users by offering a budget-friendly and simple gym management system. Overall, The main purpose of our gym management application is to offer a complete resolution for gym owners and managers, while simultaneously aiding in the expansion and growth of the fitness field.

4.2 Problem

As mentioned in the Background and Motivation section, a lot of gym owners and managers are still reliant on tired, ineffective, and error-prone manual techniques to manage their gyms. Additionally, depending on these non-automated methods may lead to dissatisfied clients, decreased revenue, and ultimately, decreased growth for the business. The main objective of our app for gym management is to improve the user experience by treating the problems associated with ineffectiveness and unfriendliness. We try to provide gym owners and managers with a technological solution that can reduce the necessity for manual operations in managing the gym, while also improving the overall experience of their customers.

4.3 objectives

our objectives for the gym management app aim to address the main problem of manual gym management processes, while also improving the customer experience, increasing efficiency and accuracy, and providing valuable insights to gym owners and managers.

4.4 Scope of the Project

The scope of our gym management app project is to develop a comprehensive software solution that addresses the problems and objectives outlined in the Problem Statement and Objectives sections. The app is designed for use by gym owners and managers, as well as their customers.

4.5 Importance

Our gym management app simplifies operations, automates tasks, and provides valuable ideas to improve the efficiency and success of fitness facilities, and contributes in :

1. Automate manual gym management processes: Our app will automate the management of memberships, sells supplements, payments, trainee workout tracking, trainee nutrition, and healthy recipes, facilitate communication between coaches and trainees using the chat system and notifications, and locate the location of the gym, reducing the time and effort required for these processes
2. Improve customer experience: Our app will provide customers with an easy-to-use platform to view nutrition, Workout plans, and manage their memberships, manage their profiles, in addition to communicating with their coach and Nitro Gym community leading to a better customer experience.
3. Increase efficiency and accuracy: By automating gym management processes, our app will increase efficiency and accuracy, reducing errors and minimizing the potential for revenue loss.

4. Provide valuable insights: Our app will provide gym owners and managers with valuable insights into their business, such as member subscriptions, and revenue, enabling them to make data-driven decisions to improve their business.

4.6 Report Organization

The report is structured into seven distinct phases, starting with an introduction and then proceeding to a section on constraints, standards, and codes. Following that, we go into previous coursework suitable to the project and highlight the key challenges. A literature review chapter and a methodology chapter will outline the project's developmental stages, including the tools and technologies used. Our results and discussion section will detail the obstacles we get over and the successes we achieved. Lastly, we will provide recommendations and future development goals in the conclusion chapter.

5 Constraints, Standards, and Earlier coursework

5.1 Constraints and Limitations

1. feature constraints: we faced many challenges when searching for all the necessary features that must implement together in order to serve all trainee requirements.
2. Time Limit for Developing Nitro Gym app: The time frame for developing the Nitro Gym app was constrained by various factors, including the team's existing Commitments such as managing gym operations and handling other projects. In addition, since this was our first experience developing apps using Flutter and Dart programming languages, it required a significant amount of time to ramp up at the beginning of the development cycle, which was limited to just four months.
3. fixed budget for development and implementation: certain features were not included in the app due to the associated costs for implementing them, These limitations were taken into consideration throughout the development process to ensure that the project was completed within the set budget and time frame.
4. platform constraints: we test and build our project on Android devices due to the lack of resources for IOS Devices

5.2 Standards

5.2.1 Provider pattern

The Provider pattern was employed in our system. We could divide the entire project into different layers to make it easier to follow the flow of work. These layers are as follows:

1. The Provider Layer: It represents the state management layer of the application. It will manage and provide access to the app's state to the other layers.
2. The Presentation Layer: It represents the user interface of the application. It will respond to the changes in the app's state and update the views accordingly.
3. The Data Layer: It represents the source of data for the application. It could be an API, database or any other source of data. The data layer communicates with the provider layer to fetch and update data.
4. The Services Layer: It represents the business logic of the application. It facilitates coordination and cooperation between the data layer and the presentation layer to provide a seamless user experience.

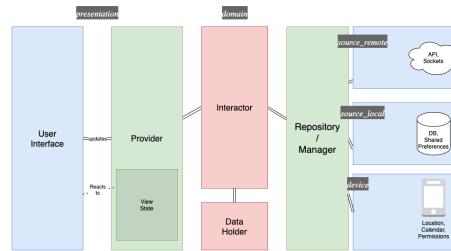


Figure 1: Provider pattern Figure explanation

5.2.2 Agile Model

The Agile methodology is a project management approach that involves breaking the project into phases and emphasizes continuous collaboration and improvement. Teams follow a cycle of planning, executing, and evaluating. . We classified the tasks we had to do into the following five groups:

1. Brainstorming to get all needed requirements and features required.
2. Design the requirements: We designed the UML diagram to clarify the functionality of new features and how they will interact with our system.
3. Development part: for this part, we started writing the code for the front end, and after we finish all the code required for the front part, we begin writing the code for the back end of each screen in the app.
4. Testing: we connect the back end with the front end and make sure that every page works correctly
5. Feedback: we kept getting feedback from our supervisor to ensure that the app that we built satisfied the requirements.

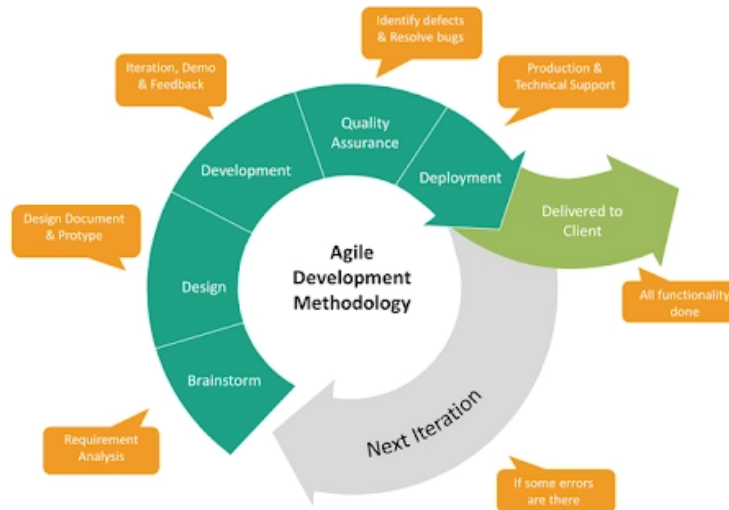


Figure 2: Applying Agile mode

5.3 Earlier coursework

The Computer Engineering courses that we attended set us up with valuable knowledge that we applied in developing this app. The principles of Web Programming and Object-Oriented Programming, which we learned in our coursework, were the building blocks of this project. Additionally, we augmented our skills by enrolling in online courses on Node.js, MYSQL, Flutter, and Firebase, which were instrumental in the successful implementation and development of our app.

6 LITERATURE REVIEW

For many years, gym management systems have existed in various forms, beginning with basic paper records and advancing to digital systems. During the 1980s, gym owners were able to track membership, attendance, and billing with the implementation of the initial gym management software. During the 2000s, web-based gym management systems gained popularity, enabling gym owners to oversee their operations remotely as long as they had an internet connection.

The fitness industry has experienced significant growth in recent years, Because more people are adopting healthier lifestyles and placing a higher value on their physical health, health and fitness have experienced significant growth in recent years. The number of gyms and exercise facilities worldwide has increased due to a rise in fitness awareness, and as a result, the gym and health club industry generated over 94 billion dollars in revenue in 2019.

The popularity of mobile applications in the fitness sector has risen significantly as they can effectively face diverse problems and simplify procedures. The Nitro Gym mobile application provides an extensive collection of features and services to improve the overall experience of its clients. By utilizing the app, users are able to access and book classes, track their fitness progress, and receive personalized workout plans from certified trainers. Moreover, the application provides the ability to track nutrition, facilitates social interactions for users to connect with gym subscribers and trainers, as well as has a collection of workout videos and tutorials. In addition, the app's interface is user-friendly and its navigation is smooth, which enables users to easily organize their fitness routines and remain motivated. Nitro Gym aims to offer a well-rounded approach to fitness and tackle the obstacles that people face in maintaining a healthy way of living.

We should mention that other available gym systems suffer from some lack of available features some of them implement full nutrition tools and meanwhile miss some other features like a full exercise system or chatting system with the coaches or other trainees but nitro gym provided the users with a full package of all needed feature

7 Methodology

Based on the research and literature review conducted on fitness and gym apps, it can be concluded that Nitro Gym is a great idea and a step toward promoting fitness and healthy living. This chapter discusses the research methodology, including data collection, analysis, and processing. It also covers the tools, methods, and systems utilized in the development of Nitro Gym and the findings obtained.

7.1 Tools, Methods and Programming Languages

In order to develop the Nitro Gym Management app, we utilized a variety of tools, methods, and programming languages. For the front-end development, we used Flutter and Dart programming languages, which allowed us to create a modern and intuitive user interface. For the backend development, we utilized Node.js and Express.js to create a RESTful API for handling the app's data and logic. We also designed a relational database schema using MySQL to store and manage the app's data. Throughout the development process, we followed the Agile methodology and utilized Git for version control to ensure efficient collaboration among team members.

7.1.1 Client Side

- **Design:** The design of the client side of the Gym Management App began with the selection of the idea, followed by extensive research to devise a creative and innovative concept for the application’s design. Our decision to pursue this idea was based on our passion for fitness and a desire to create a more effective and user-friendly gym management tool for ourselves and other fitness enthusiasts. Rather than using a pre-designed application UI template, we devoted considerable effort to designing a unique user interface (UI) for the application. The UI design was developed internally based on the research conducted, taking into consideration user requirements and industry best practices. This allowed us to create a custom, user-friendly, and aesthetically pleasing design that is consistent with the overall theme and brand of the application. and we carefully selected a color theme that would enhance the user experience and enable them to feel at ease while using the application. The design of the majority of the application and website pages was kept simple, easy to use, and basic to ensure user-friendliness. In addition, we incorporated modern design elements to keep the application up-to-date and in line with current trends in the industry.
- **Framework:** We decided to leverage the power of Google’s cross-platform UI framework for client-side development. Flutter is a popular open-source mobile application development framework created by Google that utilizes the Dart programming language. It offers a wide range of features, including hot-reload, widget-based development, and platform-specific widgets, among others. Through Flutter, we can create mobile apps for iOS and Android with a single code base that renders everything on its own, eliminating the need for previous native programming for these two platforms and saving a significant amount of time and effort in developing cross-platform apps. Therefore, Flutter is a viable and efficient tool for developing mobile applications, and we chose to use it for our gym management app for its reliability, speed, and cross-platform capabilities. Flutter’s popularity has grown steadily over the years, with Google’s support and the community’s contributions. As of May 2023, Flutter has been downloaded more than 290 million times worldwide, and there are over 120,000 Flutter packages available for developers to use, demonstrating its extensive ecosystem.

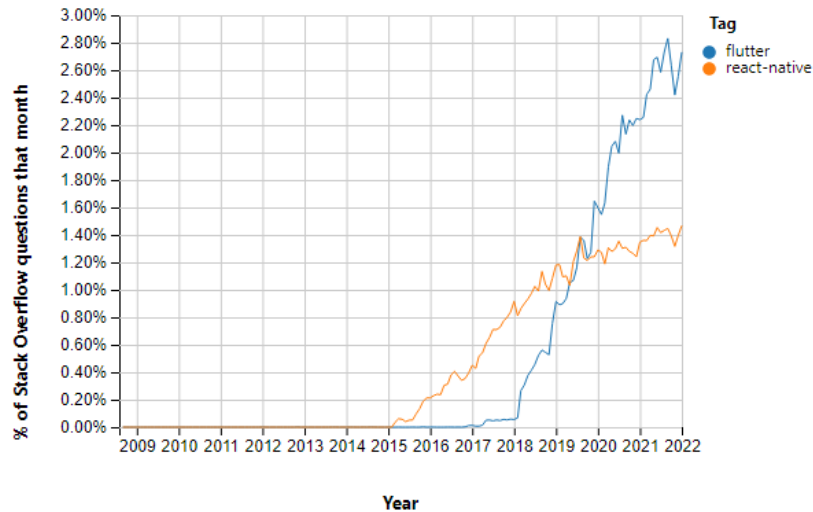


Figure 3: From 2009 through 2022, Flutter’s explosive rise in popularity and the features that make it so advantageous for developers

- Programming Languages:** Dart is the programming language utilized in Flutter for client-side development, which was developed by Google and is object-oriented. Similar to C++, Java, and JS, it is a compiled language that is type-safe and has scripting capabilities akin to Python and JavaScript. We found it easy to learn and work with due to our familiarity with these languages from university. Despite being a young language, it boasts many libraries that simplify and expedite the script-writing process, and its popularity is skyrocketing.
- Website:** In the website section, it can be mentioned that the website is built using the same client-side technology as the mobile app, utilizing the cross-platform UI framework of Flutter. This approach ensures consistency in design and functionality across all platforms, providing a seamless user experience. Additionally, Flutter’s ability to render high-performance web applications with the same codebase used for mobile apps is a significant advantage, reducing development time and effort while maintaining code maintainability.

7.1.2 Server Side

- **Architecture of the server-side:** We implemented the client-server architecture for our gym management system, allowing multiple clients such as the website and mobile application to utilize the same API. Our servers were designed to support a RESTful API, ensuring efficient communication between the clients and the server.

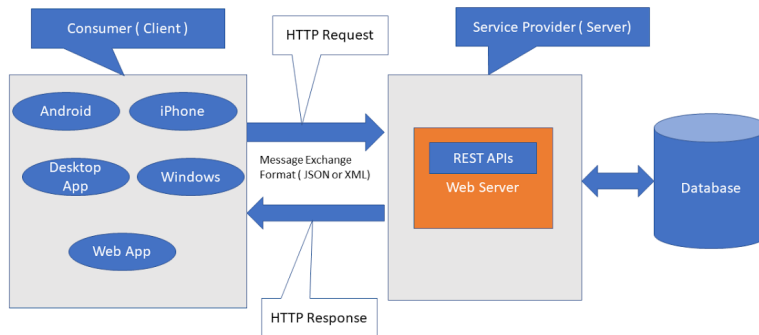


Figure 4: client server architecture

- **Server Side Framework :** We Work with Node js and Express js. framework for the server-side environment because they work well together to build server-side applications. We chose Node.js because it has many features that make it perfect for our needs, such as ease of learning, excellent documentation, scalability, and performance. Express.js is a back-end development framework and is widely regarded as the benchmark for server frameworks within the Node. Thanks to the combined use of Node and Express, our application now has a reliable and efficient server-side structure.

7.1.3 Integrated Development Environments (IDEs)

we utilized Visual Studio Code as our primary IDE for writing JavaScript code for the REST API. Visual Studio Code is a free, open-source, cross-platform code editor . It is well-known for its powerful extensions, which enable developers to extend its functionality and customize their development environment to their specific needs. We found Visual Studio Code to be a robust and user-friendly IDE that is well-suited to building complex applications. Its advanced features, such as IntelliSense, debugging, and code navigation, helped us write clean, efficient, and error-free code. Furthermore, it has built-in support for Git, which made it easy for us to manage our code repositories and collaborate with our team member. As our project involved developing both Android and iOS platforms, we required an IDE that could cater to both. After evaluating our options, we decided to go with Android Studio, which allowed us to develop, debug, and test our code for both platforms in one place. However, we faced the challenge of testing different functionalities for Android and iOS separately. As Android Studio is primarily designed for testing Android apps, we were unable to test iOS apps on our PCs because it's need a MAC device to do it.

7.1.4 Version Control

To effectively manage the large size of our gym project and ensure proper backup and version control, we created three GitHub separate repositories. The first repository was dedicated to storing the app code, the second repository was for the server-side RESTful API code, and the third repository was dedicated to the web version of the app code. Version control was essential for our project as it allowed us to keep track of changes made to the code over time, identify and fix any issues or bugs that arose, and collaborate effectively as a team. It also provided us with a secure backup of all the code, enabling us to easily revert to a previous version if necessary. By utilizing version control, we were able to streamline the development process, reduce errors and conflicts, and ensure the stability and scalability of our project in the long term.

7.1.5 Testing of the Server and API

Testing the server and API is crucial in ensuring that the Gym Management project runs smoothly and without any hiccups. To that end, we utilized both Postman and Thunder Client to carry out our testing. Postman is a widely-used tool that helps developers test APIs more efficiently and effectively. With Postman, we were able to automate the process of testing our APIs, thus saving us a lot of time and effort. Furthermore, it allowed us to quickly and easily simulate different types of requests and responses, test edge cases, and validate our API's functionality and performance. Thunder Client, on the other hand, is a lightweight extension for Visual Studio Code that allows developers to easily test and debug their APIs without leaving their coding environment. By using both Postman and Thunder Client, we were able to thoroughly test

our server and API, ensuring that they met our high standards of functionality and reliability.

7.1.6 Data Visualization

In the Data Visualization section of our gym graduation project, we utilized the DrawIO tool to create a comprehensive database diagram that illustrates the grouping and relationships between various data elements.

7.2 Database Design

Database design is an essential aspect of any system development project. It involves the process of defining the structure, organization, and relationships of data within a database. In the case of our gym management system, the database design aims to capture and manage the relevant information required to effectively manage the gym's operations.

Our choice for database management system is SQLDB, as it will enable us to achieve our goal. SQLDB is an open-source system for managing relational databases, enabling organized data creation, storage, and manipulation. The objective of this design is to accommodate an extensive variety of database applications, and provide strong functionalities to handle the storage, access, and administration of data.

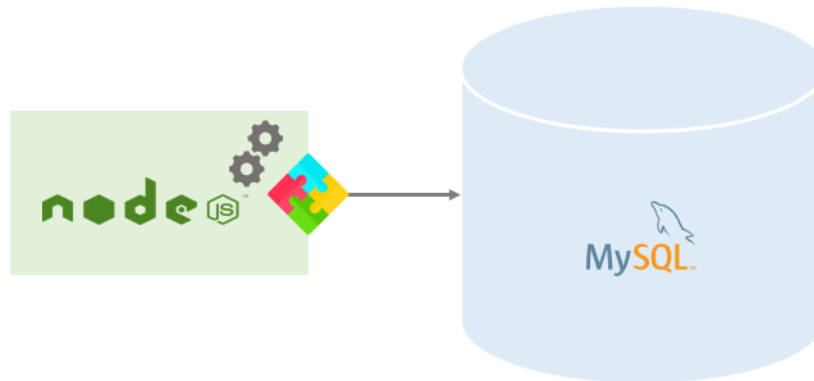


Figure 5: MYSQL DB with nodejs server

our database design for the gym management system includes a set of tables that represent the various entities involved in the system, such as members, trainers, exercise, and schedules. Each table has a set of fields that define the

attributes or properties of the entity it represents. For example, the member's table may include fields such as member ID, name, address, phone number, and membership status.

The tables in our database are linked together using relationships that define how data in one table is related to data in another. For instance, the workout table may be linked to the trainers and exercises tables to indicate the exercises assigned to a particular trainee and which equipment is required for the exercises.

In addition to the tables and relationships, the database design includes a set of constraints that ensure data integrity and consistency. These constraints define rules and conditions that data must meet before it can be added or updated in the database. For instance, the membership status field in the member's table may be constrained to only allow values such as "active," "disabled," or "pending."

Overall, the database design for the gym management system is an important component of the system's overall architecture. It provides a structured way to organize, store, and retrieve data, enabling efficient and effective management of the gym's operations. With SQLDB as your database management system, you have a powerful tool at your disposal to ensure the success of your project.

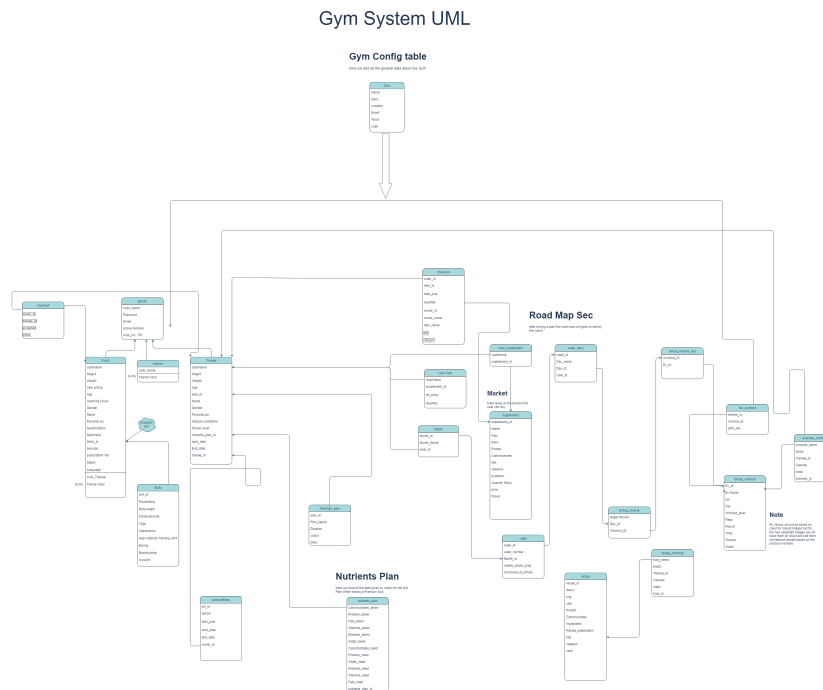


Figure 6: The UML diagram for the database.

7.3 System Features and Implementation

7.3.1 Login and Registration feature

Certainly! A splash screen is a visual element that appears when an application is launched. it's a graphic or animation that appears on the user's screen before the main application interface appears.

The purpose of a splash screen is to provide users with a momentary distraction during the app's loading process, while also reinforcing the brand identity of the application. A well-designed splash screen can enhance the user experience and create a positive impression of the app.

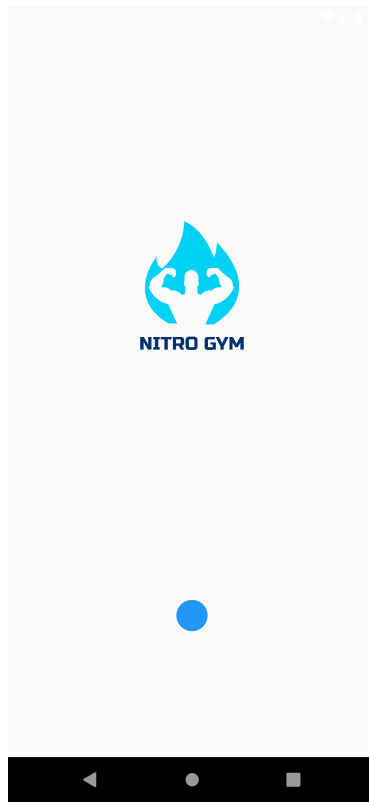
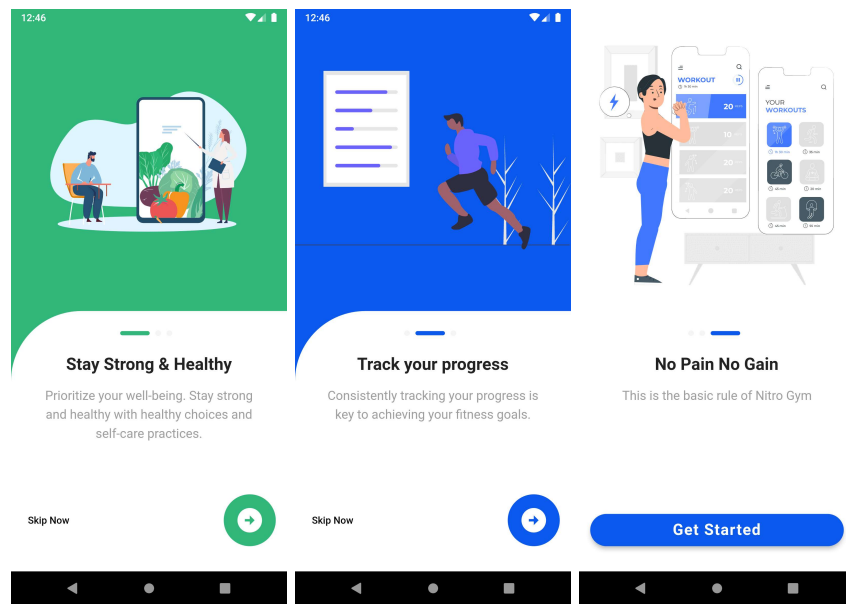


Figure 7: Splach Screen

The onboarding screen is the first screen that users see when they open the Nitro Gym application. It is designed to provide a quick overview of the app's key features and to help users get started with the app. The onboarding screen typically includes a welcome message, a brief description of the app's purpose. Overall, the goal of the onboarding screen is to provide a positive first impression of the app and to guide users through the initial setup process shown only one time at the first start of the application. By providing clear instructions and highlighting the app's key features, the onboarding screen can help to improve user engagement and retention.



(a) onboarding screen 1 (b) onboarding screen 2 (c) onboarding screen 3

Figure 8: onboarding screens

The welcome screen is a user interface element that follows the onboarding screen and is presented to the user upon their initial entry into the application. Its primary purpose is to provide a welcoming introduction to the user and establish a positive first impression of the application. Through its content and design, the welcome screen seeks to provide users with a brief but informative overview of the application's features and functionality, thereby guiding their initial interaction with the app and promoting a sense of ease and confidence in their user experience.

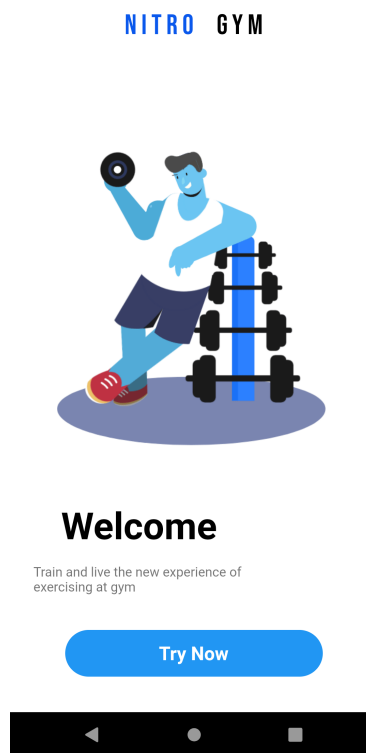


Figure 9: welcome Screen

The "About You" page is a user interface element in the application that is designed to gather information from the user about their role in the fitness community. It presents the user with a simple choice between two options: "trainee" or "coach", and depending on the user's selection, the page adapts to present relevant information and features.

Overall, the "About You" page is an important element in the application's user interface as it helps to tailor the user experience to the specific needs and preferences of each user. By collecting relevant information about the user's role in the fitness community, the application can provide more targeted and personalized features and services to enhance the user's fitness journey.

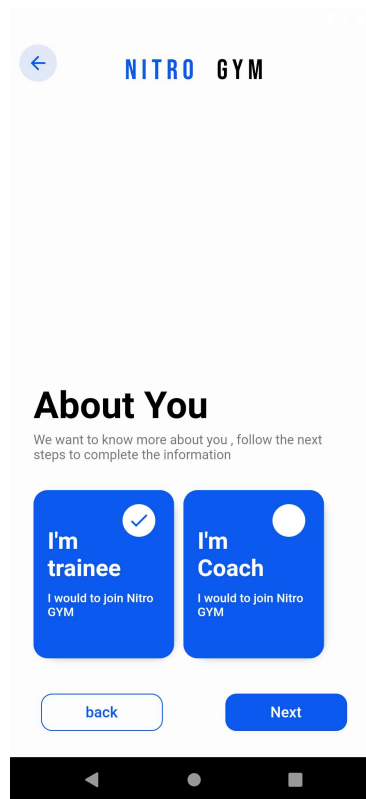


Figure 10: about Screen

one of the important parts of the application's user interfaces is the login page, through it, users can authenticate themselves before being allowed access to their accounts. To check the user's email and password if it is valid, a validation technique is applied to them. This is done to make sure that the user's information is secured and valid. The process of validating emails ensures that the email is in the correct format. The process of validating the password also includes verifying the passphrase to make sure that the user's password achieves validation conditions, such as minimum length. This ensures that the user's account has a powerful password that is hard to detect or break. if the user doesn't have an account he can sign up by clicking on the signup button , and if he has an account but he forgot the password, he can click on forgot password button and continue with the password recovery process which is based on the email, we will explain it in the password recovery section

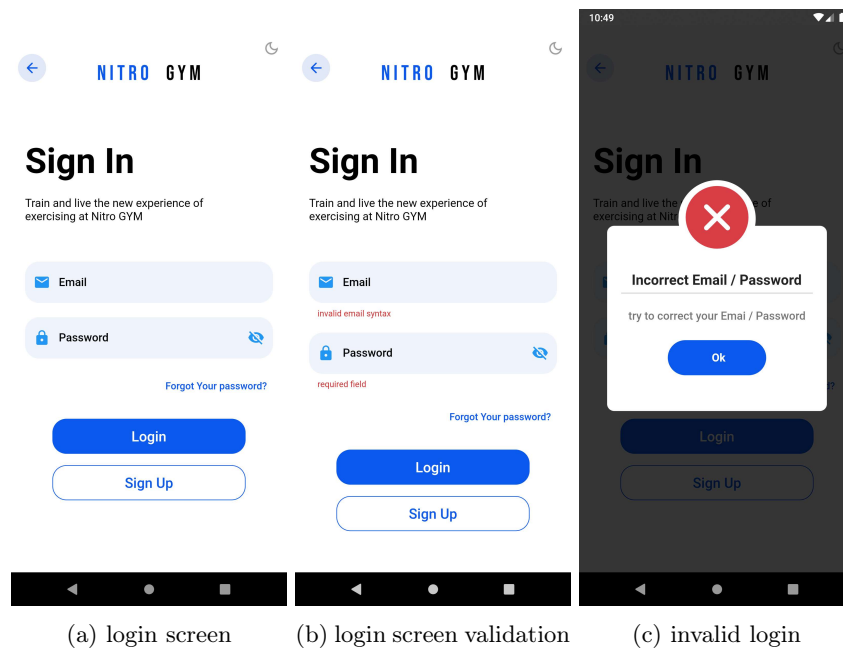
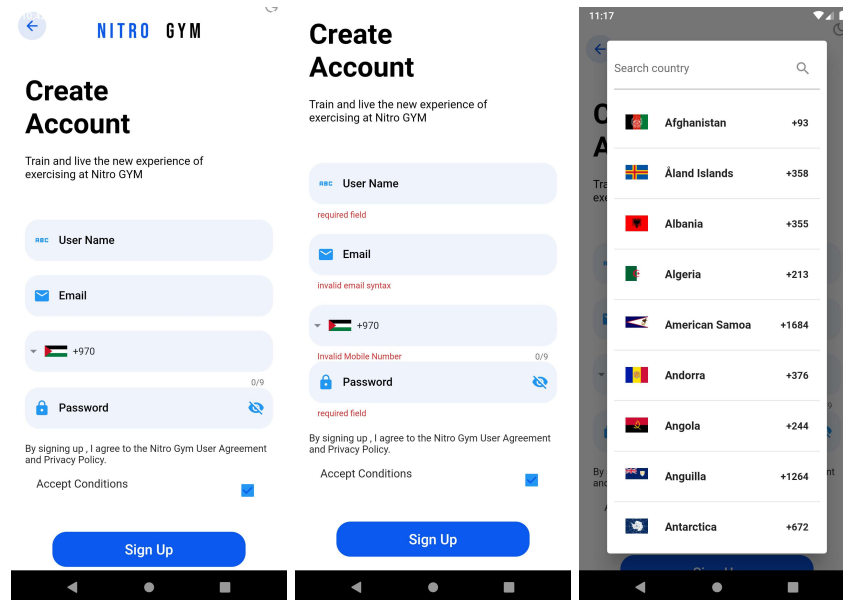


Figure 11: Logging screens

The sign-up page is a user interface element in the application that prompts the user to enter their email, password, username, and phone number in order to create an account. To, the page includes validation mechanisms for each of these fields. The email validation mechanism checks to ensure that the email entered by the user is in the correct format and meets any additional requirements set by the application, such as a minimum or maximum length. This helps to prevent users from entering incorrect or invalid email addresses and ensures that the user is able to receive important notifications and updates from the application. The password validation mechanism checks to ensure that the password entered by the user meets any requirements set by the application, such as a minimum length or specific character requirements. This helps to ensure that the user's account is protected. The username validation mechanism checks to ensure that the username entered by the user is unique and does not conflict with existing usernames in the application. This helps to prevent confusion. The phone number validation mechanism checks to ensure that the phone number entered by the user is in the correct format and meets any additional requirements set by the application, such as a specific country code or area code. Overall, the sign-up page with email, password, username, and phone number validation is an important element in the application's user interface as it helps to ensure the accuracy and security of the user's information. By prompting users to enter valid and unique information, the application can provide a more reliable and trustworthy user experience.



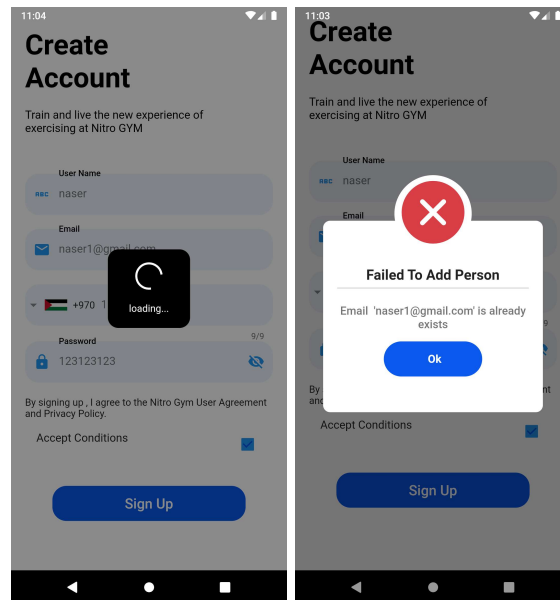
(a) sign up screen (b) signup validation (c) phone validation

Figure 12: Sign up screens

An invalid sign-up page is a user interface element in the application that prompts the user to create an account but is unable to accept the information provided by the user due to various reasons. This can occur when the user attempts to submit incomplete or incorrect information, or when the application is unable to verify the user's information for any reason.

When the sign-up page is invalid, the user may receive an error message or notification indicating the specific issue with their information. The user will then need to correct the invalid information and resubmit the form in order to successfully create their account.

Overall, an invalid sign-up page is an important element in the application's user interface as it helps to ensure the accuracy and security of the user's information. By providing clear feedback on invalid information and prompting users to correct their mistakes, the application can provide a more reliable and trustworthy user experience.



(a) sign up screen loading (b) invalid sign up

Figure 13: Sign up screens- invalid data

After the user has successfully created an account with valid data, this dialog must appear to the user and the next step is depending on the type of user that was selected in the previous section (About Screen), as shown in Figure 10. If the user is a trainee or coach, the system will display the appropriate screen with specific features and functionalities tailored to each role. This ensures a smooth and personalized experience for every user, enhancing their overall satisfaction with the application.

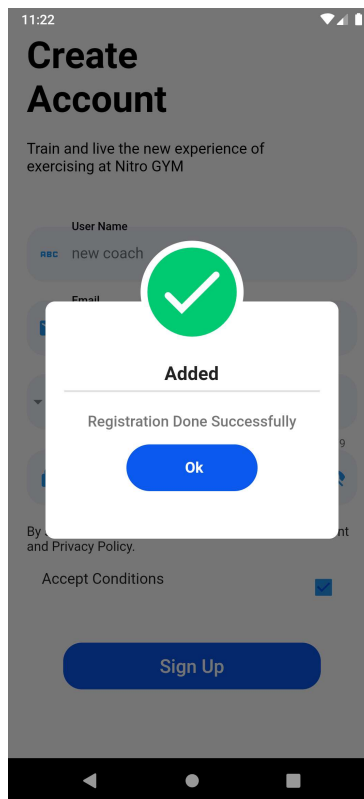


Figure 14: Success registration

The sign-up page is a user interface element in the application that prompts users to create an account by providing personal information, including a photo, height, weight, level of experience, etc

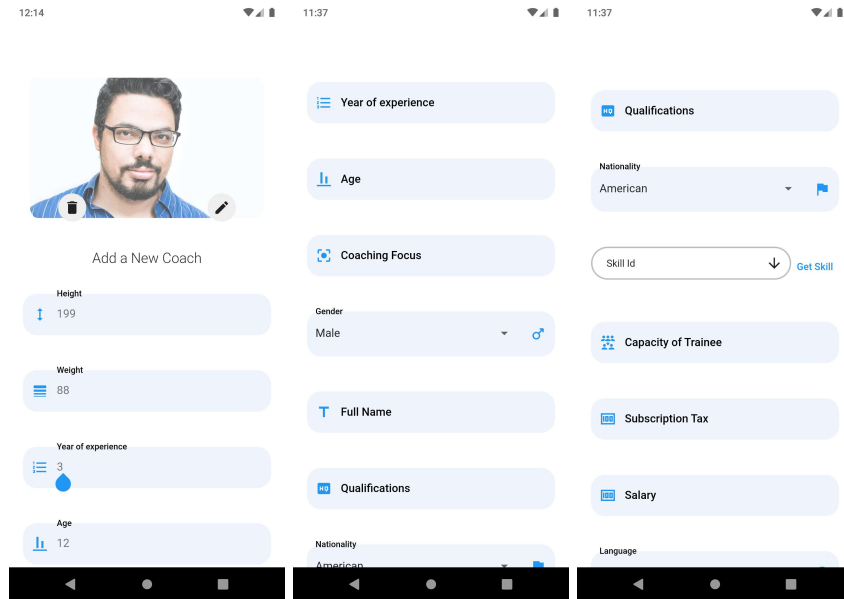
To ensure the accuracy and validity of the user’s information, the sign-up page may include validation mechanisms for each of these fields. This helps to prevent users from entering incorrect or invalid information and ensures that the user’s profile accurately reflects their personal details.

For example, the personal photo field requires the user to upload an image in a specific format or file size or may specify guidelines for appropriate content.

By capturing this information and validating it to ensure accuracy and security, the application can provide a more personalized and effective experience for the user. The user’s personal photo can help to personalize the user’s profile and make it more visually appealing, while the height, weight, and level of experience fields can be used to tailor the user’s experience within the application to show them for the trainee

Overall, a sign-up page with a personal photo, height, weight, and level of experience fields with validation mechanisms is an important element in the application’s user interface, as it helps to ensure the accuracy and security of the user’s information and provides a more personalized experience for the user.

7.3.1.1 Coach Experience :



(a) coach sign up 1

(b) coach sign up 2

(c) coach sign up 3

Figure 15: coach Application screens

To ensure the accuracy and validity of the user's information, the sign-up page may include validation mechanisms for each of these fields. This helps to prevent users from entering incorrect or invalid information and ensures that the user's profile accurately reflects their personal and professional details. For example, the qualification field may require the user to enter their highest degree or certification, while the nationality field may have a drop-down menu with predefined options. The capacity of the trainee field may require the user to specify how many trainees they are able to take on at once, and the subscription tax field may specify the cost of the subscription for the user's services. The skill list field may allow the user to select from a list of predefined skills or enter their own, which can help to showcase the user's expertise and make it easier for potential clients to find and select them for coaching services.

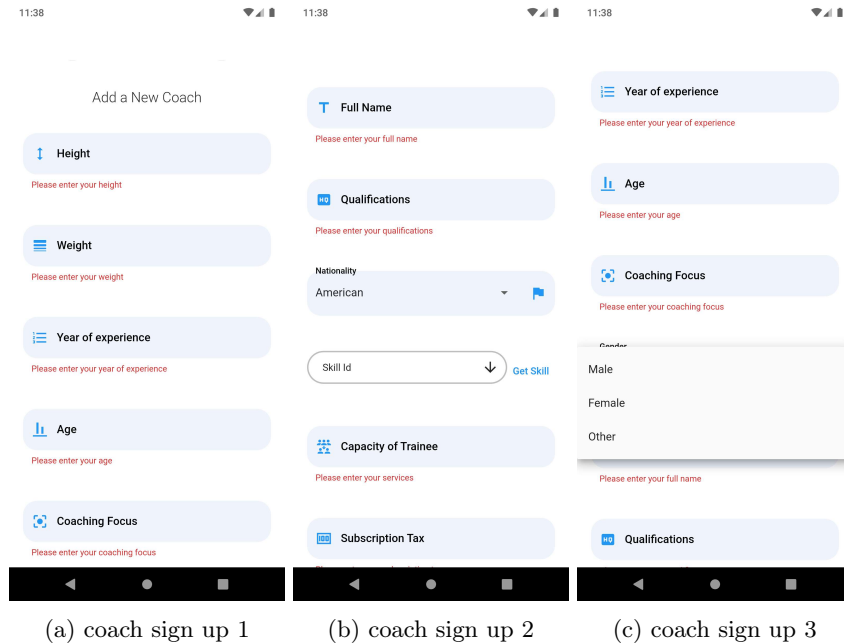


Figure 16: coach Application screens validation

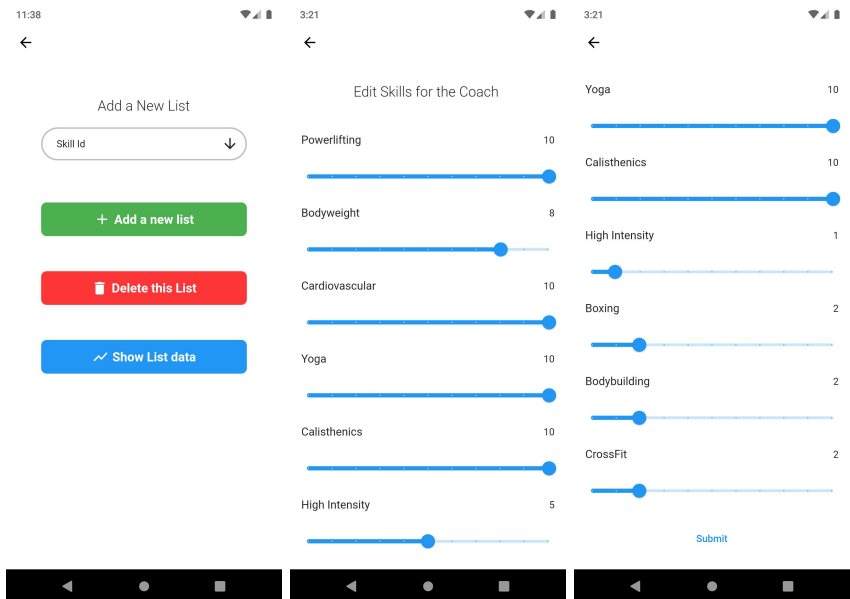
The skill list page is a user interface element in the application that allows coaches to create and manage their skill lists, which are used to showcase their expertise and help potential clients find and select them for coaching services.

The page may include options to create a new skill list, delete an existing list, and view the data associated with each list. Each skill list may include a variety of different skills or areas of expertise, such as yoga, boxing, HIIT, cardio, and others.

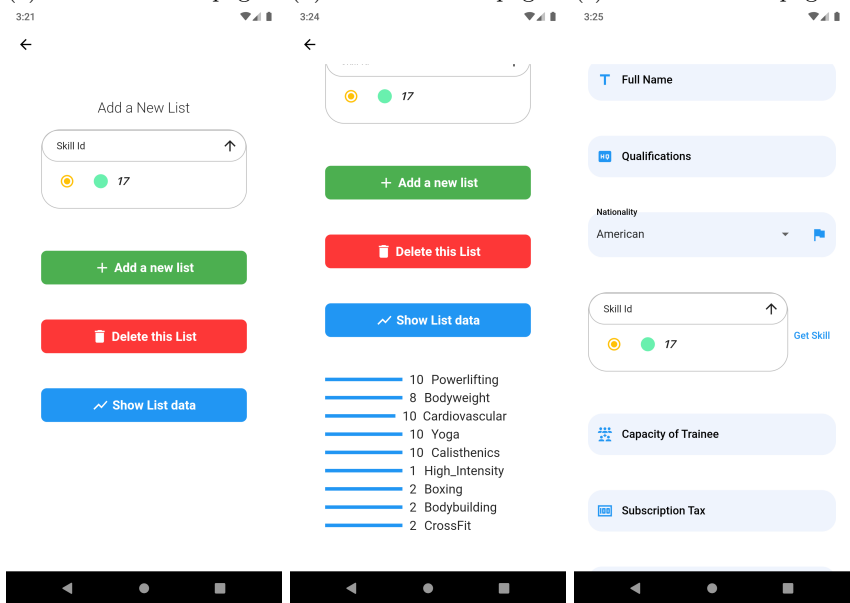
When creating a new skill list, coaches may have the option to add or remove skills as needed, or to select from a predefined list of skills provided by the application. The list may also include options to specify the coach's level of experience or certification in each skill, as well as any additional information or details that may be relevant.

Once a skill list has been created, coaches may be able to view and manage the data associated with it

Overall, a skill list page with options to create a new list, delete a list, and view the list data is an important element in the application's user interface, as it allows coaches to showcase their expertise and connect with potential clients more efficiently. By providing a comprehensive and easy-to-use skill list page, the application can help coaches to build their reputation and grow their coaching business.



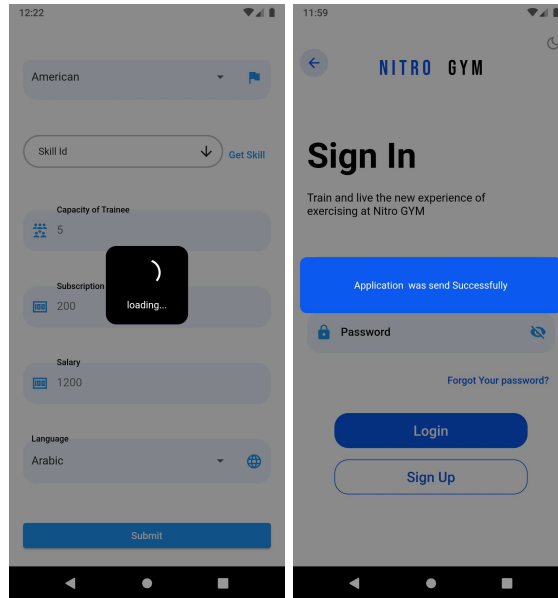
(a) coach skill List page 1 (b) coach skill List page 2 (c) coach skill List page 3



(d) coach skill List page 4 (e) coach skill List page 5 (f) coach skill List view

Figure 17: coach Application screens Skill List

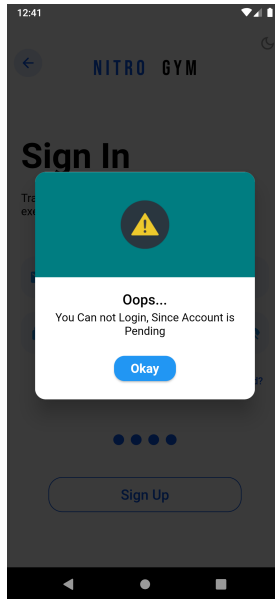
Once the coach has successfully filled in all the necessary details and the data has been verified for its validity, the application will send a notification to the admin, notifying them that a coach has requested to join the Nitro Gym staff. Until the coach's request has been approved, they will not be able to access the system, and their account status will be displayed as "pending." The coach will be notified as soon as the admin approves their request. It is important to note that the coach's account status will remain "pending" until their request has been reviewed and approved by the admin.



(a) Application Loading (b) Application Send

Figure 18: coach Application Send

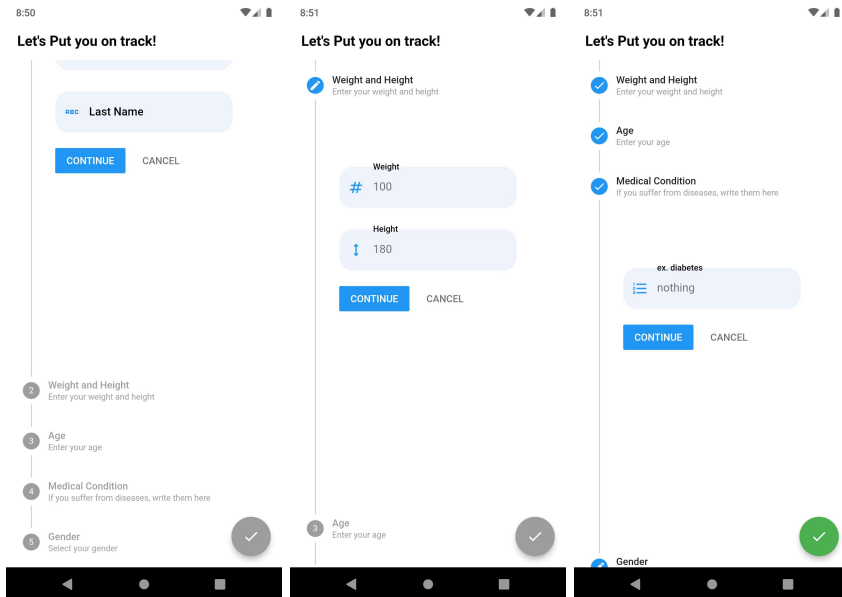
In the event that a coach attempts to access the system prior to receiving approval from the admin, a notification will appear on the user interface alerting the coach that their account is still pending and awaiting approval. The coach will not be granted access to the system until their request has been approved. This mechanism ensures that only authorized coaches are able to access the system and perform their duties.



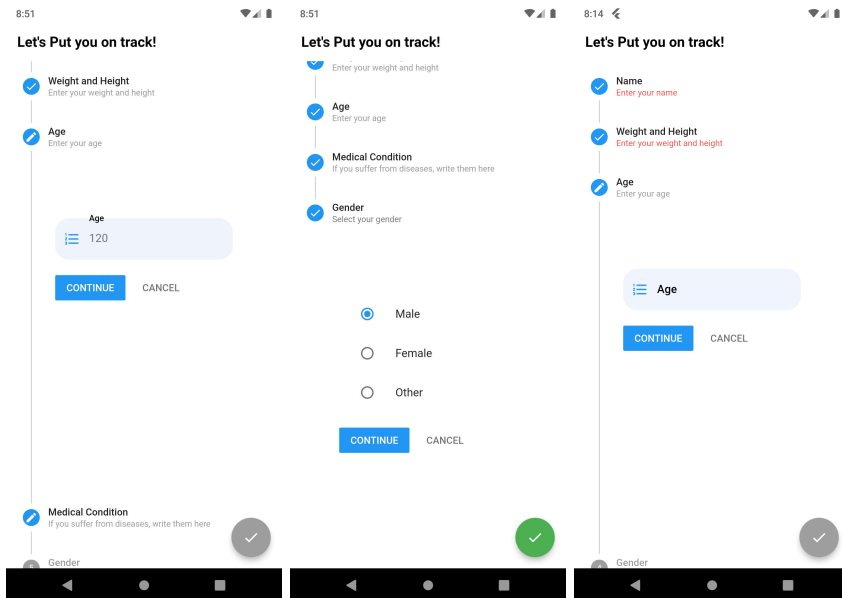
(a) alert dialog when the account is pending

Figure 19: Coach Alert Dialog

7.3.1.2 Trainee Experience : This page is specifically designed for trainees' registration, The trainee registration page is an essential part of the application, where the trainee can provide personal information about themselves to help the trainers create a personalized profile. Upon accessing the page, users will be prompted to fill in their first and last name, age, weight, height, and gender. It is important to note that if the trainee has any medical conditions or suffers from specific diseases, they must disclose it in the relevant field to ensure the trainers tailor the workout plan accordingly. This information is crucial for the coach when he wants to provide a tailored and effective workout routine for the trainee. Therefore, the trainee must ensure they provide accurate and up-to-date information. We also have implemented validation for each data input field to ensure that the data is accurate and reliable.



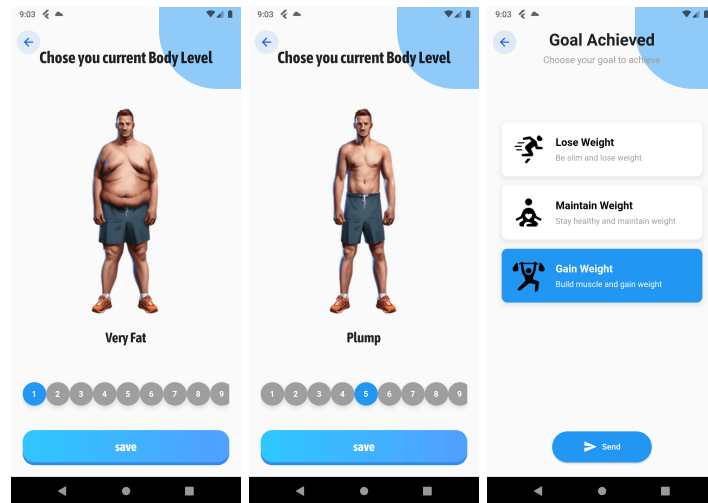
(a) trainee registration 1 (b) trainee registration 2 (c) trainee registration 3



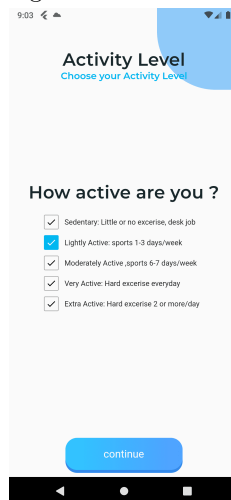
(d) trainee registration 4 (e) trainee registration 5 (f) information validation

Figure 20: trainee registration screens

here trainee can choose his body level , the goal that he wants to achieve, in addition to his activity level, this information is important when the trainee connects with coach, so it assists him in making nutrition plans and workout plans.



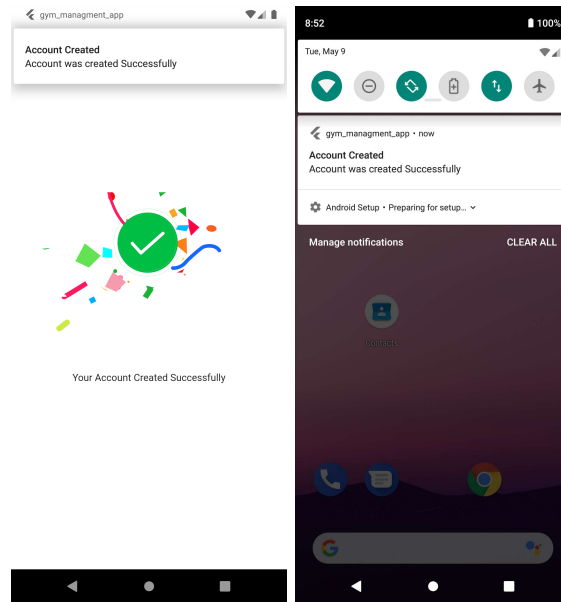
(a) trainee registration 1 (b) trainee registration 2 (c) trainee registration 3



(d) trainee registration 3

Figure 21: trainee registration screens-continue

Upon successful registration, a confirmation screen will briefly appear for a duration of 2 seconds. This screen serves as an indication that the trainee's information has been validated and that their registration process has been completed successfully. Furthermore, the trainee will receive a notification that confirms the successful registration of their account



(a) Successful registration (b) account notification

Figure 22: trainee account created successfully

7.3.1.3 password recovery : In Nitro gym, we provide a simple and secure password reset mechanism for our users. If a user forgets their account password, they can initiate the password reset process by entering the email address associated with their account. After submitting the email, a unique verification code will be sent to the user's email. Upon entering the correct code, the user will be granted access to reset their password. In case the user does not receive the code within a minute, they can request a new code by clicking on a designated button. Once the verification is successful, the user can proceed to the password change page, where the password can be updated securely.

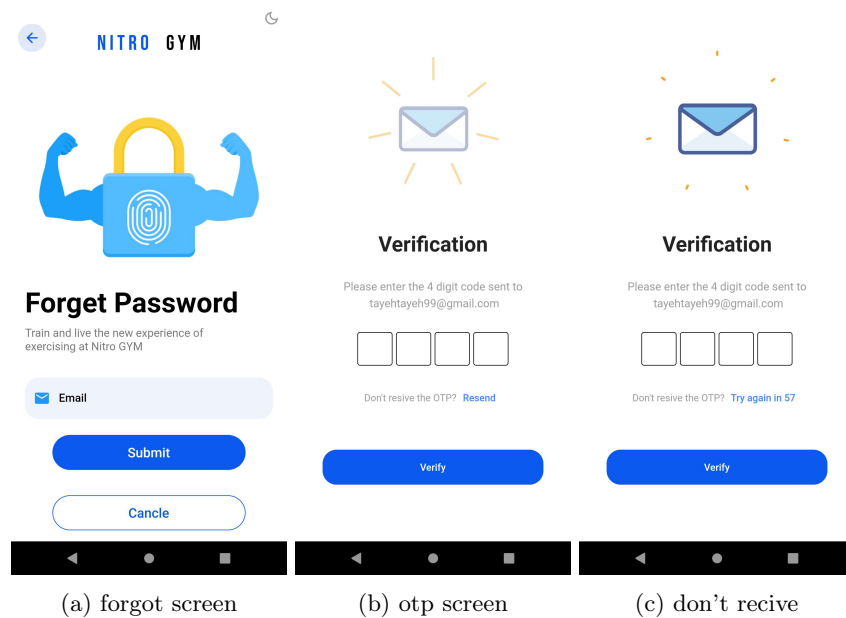


Figure 23: password recovery process

9:23

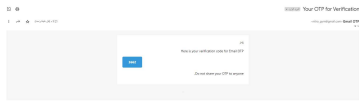


Verification

Please enter the 4 digit code sent to
tayehtayeh99@gmail.com

Don't receive the OTP? [Resend](#)

Verify



(a) email received

9:23



(b) otp received



NITRO GYM

RESET PASSWORD

Now you can have a new password
Just Fill this field

Submit

34



(c) reset password

Figure 24: password recovery process-continued

7.3.2 Home Screen Content and features

After performing a successful log-in process a loading screen will pop up and transfer the user to the main home screen

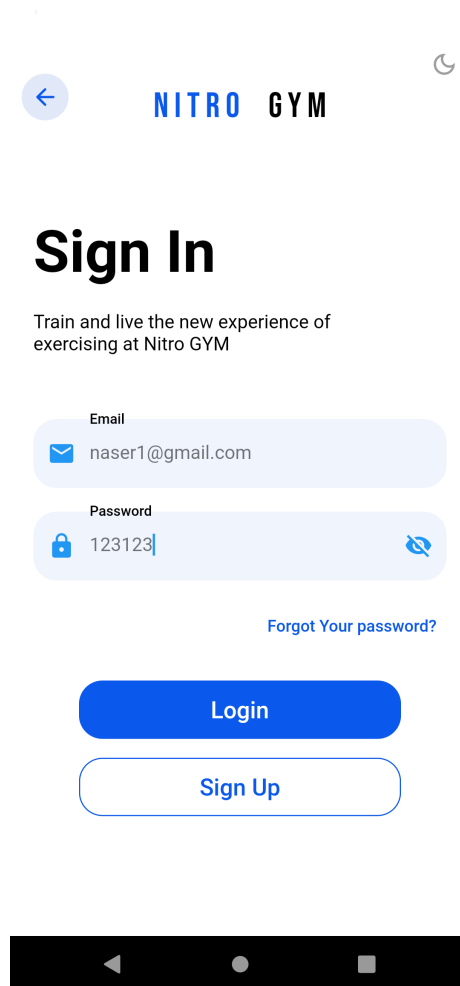
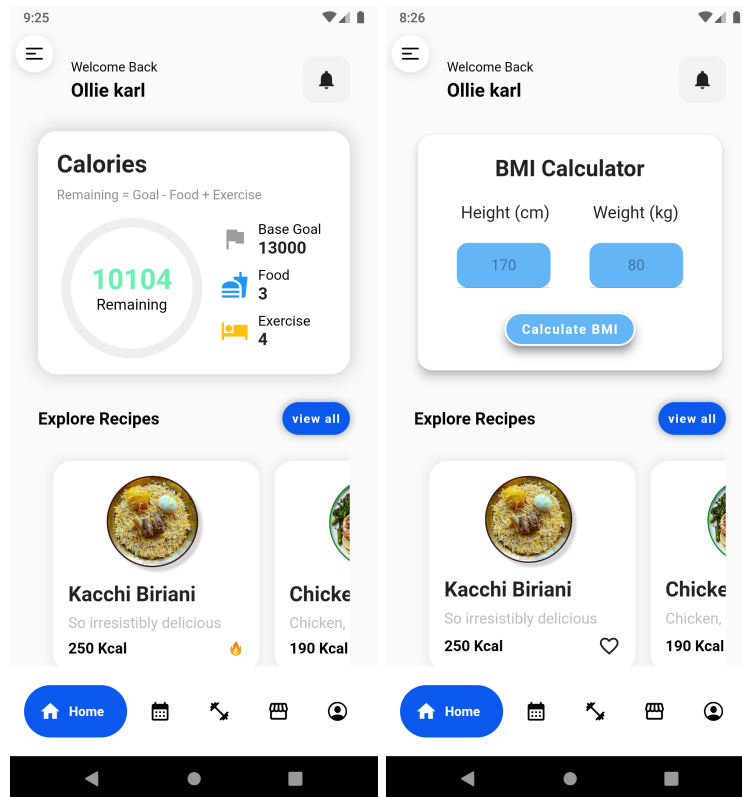


Figure 25: Success log-in process

The main home screen has many fast access features and widgets. The calories need counter and eaten food counter allow users to calculate and track their daily calorie intake, which can be an important factor in achieving and maintaining a healthy weight. The played workout feature may allow users to track their exercise routine, which can help them stay motivated and on track toward their fitness goals. The Base Goal for Calories given by the trainee may provide users with personalized recommendations for daily calorie intake based on their fitness goals, which could be determined by a personal trainer or another health professional. This could be a valuable resource for users who are looking to achieve specific fitness objectives. Finally, the list of recipes feature provides users with a variety of healthy meal options, which can help them maintain a balanced and nutritious diet. Overall, your homepage appears to be a comprehensive resource for users who are looking to improve their health and fitness.



(a) Home screen calories widget (b) Home screen BMI Calculator

Figure 26: First part of Home screen

The list of coaches feature allows users to browse and connect with certified fitness coaches who can help them achieve their fitness goals. This can be a valuable resource for users who are looking for personalized guidance and support in their fitness journey.

The map for gym location feature provides users with a convenient way to find nearby gyms and fitness centers, which can be an important factor in maintaining a regular exercise routine. This can help users find a gym that fits their specific needs and preferences, whether they're looking for a specific type of equipment, class, or atmosphere.

Overall, the homepage appears to be a comprehensive platform for users who are looking to improve their fitness and connect with professional coaches and gym facilities. By providing a variety of resources and tools, your website or app can help users achieve their fitness goals and live a healthier, happier life.

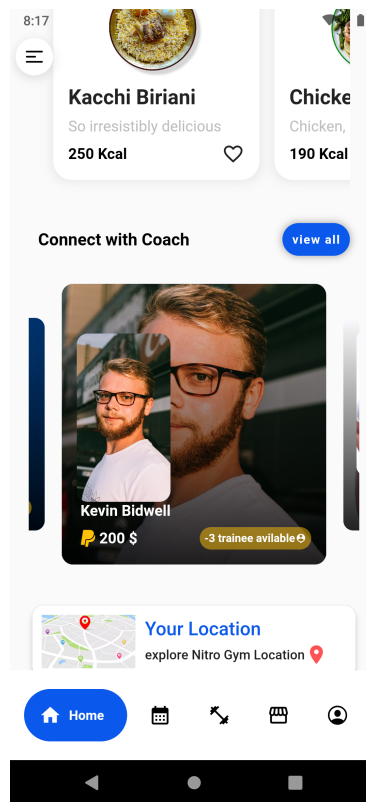
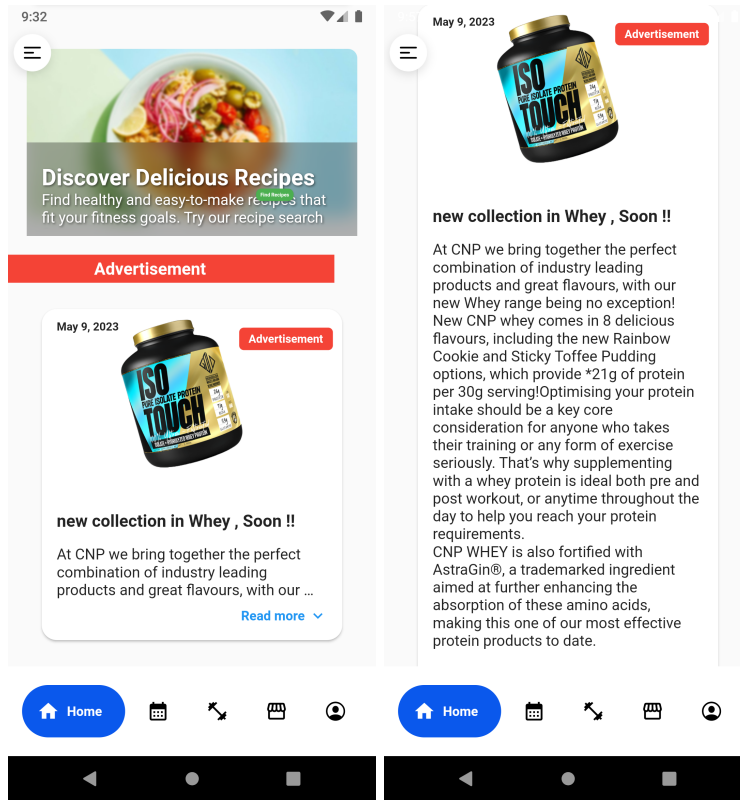


Figure 27: Second part of Home screen

The home screen features an advertising section where the admin shares gym news, including upcoming events and new items in the store, keeping users informed and engaged.



(a) advertisement section-collapsed (b) advertisement section-expanded

Figure 28: Home screen-advertisement section

The Quick gym plan tab may allow users to quickly access a pre-made workout plan, which can be a valuable resource for users who are looking for a structured workout routine. This can help users save time and effort in planning their workouts, and can also provide guidance for users who may not be familiar with exercise techniques or routines.

The Cart for Products tab may allow users to browse and purchase fitness products, such as supplements, workout gear, or other related items. This can be a convenient feature for users who are looking to enhance their workout experience or supplement their nutrition.

The favorite workout list tab may allow users to save and access their favorite workouts for quick reference. This can be a useful feature for users who have found a particular workout routine that they enjoy and want to repeat.

The list of eaten recipes tab may allow users to save and access their favorite healthy recipes, making it easy to plan and track their meals.

The finished workout or played workout tab may allow users to log and track their completed workouts, making it easy to monitor their progress over time.

The chat system tab may provide users with a way to communicate with coaches, trainers, or other users on the platform. This can be a useful feature for users who have questions, need support, or want to connect with others who share their fitness goals.

The pending coaches request sent from the user tab may allow users to track their requests to connect with coaches, making it easy to monitor their progress and follow up if necessary.

The stopwatch clock may provide users with a convenient timer for their workouts or other activities, allowing them to easily track their progress and stay on track.

Finally, the logout button provides a quick and easy way for users to sign out of the platform, ensuring the security of their account information.

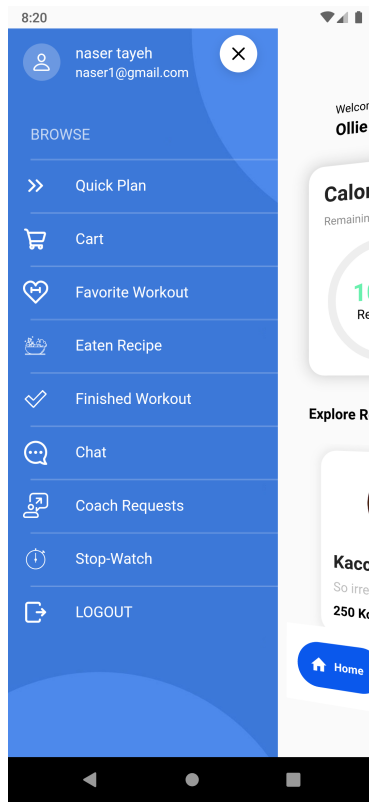
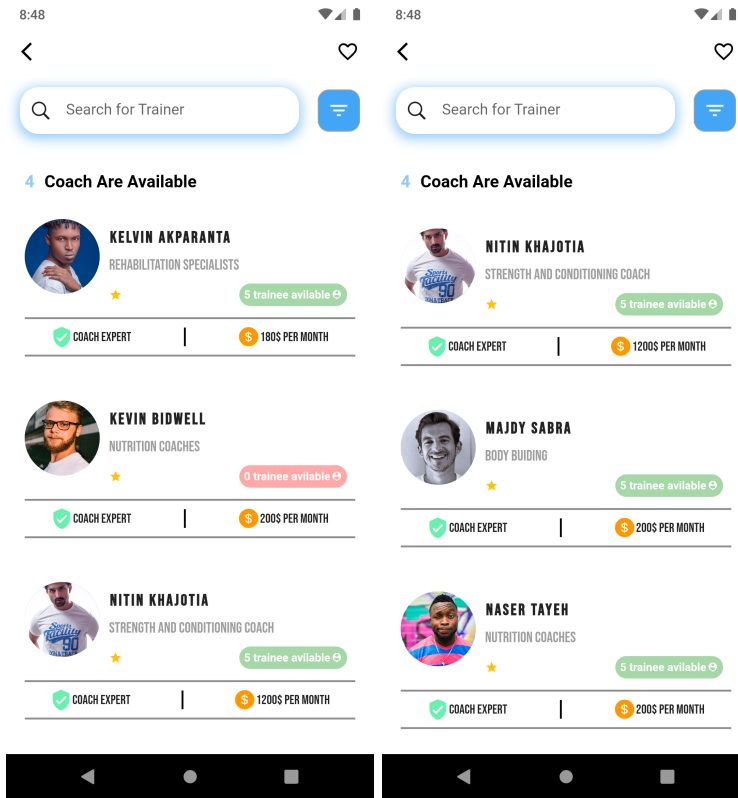


Figure 29: Second part of Home screen

The list of coaches includes information such as their qualifications, areas of expertise, and experience, allowing users to find coaches who align with their specific fitness goals and needs.



(a)

(b)

Figure 30: Coach Section

Users may also be able to filter the list of coaches using the search box

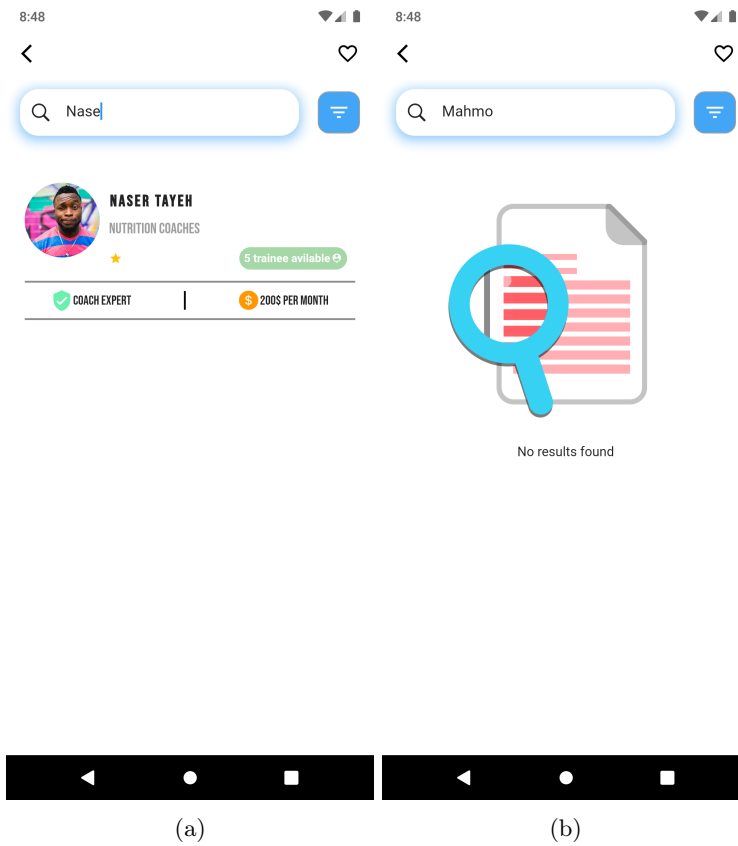
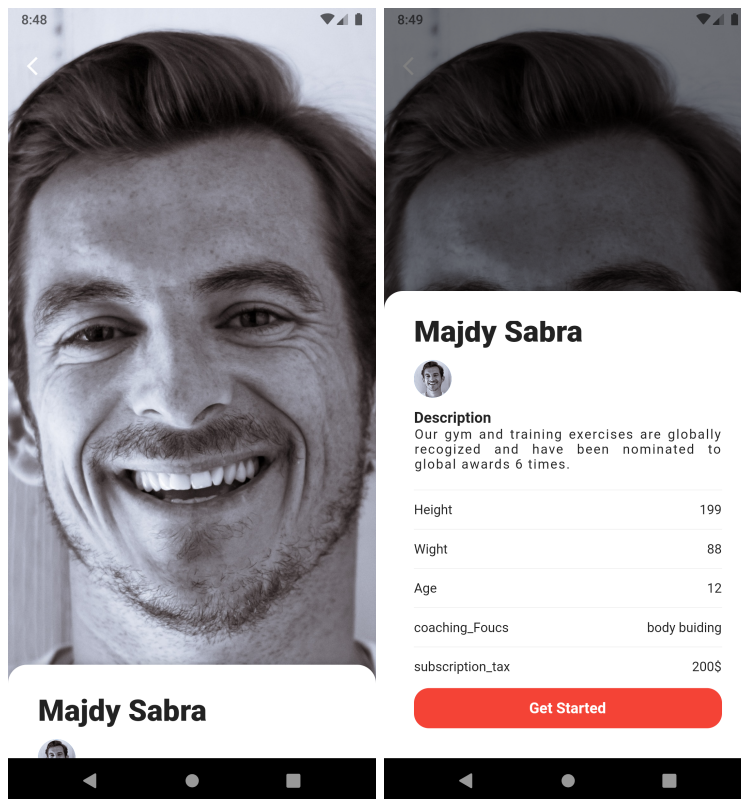


Figure 31: Search page

Once users identified a coach they would like to work with, they may be able to view additional information about the coach, such as their availability and pricing. The coach profile page includes information such as the coach's qualifications, certifications, areas of expertise, and experience. This can help users determine whether a particular coach is a good fit for their specific fitness goals and needs.



(a)

(b)

Figure 32: Coach Profile Page

When a trainee submits a request to connect with a coach, the platform may check the coach's availability to determine if they are able to take on a new client. If the coach is at full capacity, the platform may display a message indicating that the coach is not currently accepting new clients, and may provide the trainee with suggestions for other coaches who may be a good fit for their needs.

If the coach is available to take on a new client, the platform may send a notification to the coach, and may also send a confirmation message to the trainee indicating that their request has been received and is being processed. Once the coach has reviewed the request and accepted it, the platform sends a final confirmation message to the trainee, indicating that their request has been approved and providing them with additional details such as the coach's contact information and availability.

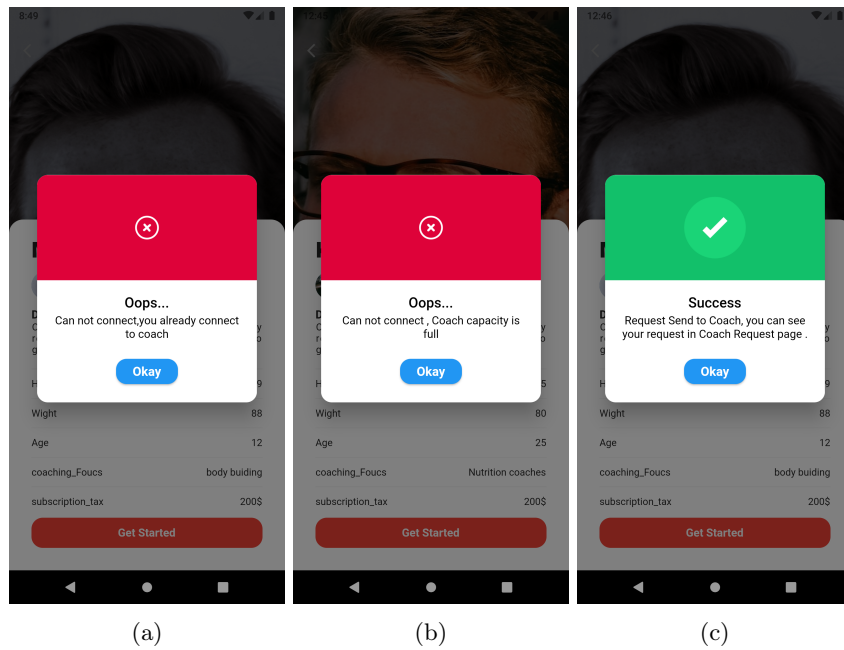


Figure 33: Coach Request's Page

After providing an overview of the home screen sections, we will now delve into each section in detail, elucidating their specific purposes and functionalities. By examining each section individually, we aim to provide a comprehensive understanding of their role within the gym management app and how they contribute to enhancing the user experience.

7.3.2.1 Recipe feature: The recipe section on the home screen of the gym management app showcases a variety of recipe categories, offering users access to 5 distinct categories. Users can explore detailed recipe information, utilize a search feature to find specific recipes, and access instructional videos for each recipe. Additionally, ingredient lists are provided to assist users in preparing these healthy recipes, promoting a nourishing and balanced diet for trainees.

When users click "View All" in the recipe section on the home screen, they are presented with an extensive collection of recipes, facilitating easy exploration and discovery of diverse culinary options to support their healthy eating goals.

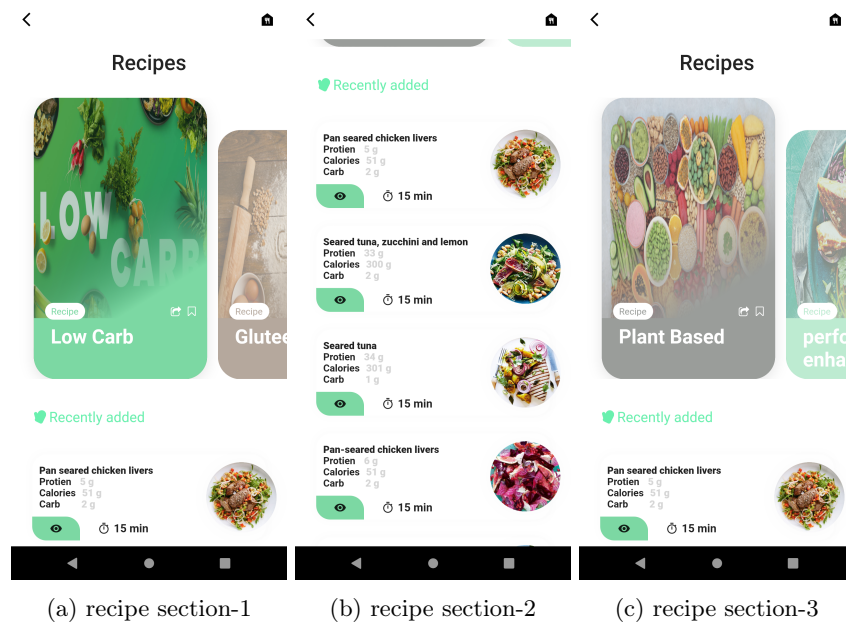
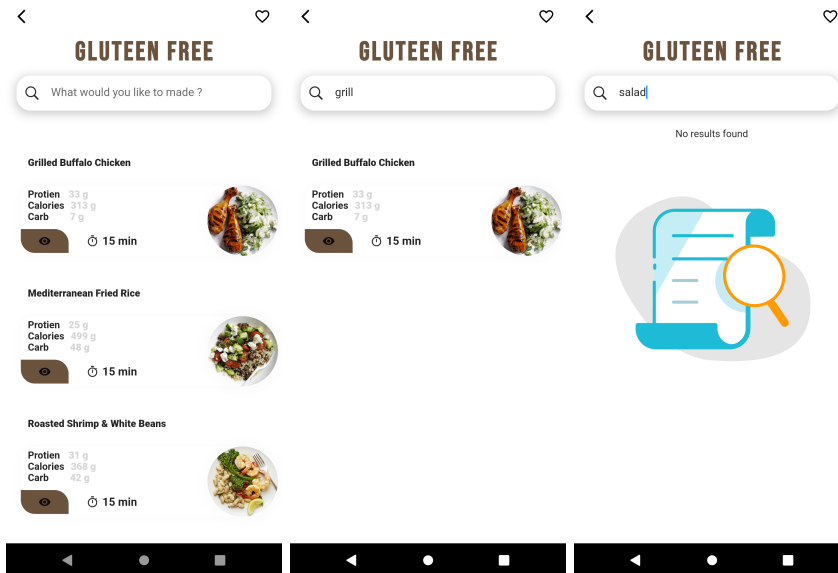


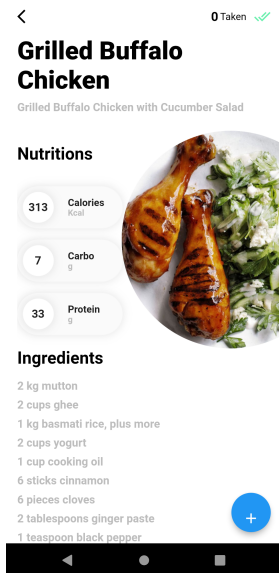
Figure 34: recipe feature



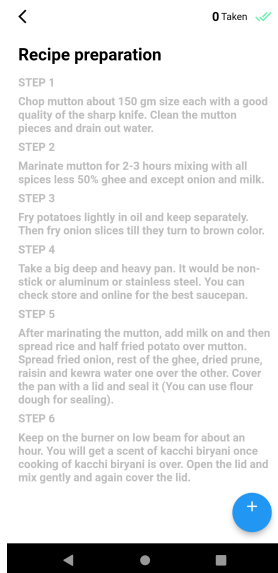
(a) recipe section-4

(b) recipe section-5

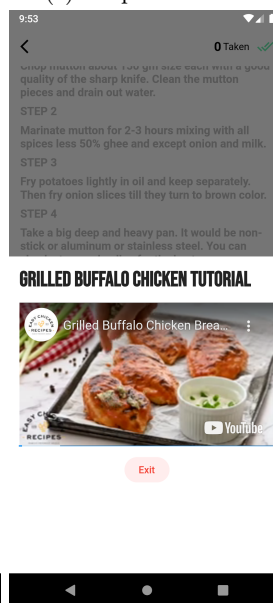
(c) recipe section-6



(d) recipe section-7



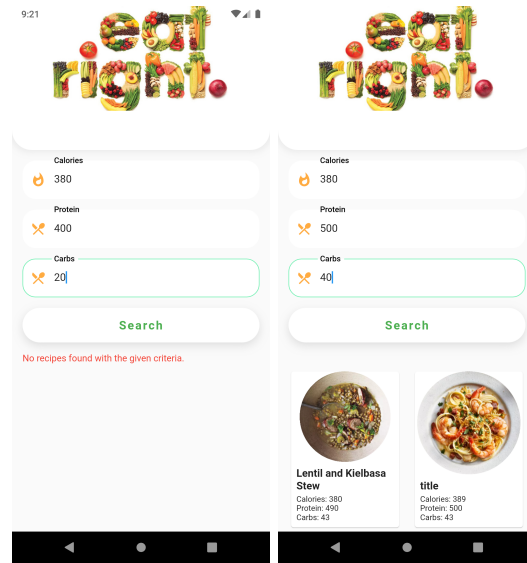
(e) recipe section-8



(f) recipe section-9

Figure 35: recipe feature-continued

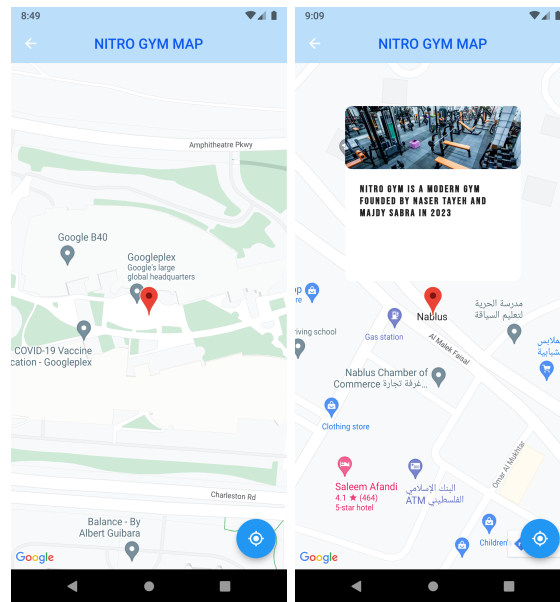
7.3.2.2 Recipe founder: The Recipe Finder section, accessible from the home screen by clicking the 'Discover Delicious Recipe' widget, provides users with a dedicated screen to input their desired calorie, protein, and carbohydrate requirements. Using an algorithm, the system identifies and suggests recipes that closely match the specified nutritional needs. This feature becomes particularly valuable when users connect with a nutrition coach, as they can create personalized nutrition plans and recommend specific recipes for the trainee's dietary goals.



(a) recipe founder-1 (b) recipe founder-2

Figure 36: Recipe Founder feature

7.3.2.3 Map feature: The Map section on the home screen utilizes a Google Map integration with a valid API key. While the functionality to navigate to Nitro Gym and determine the user’s live location is implemented by us, This section on the home screen features displays an interactive map that displays the user’s current location upon entry. By clicking the button located at the bottom-right corner of the screen, users can easily navigate to the precise location of Nitro Gym, ensuring convenient access to the facility. This feature enhances user experience by providing seamless navigation and helping users find their way to the gym with ease.



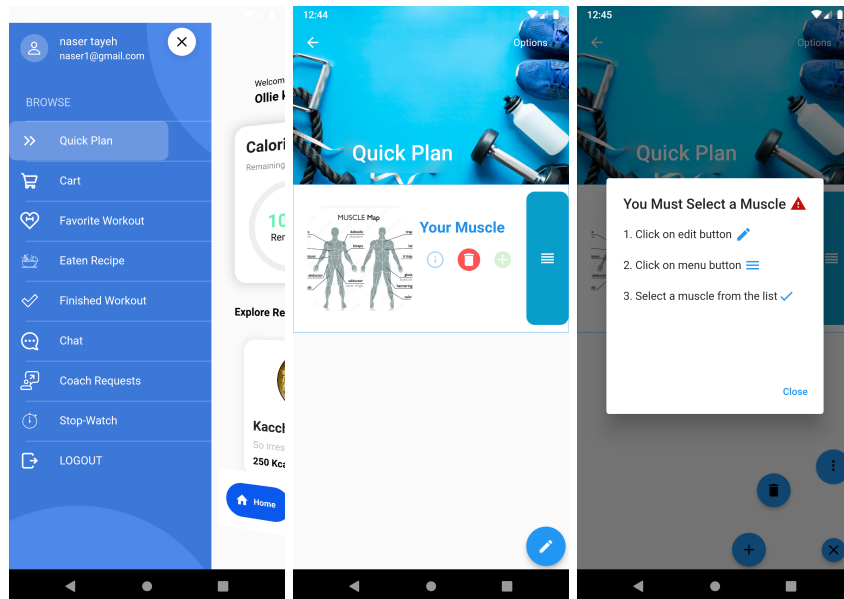
(a) map section-1

(b) map section-2

Figure 37: Map feature

Drawer Feature: The Drawer section, accessible from the home screen, offers an immersive experience through a visually captivating 3D animation. Previously, we provided an overview of the features within this section. Now, we will delve into each feature, providing detailed explanations and insights. This comprehensive exploration empowers users to fully utilize the functionalities within the Drawer, enhancing their interaction with the app.

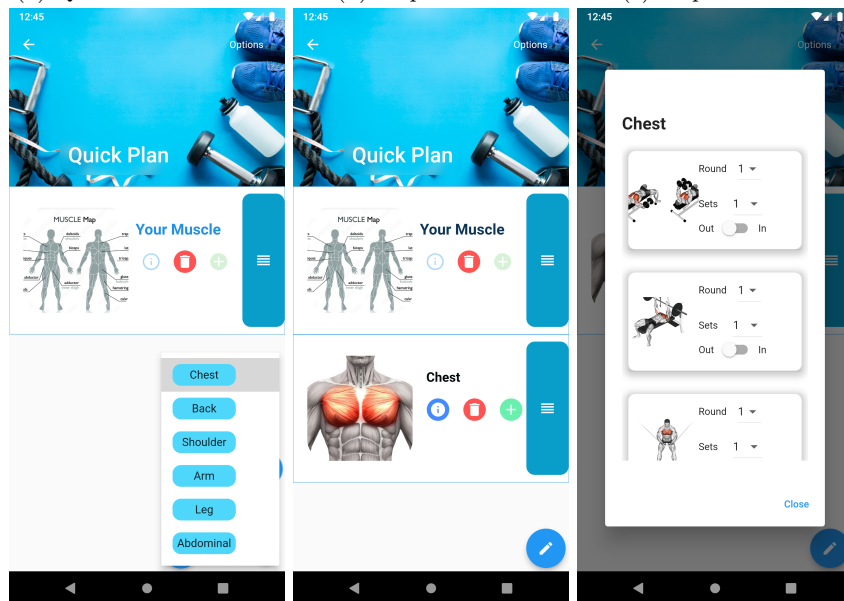
7.3.2.4 Quick Plan feature : The Quick Plan feature, available in the Drawer's Quick Access screen, empowers trainees to create personalized exercise routines. This option serves as a convenient alternative for users who prefer not to engage a personal trainer or incur additional expenses. With Quick Plan, users can curate a customized set of exercises tailored to their specific needs and goals, fostering independence and flexibility in their fitness journey.



(a) Quick Plan feature-1

(b) map section-2

(c) map section-2



(d) map section-2

(e) map section-2

(f) map section-2

Figure 38: Quick Plan feature

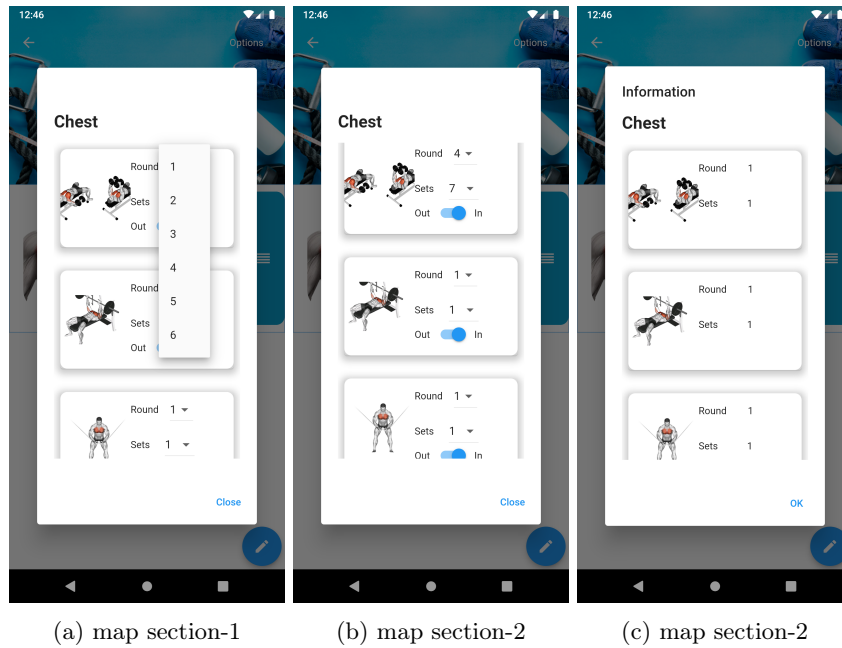
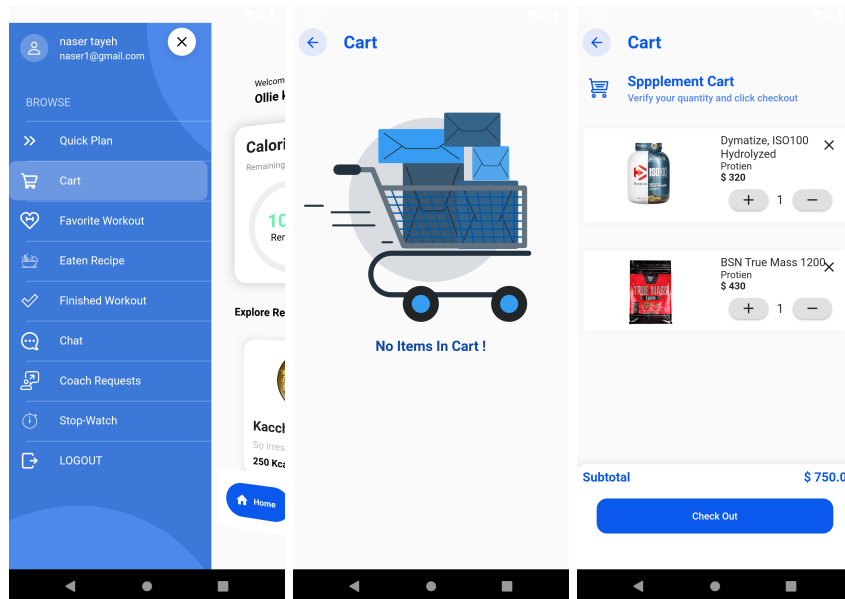


Figure 39: Quick Plan feature-continued

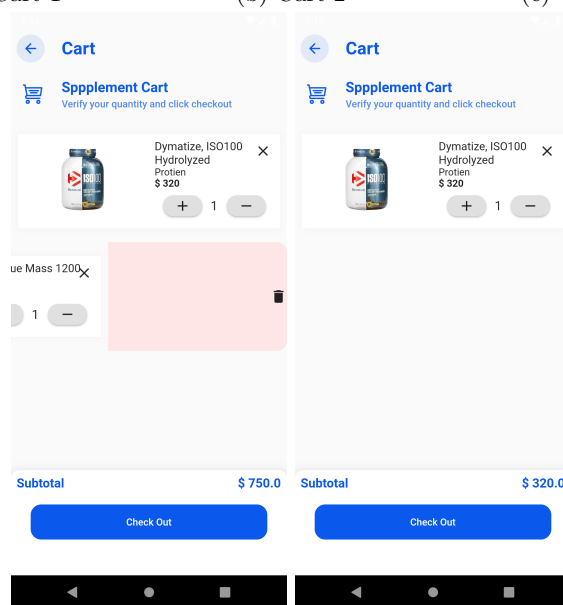
7.3.2.5 Cart feature : The Cart section, located in the Quick Access screen of the Drawer, serves as the virtual shopping cart for the Nitro Gym store. Trainees can conveniently add desired items to their cart, allowing for a streamlined shopping experience before proceeding to the checkout process. This feature enables users to gather and review their selected items before finalizing their purchase, ensuring a smooth and organized shopping journey.



(a) Cart-1

(b) Cart-2

(c) Cart-3



(d) Cart-4

(e) Cart-5

Figure 40: Cart feature

7.3.2.6 Favorite Workout feature : The Favorite Workout section, located in the Quick Access screen of the Drawer, showcases the workouts that trainees have marked as their favorites. This feature provides a convenient way for users to access and revisit their preferred workouts quickly. By allowing users to easily access and engage with their favorite workouts, this section enhances user experience and encourages continued engagement with personalized fitness routines.

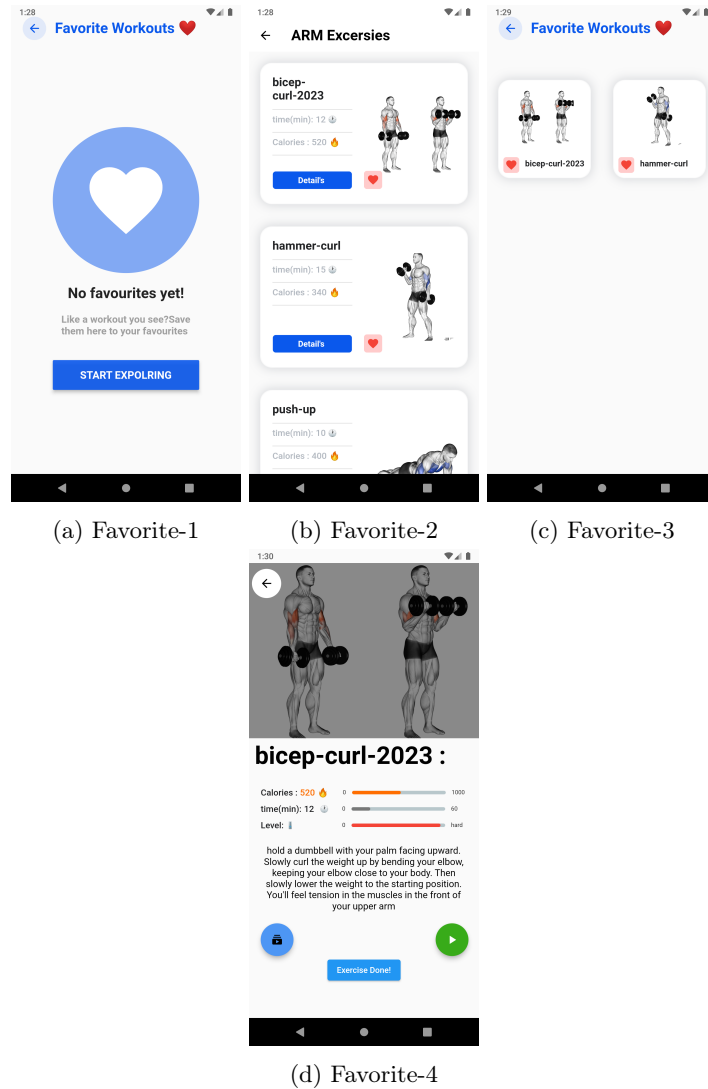
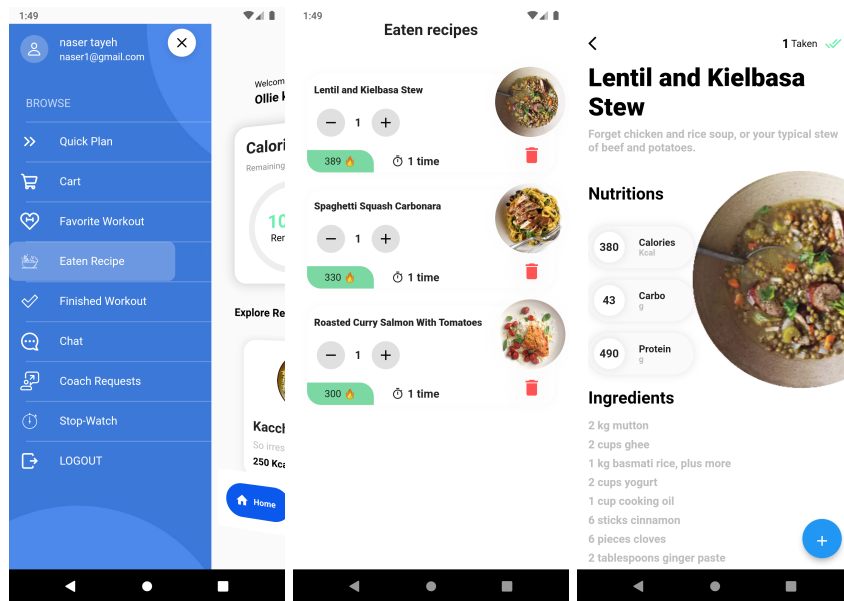


Figure 41: Favorite Workout feature

7.3.2.7 Eaten Recipe feature : The Eaten Recipe section, located in the Quick Access screen of the Drawer, showcases the recipes that trainees have consumed. It provides a comprehensive overview of the eaten recipes along with their corresponding calorie counts. By tracking the calorie intake of consumed recipes, trainees can easily monitor their daily calorie consumption and adjust their eating habits accordingly. This feature promotes awareness and control over meal choices, aiding trainees in maintaining a balanced and healthy diet. And I want to add that the user can add the recipe as eaten through the meal details page by clicking on the + button located at the bottom right of the details screen, and this is explained in the pictures



(a) Favorite-1

(b) Favorite-2

(c) Favorite-3

Figure 42: Eaten Recipe feature

7.3.2.8 Finished Workout feature : The Finished Workout section, located in the Quick Access screen of the Drawer, showcases the completed workouts of trainees. It provides detailed information about the calories burned during each workout, allowing users to track their fitness progress. By updating the calorie counter on the main screen, trainees can easily monitor their calorie expenditure and effectively manage their workout routines. This feature promotes motivation and enables users to optimize their fitness journey.

And I want to add that the user can announce the end of this exercise, by pressing the 'exercise done' button on the exercise details page (we will explain it later.), and when he presses it, the exercise will be marked as having been played by this trainee

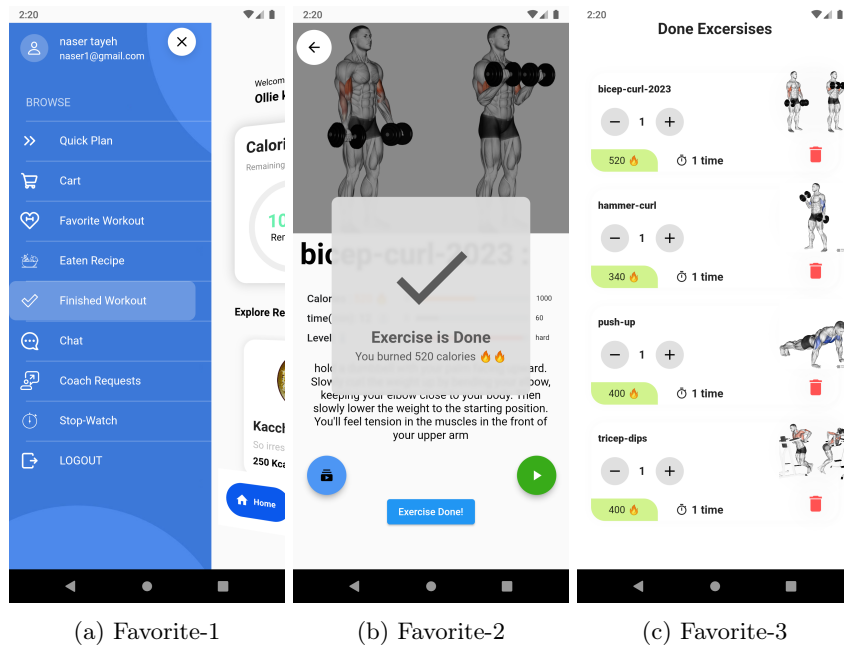
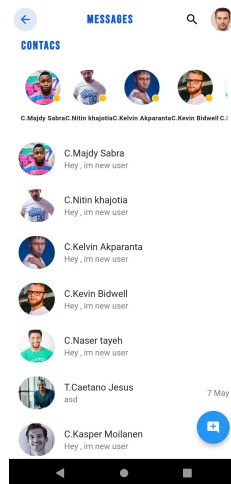


Figure 43: Eaten Recipe feature

7.3.2.9 Chat System feature : The integration of Firebase into our Chat System plays a crucial role in ensuring real-time and synchronized communication between trainees, trainers, and other participants. Firebase’s real-time database allows for instant message delivery and updates, providing a seamless and responsive chat experience. Additionally, Firebase’s robust backend infrastructure and scalability enable efficient storage and retrieval of chat logs, ensuring the reliability and availability of the chat system for all users. Overall, Firebase empowers our chat system with the necessary capabilities to support dynamic and interactive communication within the gym community.

chat ensures continuous interaction, enabling trainers to monitor and support trainees effectively. By leveraging Firebase for real-time data storage and utilizing our custom-built algorithms, we provide a comprehensive chat experience that allows users to exchange text, stickers, and images. The system also displays message timestamps, user presence, and online status, promoting efficient and engaging communication within the gym community. To efficiently detail the features of the chat, we will outline each point for clarity.

1. **Chat Home screen:** The Chat Home Screen provides a user-friendly and visually appealing interface where trainees can easily communicate with other users and coaches within Nitro Gym. It displays a comprehensive list of users and coaches, facilitating seamless interaction and fostering a sense of community within the system.



(a) chat Home

Figure 44: chat Home screen

2. **Chat Search:** The Chat Home Screen provides a user-friendly search feature, enabling users to search for any individual within the system. By simply entering the name or email of the desired user, the system quickly retrieves and displays the matching results, allowing for efficient and convenient communication.

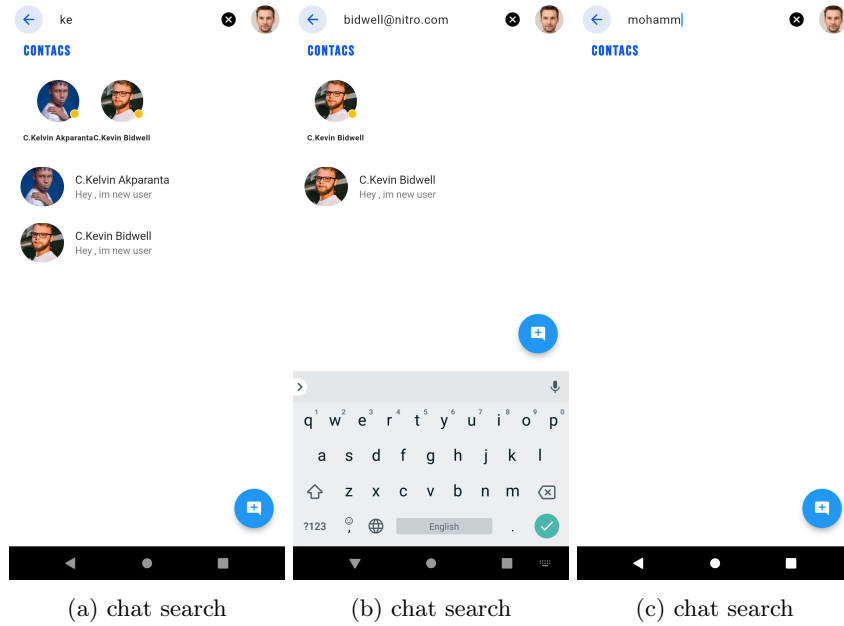
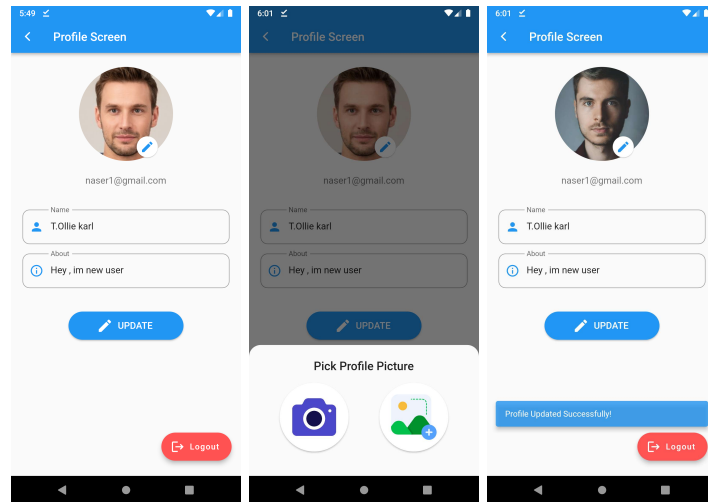


Figure 45: chat search

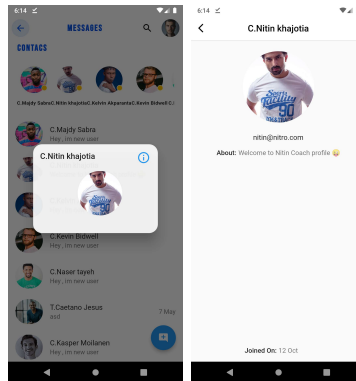
3. **Chat profile:** By clicking on their profile image at the top right of the screen, users are directed to the User Profile page. This allows them to customize their chat experience by changing their profile picture, name, and status. Additionally, a convenient logout button is available for users who wish to exit the system swiftly.



(a) chat profile (b) chat update (c) update success

Figure 46: chat profile

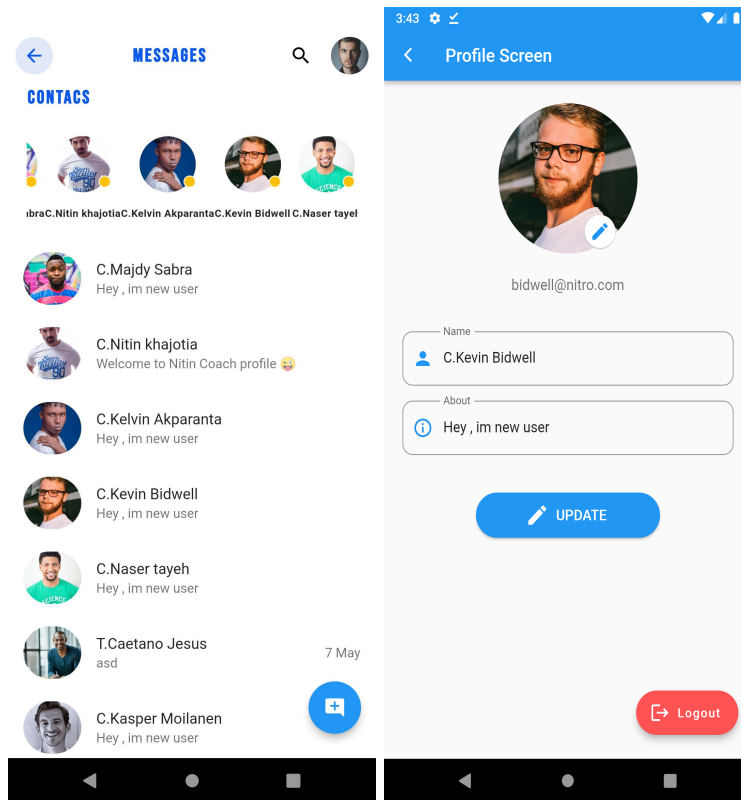
also, Users have the ability to view the profiles of other users, accessing public information such as status and emails.



(a) view fiend profile (b) view fiend profile-2

Figure 47: view friend profile

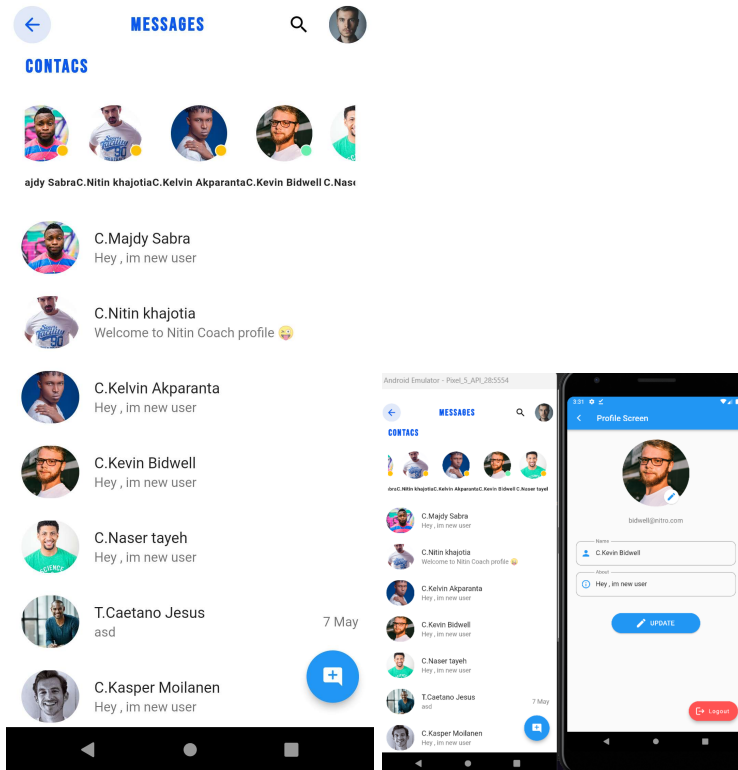
4. **Online Status:** The online status feature allows users to quickly determine the availability of other users, enhancing the user experience and facilitating smoother communication within the chat. Let's try this feature : now we are going to try this feature, as we can see in fig(a), all users are offline, and I am now logged in with the user name **[Ollie Karl]** Now at the same time I will turn on another phone and log in with the trainer account **[Kevin Bidwell]**as we see in fig(b), and see how the status is will become online (shown in green color).



(a) offline Status

(b) changed to online

Figure 48: online status



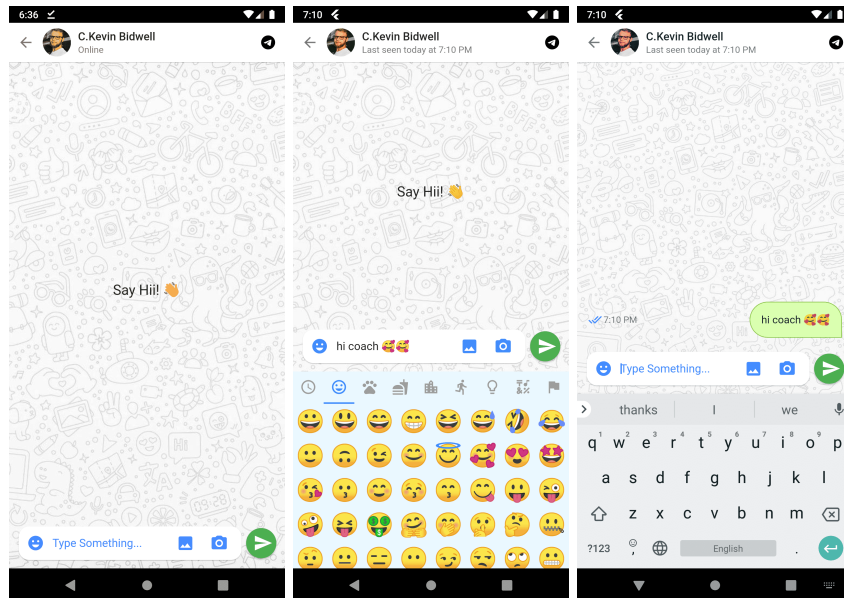
(a) changed to online

(b) prove 2 device

Figure 49: online status-continued

5. **Chatting:** Our chat system offers a seamless and efficient communication experience, allowing users to exchange messages, pictures, and stickers. When a message is received by the recipient, a notification is promptly sent to their device, ensuring timely communication.

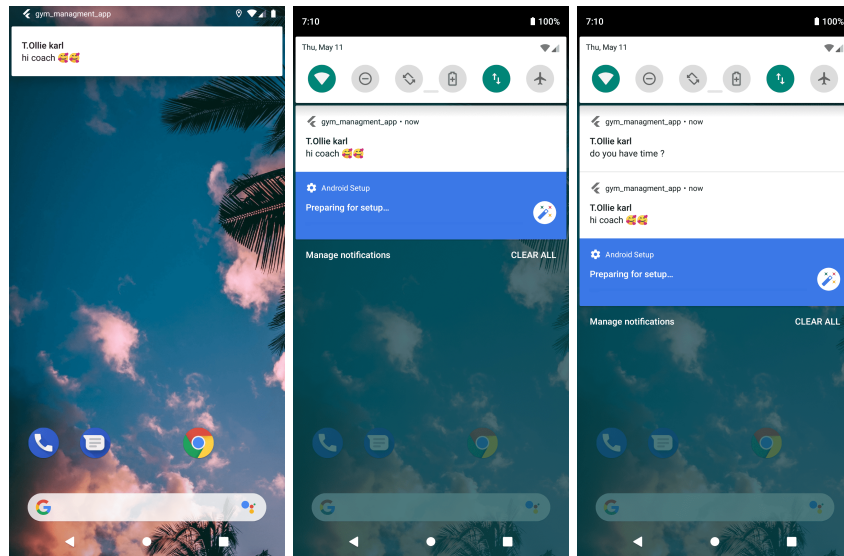
Here, in these pictures, we show the chat from a trainee who wants to send a message to his coach



(a) new Conversation (b) send Message (c) message-delivered

Figure 50: Chatting feature

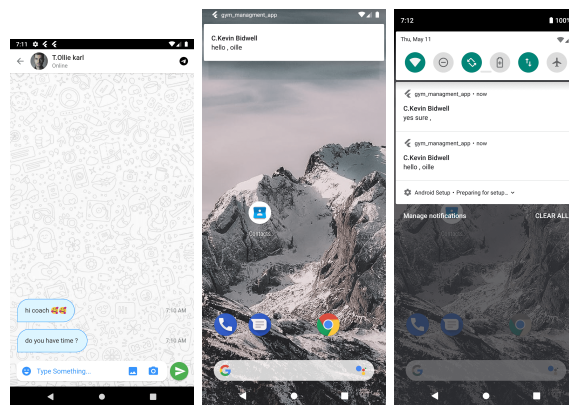
Here we show the notification that arrived on the trainer's phone, the moment the message was sent by the trainee



(a) Message notification (b) Message notification (c) Message notification

Figure 51: Chatting feature-continued

Here we show the conversation from the trainer's side, in addition to the notification to the trainee the moment the trainer sent him a message

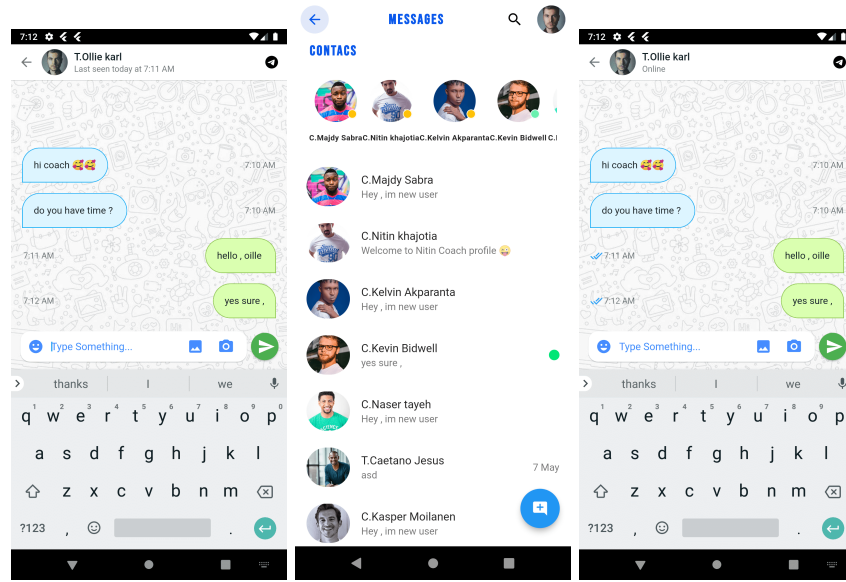


(a) coach-chat (b) Notification (c) Notification2

Figure 52: Chatting feature-continued2

Here we want to focus on the chat Home screen, and how it appears when

new messages arrive, and we also want to highlight the style of messages for the trainer before the trainee reads the messages and after he reads them.



(a) Message before read (b) chat Home Screen (c) Message After read

Figure 53: Chatting feature-continued3

6. **Last seen and Msg read feature:** Our chat system includes the ability to track read receipts, notifying users when their messages have been read by the recipient. This is indicated by a blue check icon displayed next to the message, providing clear confirmation of message delivery and read status. Additionally, the last seen feature allows users to see the most recent activity of others within the application. Note: in (fig. a), the coach 'Bidweel' exit the app, so the trainee Oliie sees that 'Bidweel' was Last seen today at..... , in (fig. b, fig. c), the trainee sends a Message, and when the other side read the message a blue double check appears next to the Message.

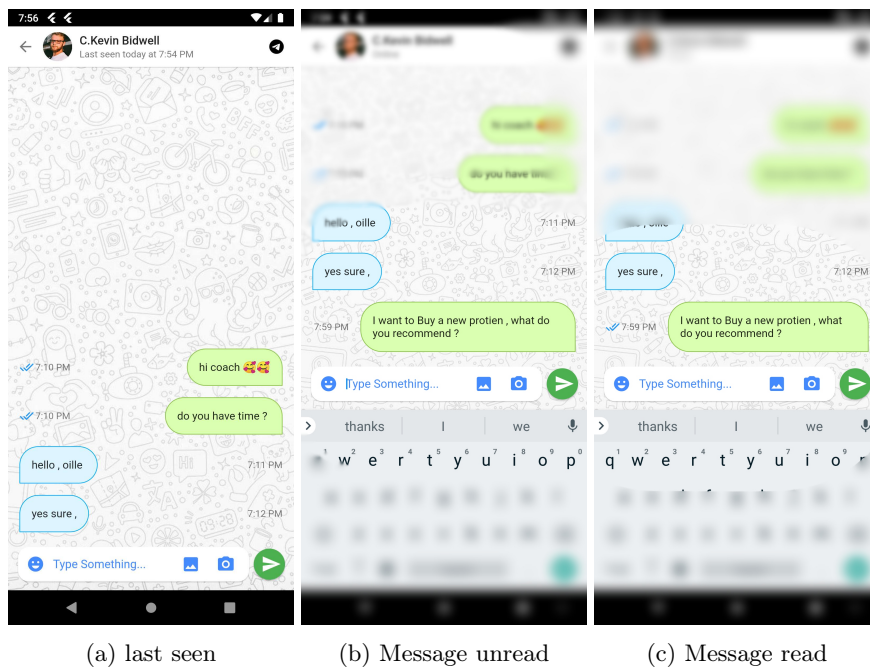
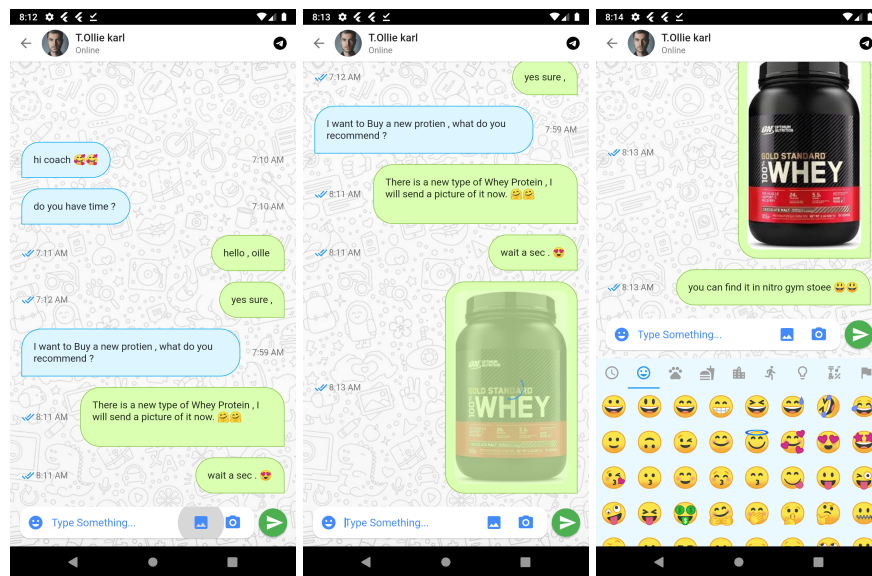


Figure 54: Last Seen and read Message Feature

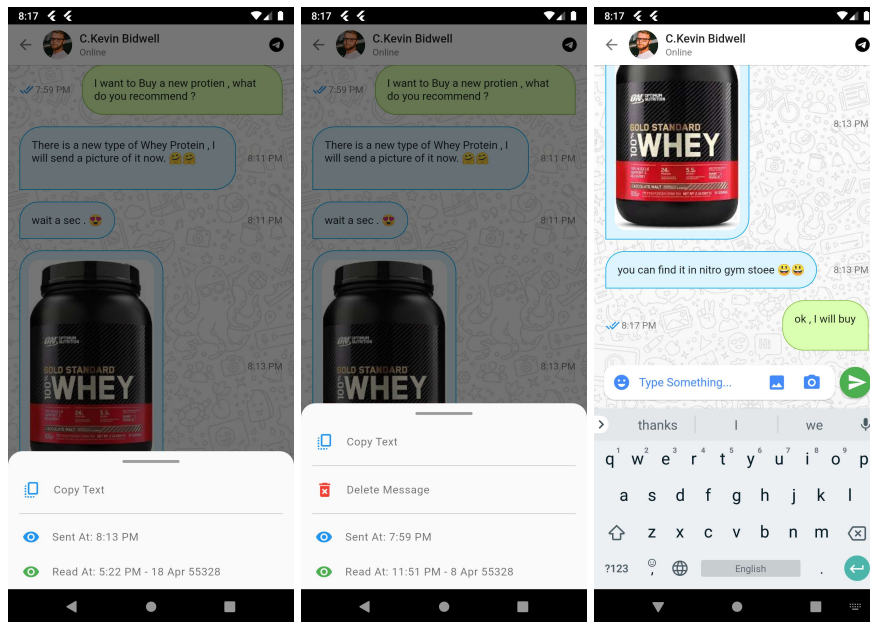
7. **Upload Image in chat, emoji keyboard:** Our chat system supports image uploads, allowing users to share pictures within the conversation. Additionally, users can add a fun touch to their messages by sending stickers, enhancing the overall chat experience.



(a) Image upload (b) Image upload loading (c) emoji keyboard

Figure 55: Upload Image in chat, emoji keyboard

8. **Delete msg and msg info feature:** Our chat system allows users to delete their sent messages and provides the option to view message details within the chat. This feature enhances user control over their conversation history and enables them to manage their messages effectively.



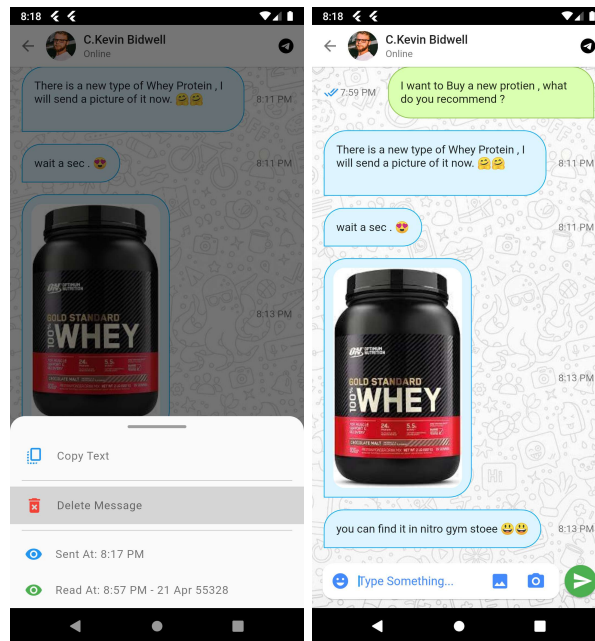
(a) msg info

(b) my msg info

(c) send msg

Figure 56: Delete msg and msg info feature

In these pictures, the user will delete the message "ok, I will buy" that he sent at 8:17 see Fig 55-part C, and after deleting this message, we see that it has disappeared from the chat screen

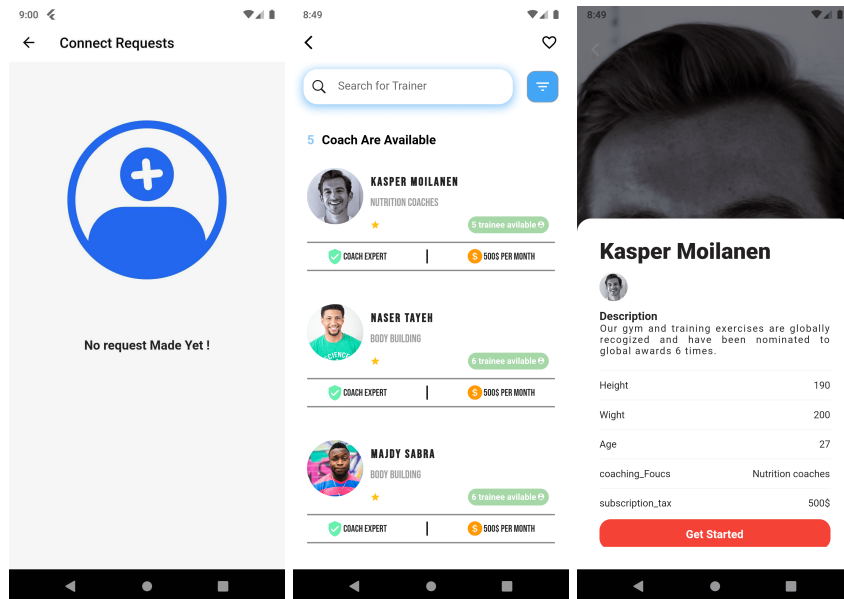


(a) delete msg

(b) msg deleted

Figure 57: Delete msg and msg info feature-continued

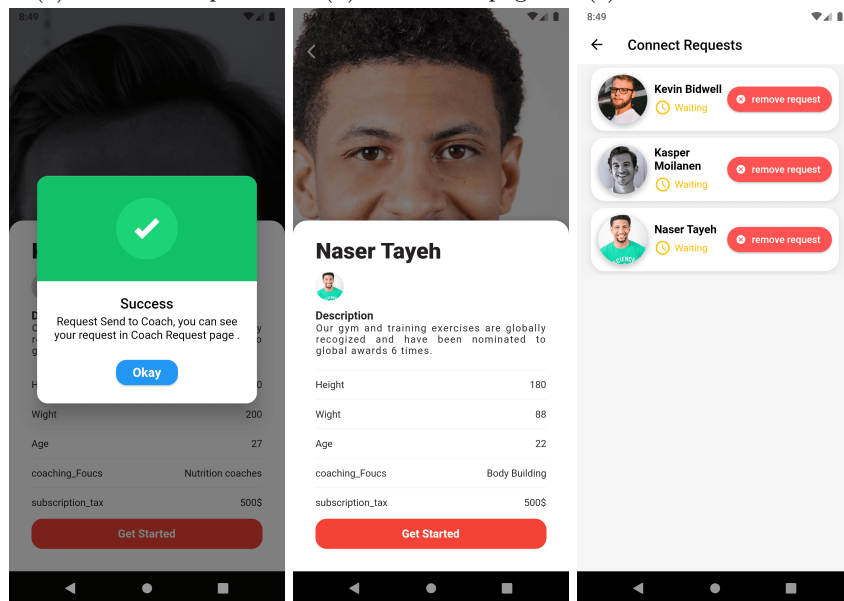
7.3.2.10 coach Request feature : Through this feature, the trainee can look at the requests he has sent to contact the trainers. To carry out this process, he will need to go to the trainers view page and then click on the contact trainer button. If the process is completed successfully and the trainer has the capacity to contact, the request will go to the trainer, and when the acceptance comes from the trainer, a notification will appear on the trainee that your application has been accepted by the trainer. in this example, we make 2 coach requests and the third request is already done before the example



(a) no Coach request

(b) view coach page

(c) connect with coach1

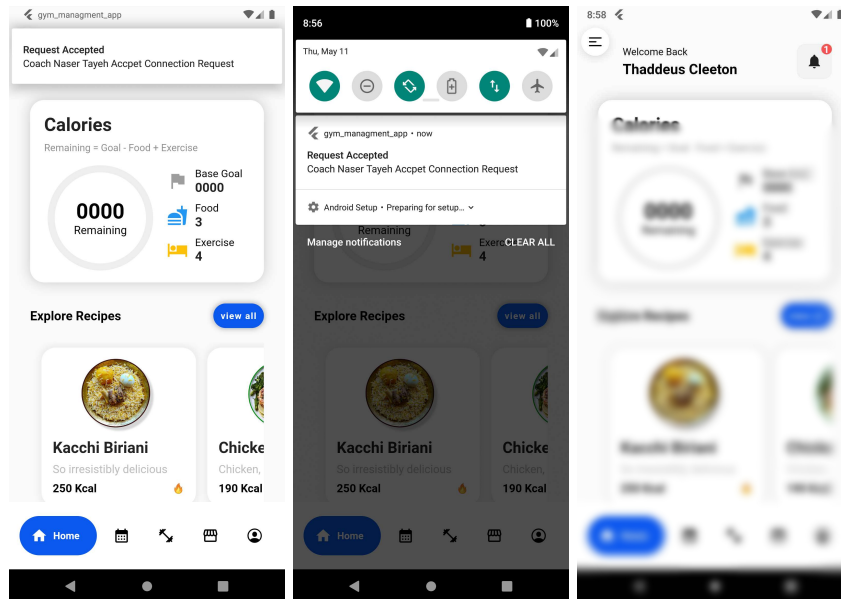


(d) request done

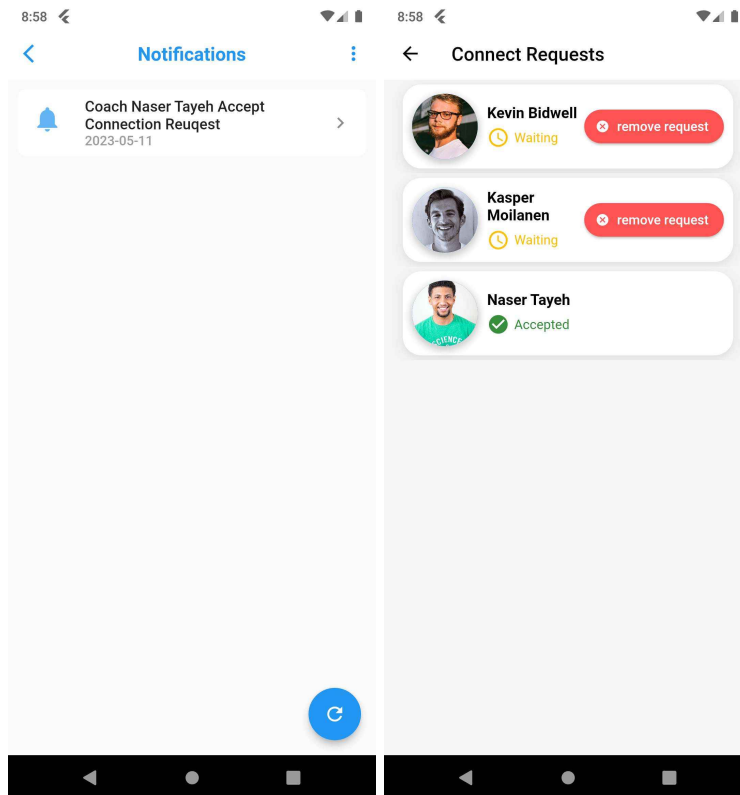
(e) connect with coach2

(f) coach request page

Figure 58: coach Request feature



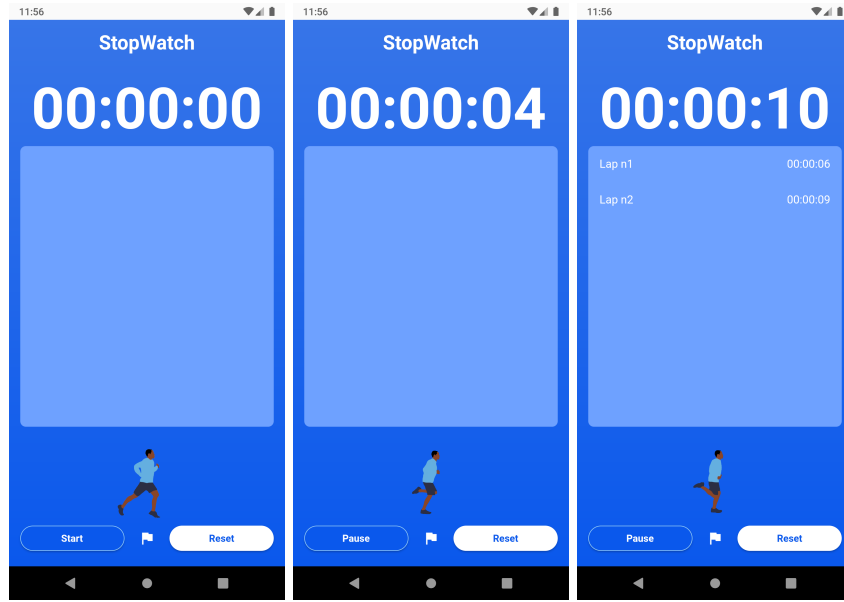
(a) notification (b) view notification (c) notification in the app



(d) view notification in the app (e) on of the request accepted

Figure 59: coach Request feature-continued

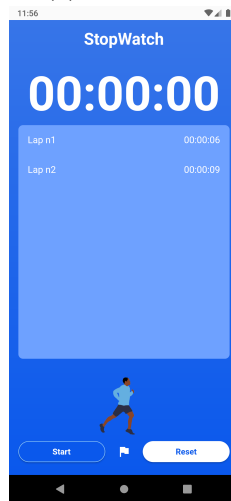
7.3.2.11 Timer feature : This feature aims to provide a Stop-watch timer in the application. This is actually useful if the trainee wants to calculate the duration of an exercise or the duration of his stay in the gym.



(a) timer screen

(b) timer start

(c) make a lap



(d) reset timer

Figure 60: Timer feature

7.3.2.12 Workout The "finished workout" counter counts the completed workouts, saved in the finished workout section, This information can help trainees track their progress over time and stay motivated to continue with their fitness routine.

The "in progress workout" section includes information about the current workout that the trainee is working on, This section can help trainees stay focused and motivated during their workout and can provide a sense of accomplishment as they work through each set and complete each exercise.

The "time spent in a workout" section can be a useful tool for trainees to monitor their progress and ensure that they are getting an adequate amount of exercise each week. This section displays the total amount of time spent in a workout

The "Workout Categories slider" section has all the workout categories for the user so he can choose the workout he needs

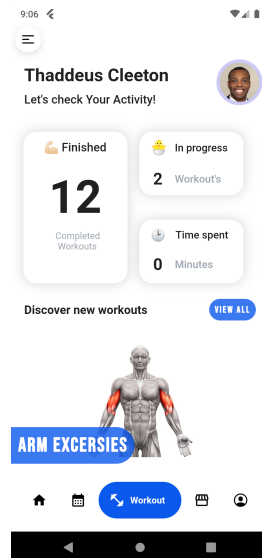
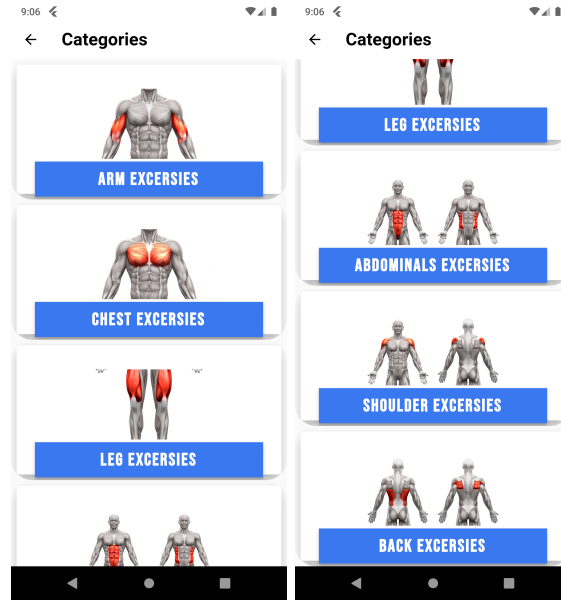


Figure 61: home workout page

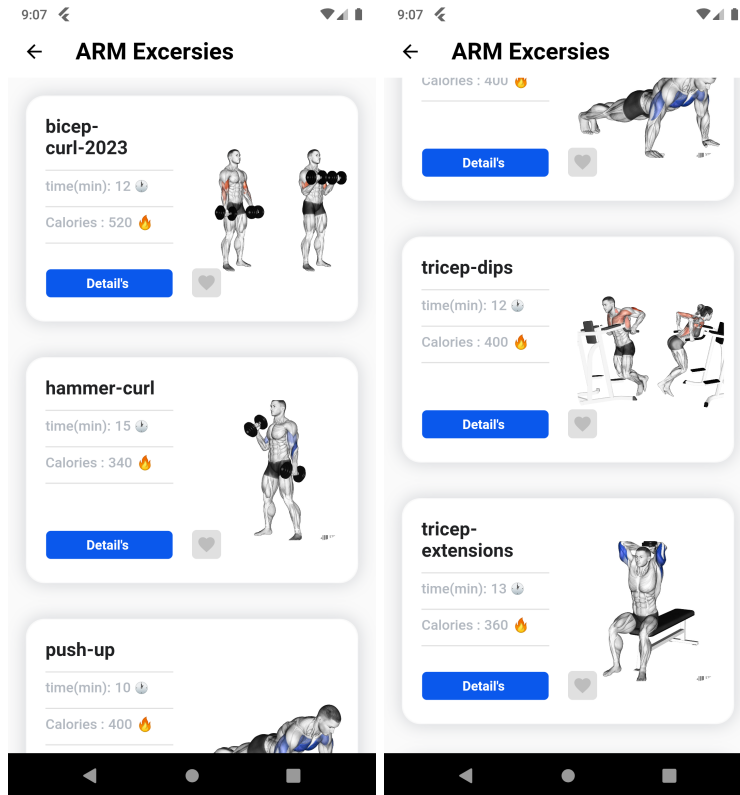
The workout categories are organized by type of exercise, level of difficulty, or specific fitness goals. For example, some common workout categories might include cardio, strength training, yoga, pilates, HIIT, or sports-specific training.



(a) Workout Categories 1 (b) Workout Categories 2

Figure 62: Categories

Each Category page has a group of Exercises based on its muscle type

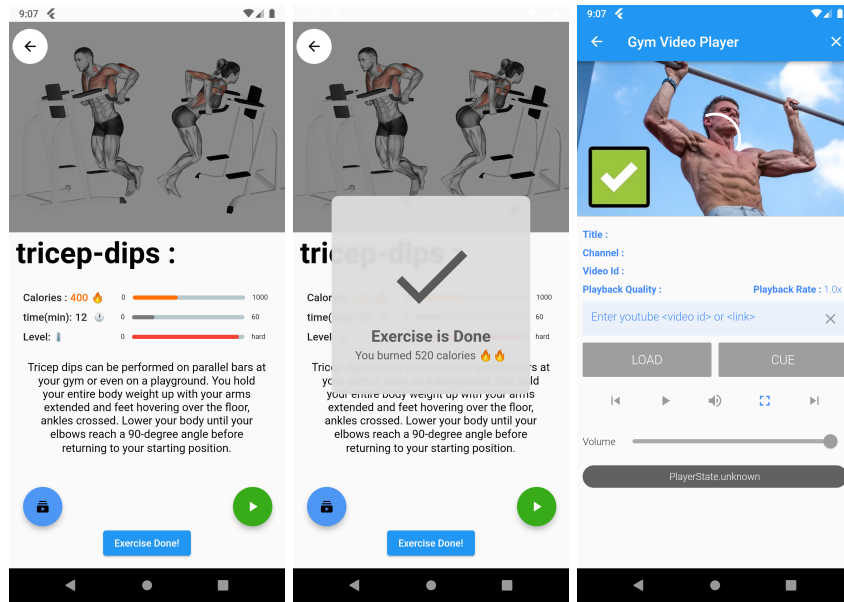


(a) Arm Exercises 1

(b) Arm Exercises 2

Figure 63: ARM Category

Each exercise page has some details about the exercise like calories, the time needed, reps, and rounds and it has 3 sections for step-by-step Exercises, video tutorials, and mark exercises as done



(a) Details for exercise (b) Mark Exercise as done (c) Video player page

Figure 64: Exegesis page

This section has the step by step for each Exercise to give full detailed data about how to do each exercise the benefit of this section stands for helping the trainee to apply the exercise in each step in the correct way

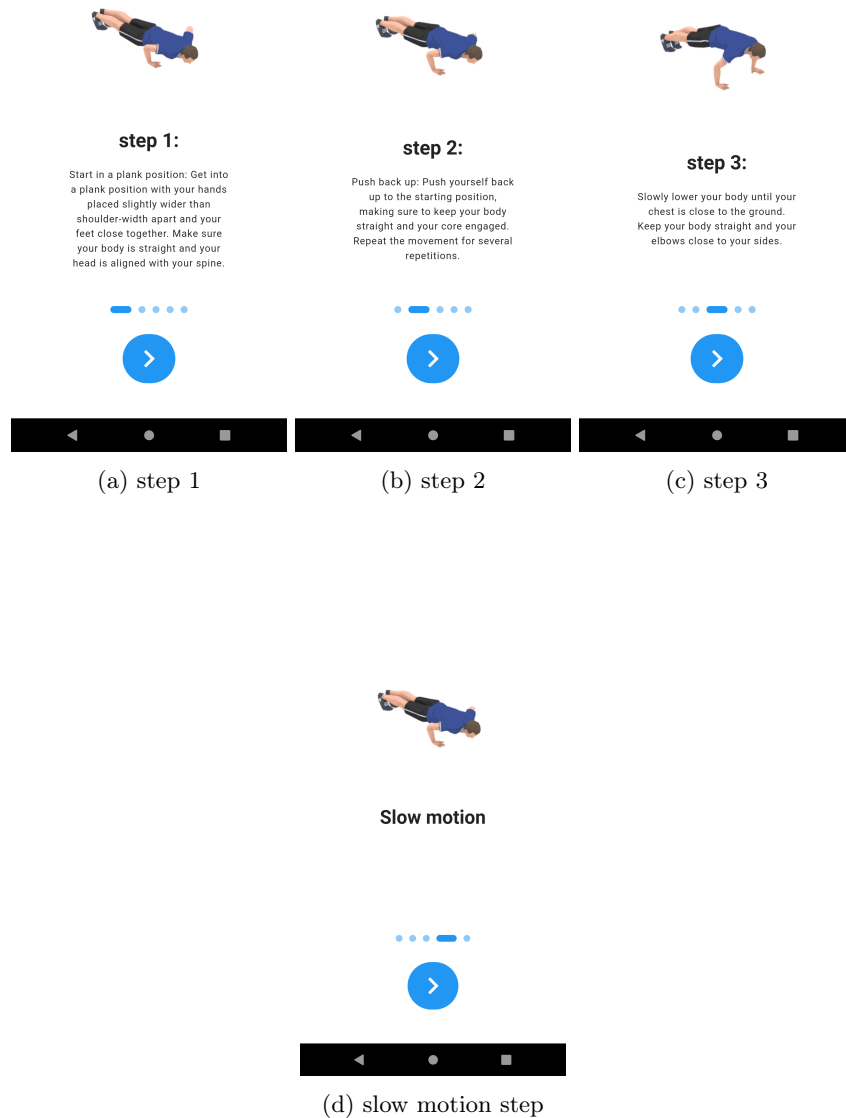
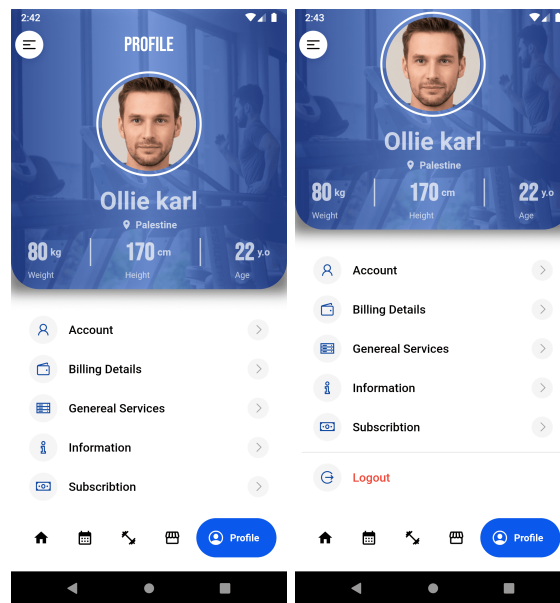


Figure 65: Exegesis steps page

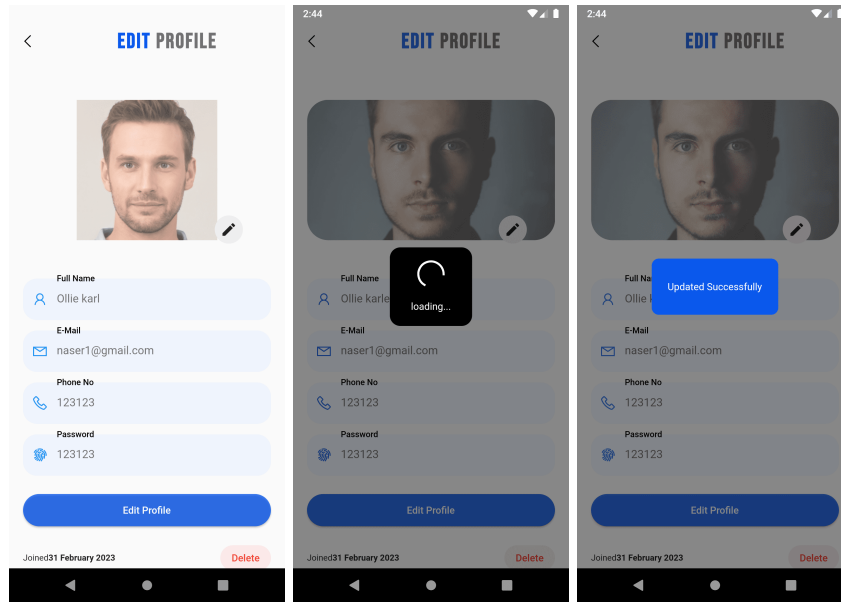
7.3.2.13 user profile : Through the User Profile feature, we enable the user to control several things, such as his account information, changing the name, personal picture, and password, and he can also view the payment information for the monthly subscription to the gym by clicking at "billing details" button, as well as he can access the General Services section, which contain the Water Tracker and BMI features, and he can also modify his general information such as his height, weight, and age. Finally, there is the most important part, which is part of paying the gym subscription through the subscription, also the logout button Through it, the user can close the account and exit from it, and we will work to explain each part in detail.



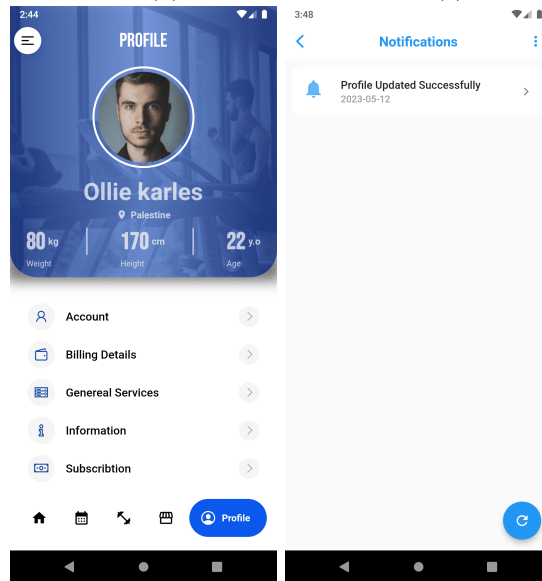
(a) user profile screen (b) user profile screen2

Figure 66: User profile feature

7.3.2.13.1 Account : Using this interface, users can easily and smoothly modify their Nitro gym account information. the user receives a notification when his information is edited successfully



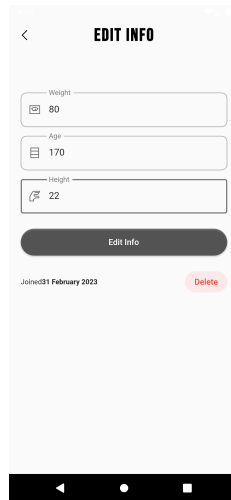
(a) Account screen (b) edit name and photo (c) info edit successfully



(d) new name and photo (e) new name and photo

Figure 67: User Account

also, user can update their general information using the edit info screen



(a) uodate user info

Figure 68: update general info

7.3.2.13.2 Billing Details feature : In this interface, we display information about the monthly subscription for the user. If the user is a subscriber, it will show information about this subscription, such as the value of the monthly subscription, the name of the coach, if any, the duration of the subscription, and the expiration date of the subscription, in addition to an indicator that displays whether the subscription is valid or not. in addition to a time counter that calculates the amount of time remaining on the subscription in days, hours, minutes, and with a percentage, and when this period expires, that's mean, the subscription has ended, the user will receive a notification stating that the subscription has expired and you must renew it, in case the user didn't renew his subscription this UI will appear to see figure 64

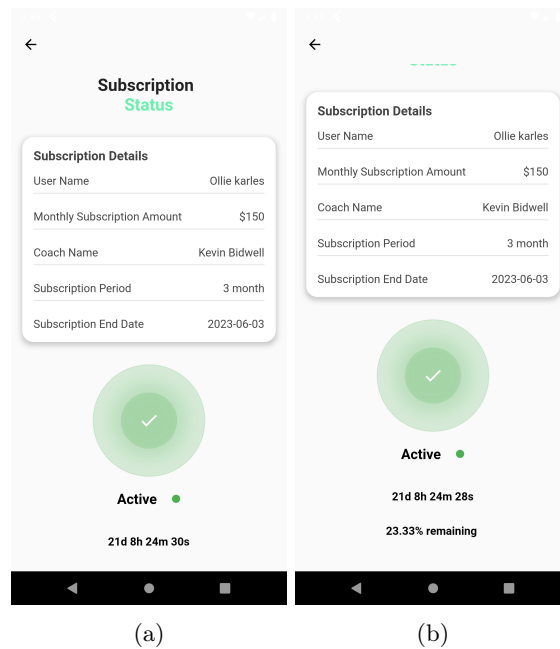
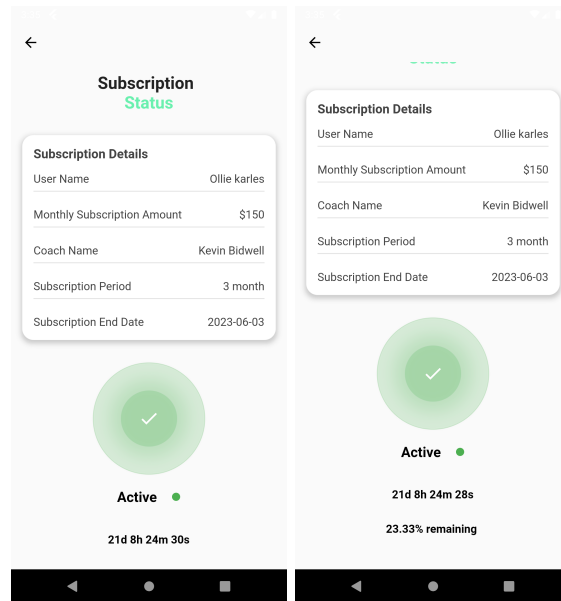


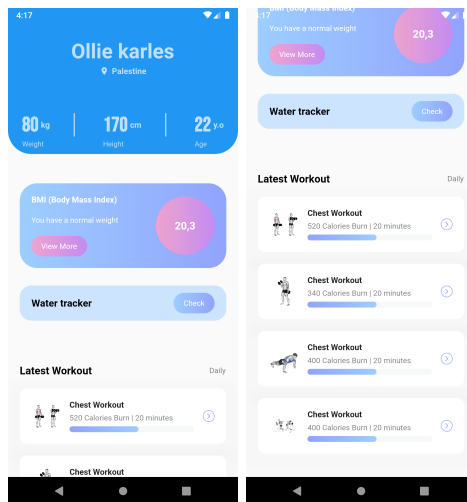
Figure 69: User paid



(a) (b)

Figure 70: User didn't pay

7.3.2.13.3 Account Services the general services page has some main features which are a water tracker, BMI, and the latest workout



(a) (b)

Figure 71: General services page

BMI page

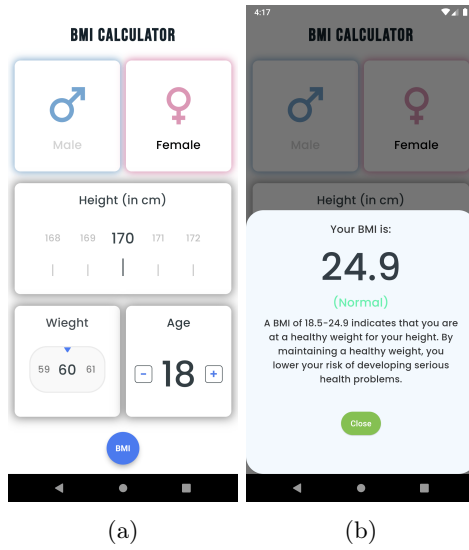


Figure 72: BMI page

Water Tracker Page: the main purpose of this page is to keep the user updated on his water taken amount

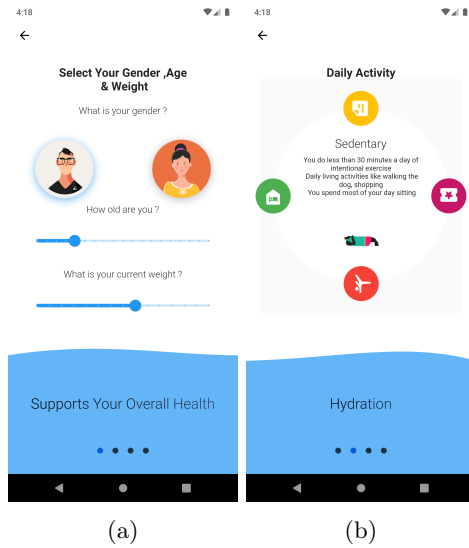


Figure 73: Water Tracker 1

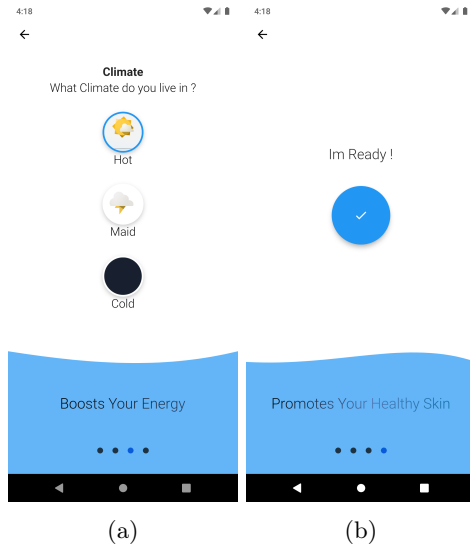


Figure 74: Water Tracker 2

after setting up the profile for the water tracking system the user will be ready to start using it,also user can choose the amount of water he drank.

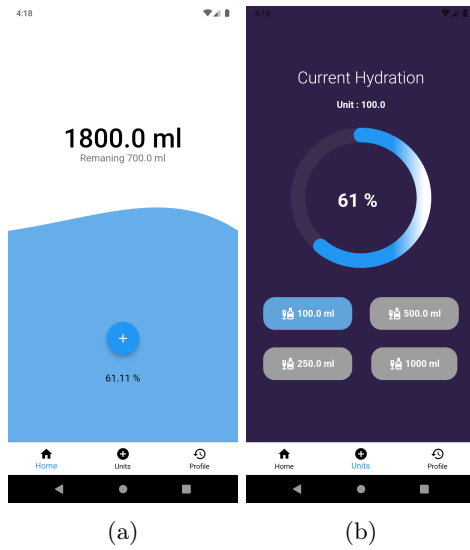


Figure 75: Water Tracker 3

7.3.2.13.4 Gym subscription Through this interface, the user can pay for the Nitro gym subscription. There are four plans that he can choose from. He can subscribe for a month, 4 months, a month, or a whole year. Here, for payment, we used Stripe Payment

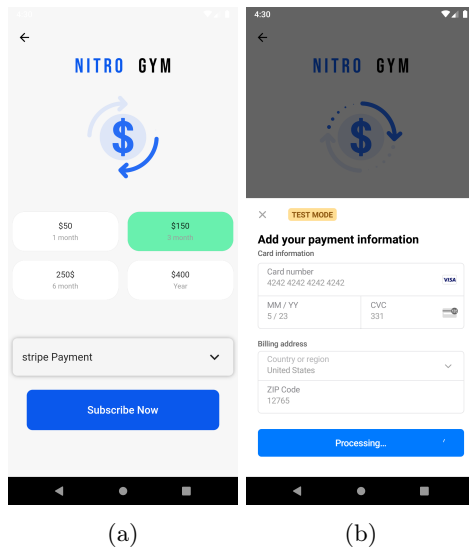


Figure 76: gym subscribtion

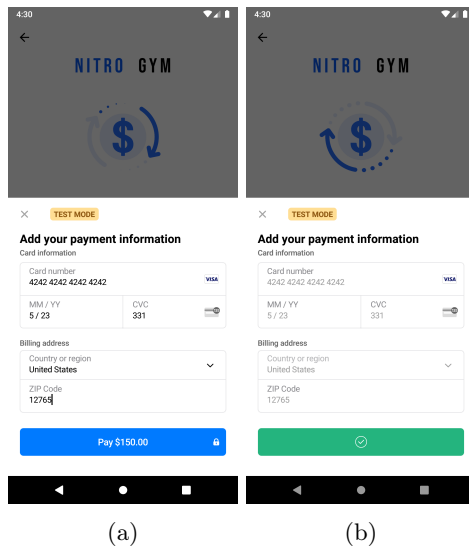
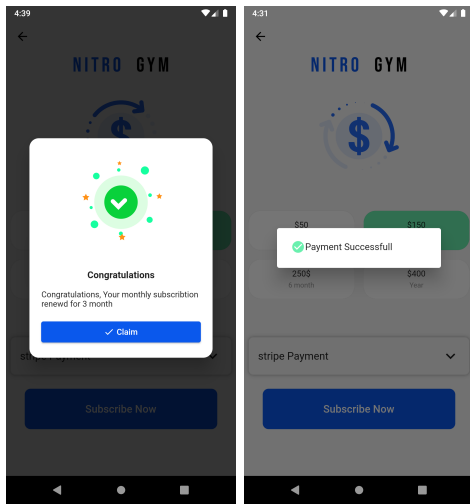


Figure 77: gym subscribtion-continued

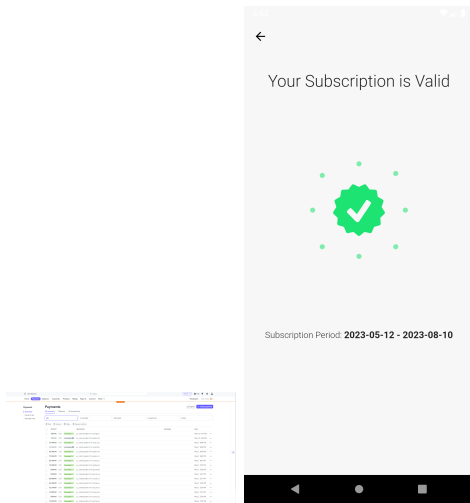


(a)

(b)

Figure 78: payment success

here in figure a, we display the official site for stripe payment, We show the last payment that was made a while ago

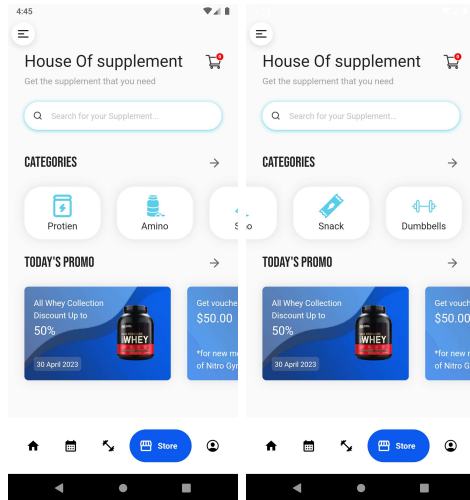


(a)

(b)

Figure 79: subscription valid

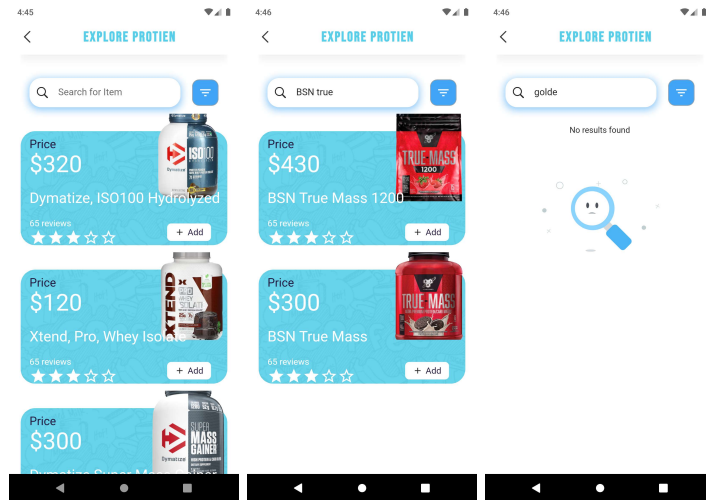
7.3.2.14 Store The main store page has a search box for searching on a specific product and a categories system to arrange the products in a suitable way it also has a list of promo products



(a) (b)

Figure 80: Home Store

user can search for the needed product based on its categories



(a) (b) (c)

Figure 81: protein Store Search

Amino Search

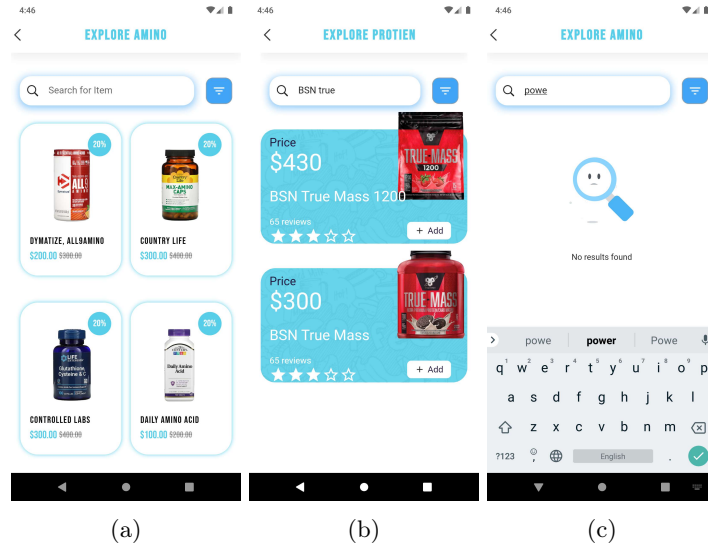


Figure 82: Amino Store Search

When the user wants to buy a new product if the product is available he can buy or if it's out of stock it pops up a message saying out of stock

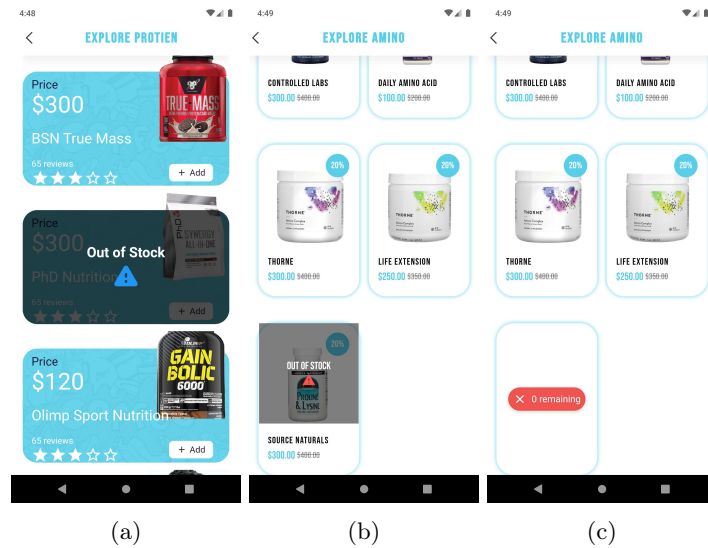


Figure 83: items Quantity

When the user clicks on the product it shows a full detail about the product and adds to the cart button

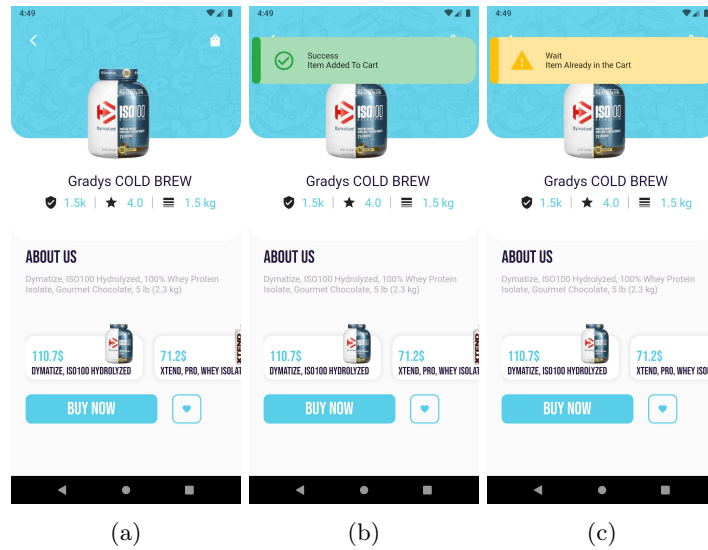


Figure 84: items details

if the item is out of stock then the user can't add it to the cart, here we display the warning Message, in addition to the case when the item is in the cart and the user change quantity, the total price change

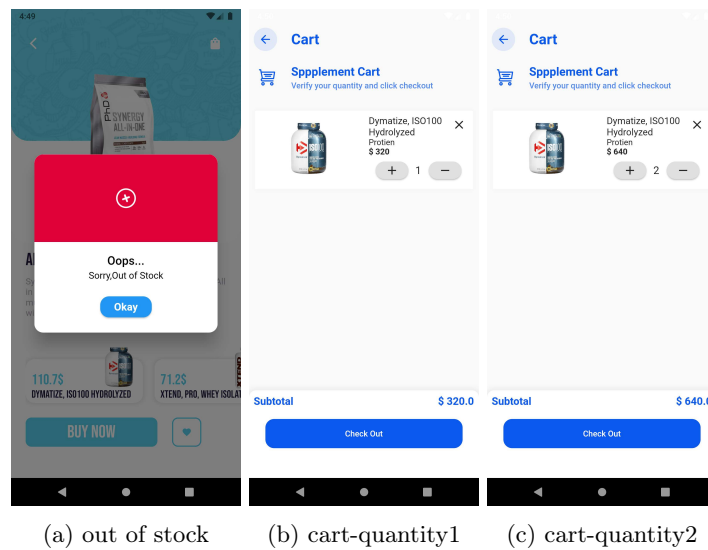


Figure 85: Cart control

here we display a checkout screen in addition to the payment process, we used stripe payment here in test mode.

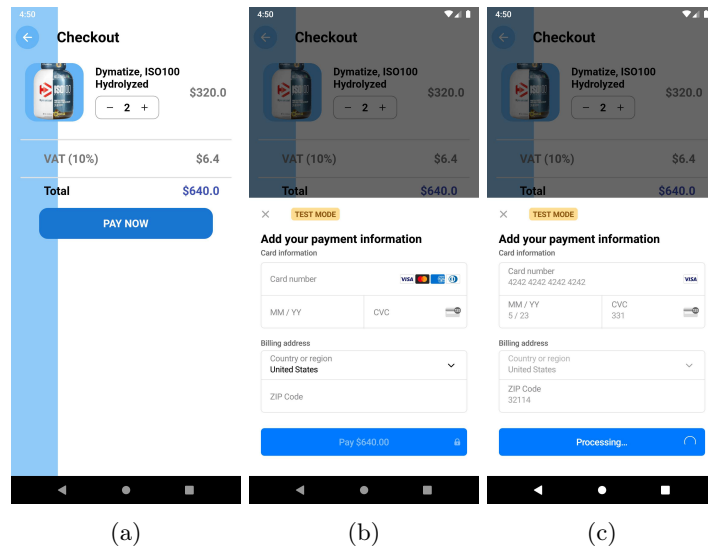


Figure 86: checkout and payment

now after payment is done successfully, we drag a picture of the payment screen of the official site of stripe payment, the last payment that we made appears at the top of the table

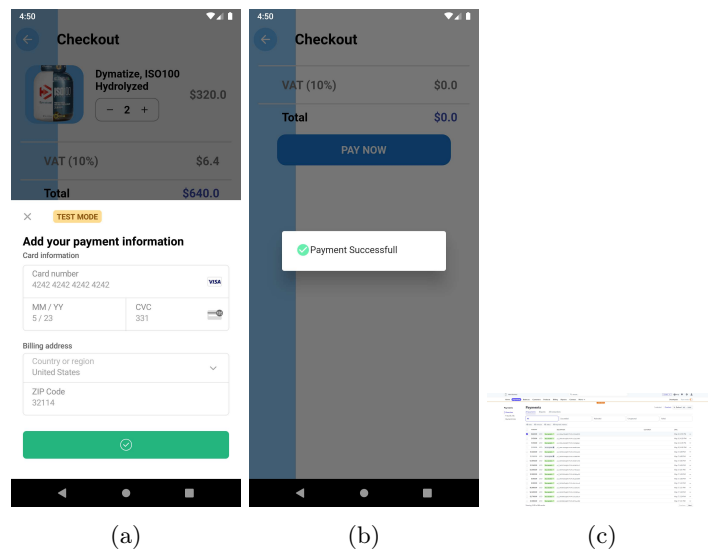


Figure 87: payment details

note that when the item quantity becomes 0, that means the item become out of stock , a notification is alerted by the system to the coach .

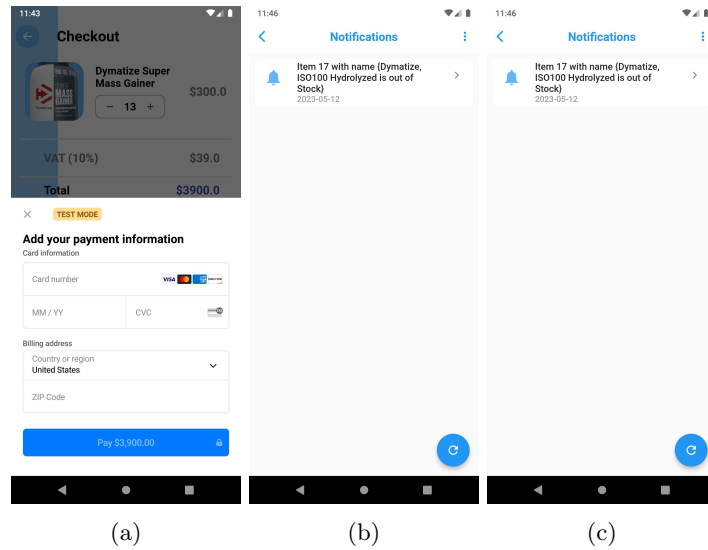
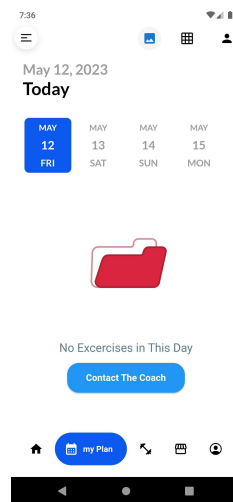


Figure 88: payment details

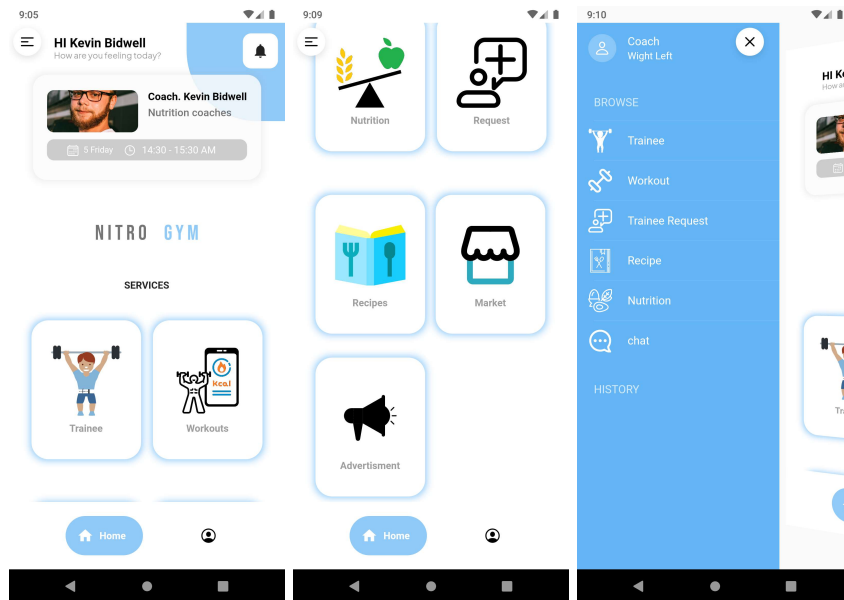
My plan: this section displays the full plan given by the coach to the trainee, to understand how this feature works, we need to preview the coaching side for adding workouts to a paired trainee.



(a)

7.3.3 Coach Home Screen Content and feature

In this section, we will show the role of the coach in the Nitro Gym application, where we provide complete control for the coach, where he can see all the trainees who have registered with him, and he can modify all the exercises in the system, delete them, and add new exercises as well. He can also add a nutrition plan, modify existing plans, and delete them as well. It can link a specific trainee with a specific nutrition plan, and it can also set a training plan for the trainees who are associated with it, and it can also add food recipes to the system, modify them, and delete them as well, in addition to adding new items to the application store, modifying existing items, and deleting one of the items as well. Finally, it can publish advertisements. In turn, it will appear on the main screen of the trainee's application.

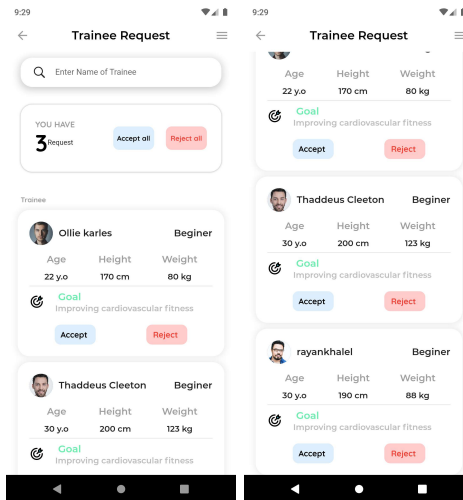


(a) coach home1

(b) coach home2

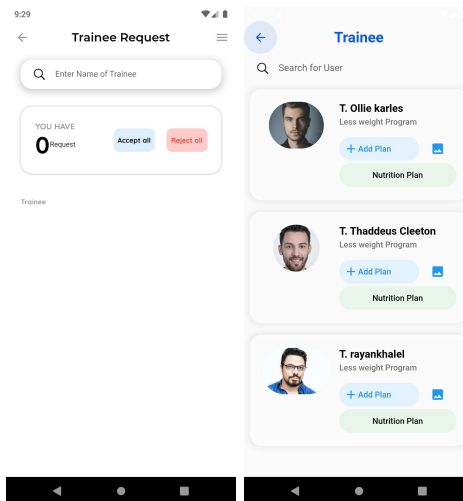
(c) coach drawer

7.3.3.1 trainee request feature : On this, page we display the requests to contact the trainer sent by the trainees, where the trainer can accept or reject the request. in this picture, the trainer accepts all the request, so when he is accepted someone's trainee info is transferred to the trainee page (will explain it), else the request only drop from the page



(a) 3 request arrive (b) 3 request arrive

Figure 91: trainee request

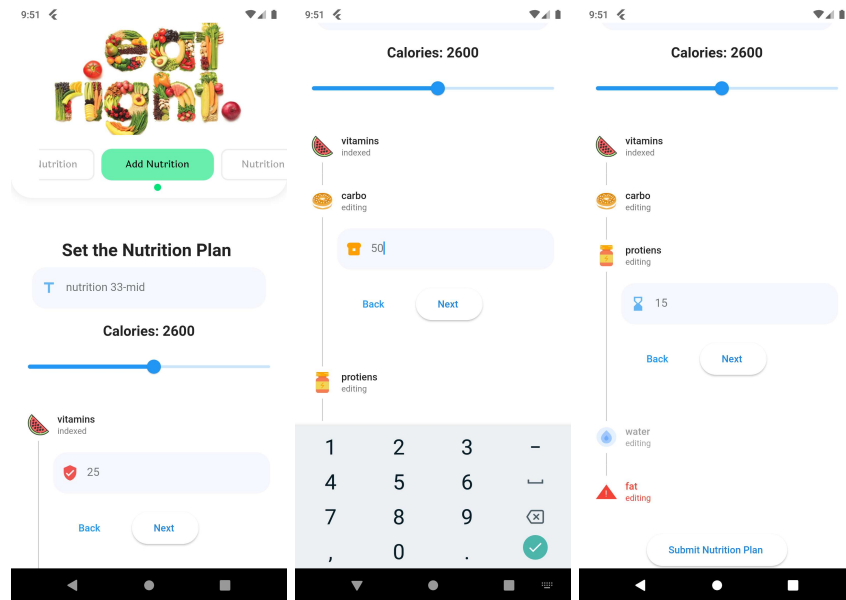


(a) accept all request (b) trainee added

Figure 92: trainee request-continue

7.3.3.2 Add Nutrition feature : The trainer can add a nutrition plan consisting of proteins, calories, vitamins, carbohydrates, water, and fats, and after this plan is created, he can link it to a specific trainee; this will be clarified in the trainee's section. He can also modify an existing plan, and he can also delete nutrition plans if he wants.

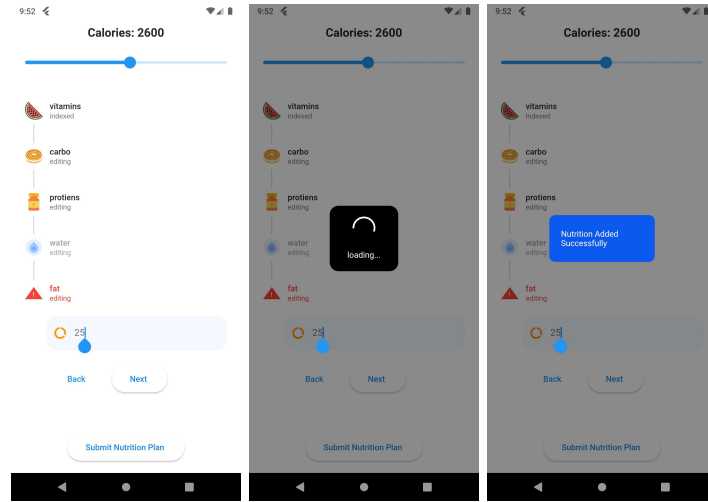
here coach wants to create a new nutrition plan called 'nutrition 33-mid' with the following data.



(a) add nutrition step1 (b) add nutrition step1 (c) add nutrition step1

Figure 93: Add Nutrition feature

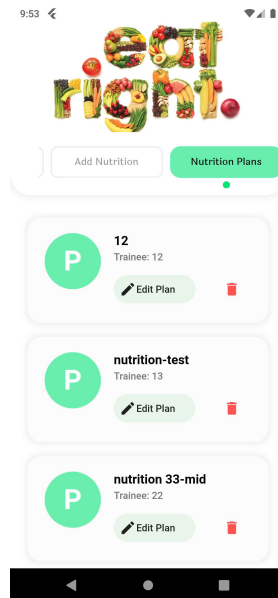
coach submit the data , and the nutrition added successfully



(a) last step (b) submit data (c) nutriton added

Figure 94: Add Nutrition feature-continue

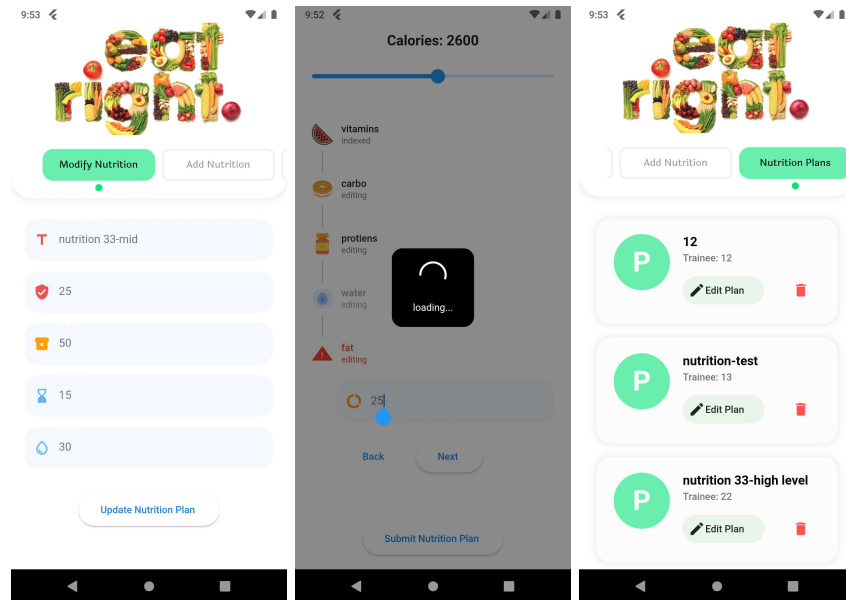
coach views the new nutrition in the nutrition list, and checks if added.



(a) nutrition plan view

Figure 95: view Nutrition Plan

coach make a mistake with the name of the nutrition and the carbohydrates value, so he wants to edit the name and the carbohydrates.



(a) update Nutrition

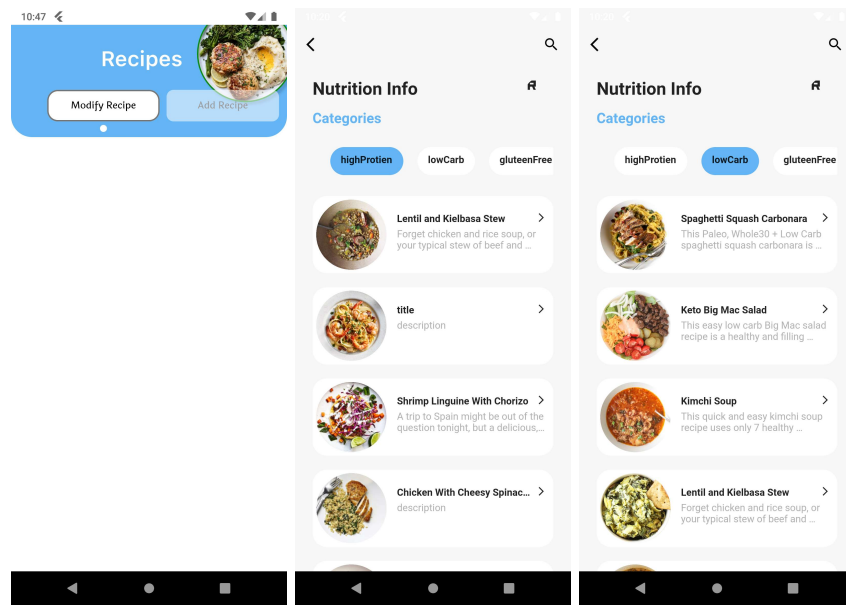
(b) submit data

(c) view nutrition again

Figure 96: update Nutrition

7.3.3.3 Add recipe feature : Through this feature, the trainer can add a healthy food recipe to the system, and he can modify the existing food recipes and delete them as well. When the trainer adds a new recipe, a notification appears to all trainees that there is a new recipe added to the system.

when the coach clicks on the recipe button on the home screen this screen appears, there is 2 choice either modify a recipe or add a new recipe, note that modify section include delete too as we will see, so here the coach choose to modify the recipe , Here we have arranged all the recipes in the system based on their categories



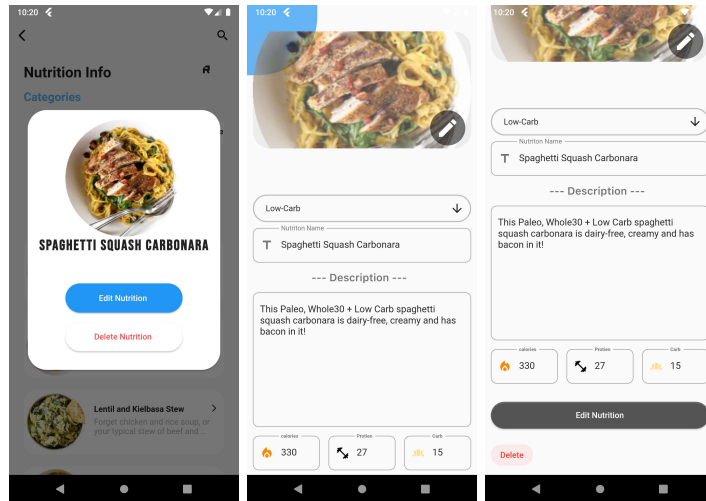
(a) recipe home

(b) recipe category 1

(c) recipe category 1

Figure 97: modify recipe

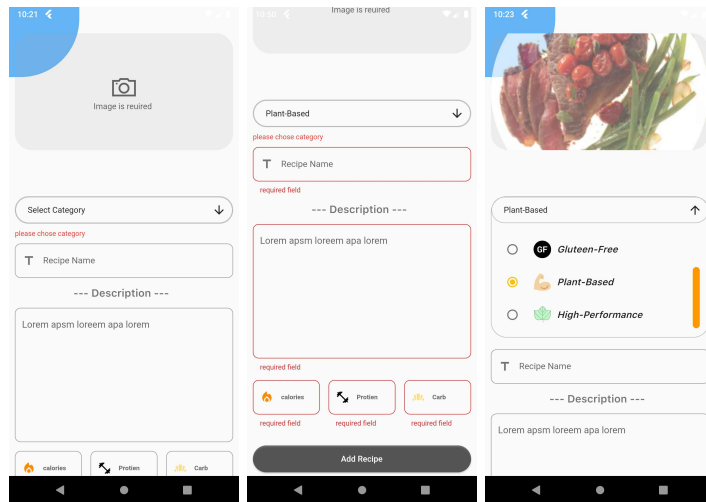
if the coach wants to edit any recipe, he can press on its picture and a pop up appear , Accordingly, he chooses to either modify or delete it



(a) modify recipe (b) modify screen (c) modify screen2

Figure 98: modify recipe-continued

now let's switch to add recipe section , so when the user click on add recipe , this screen will appear



(a) add recipe (b) data validation (c) fill data

Figure 99: add recipe

the coach continue filling in the recipe data

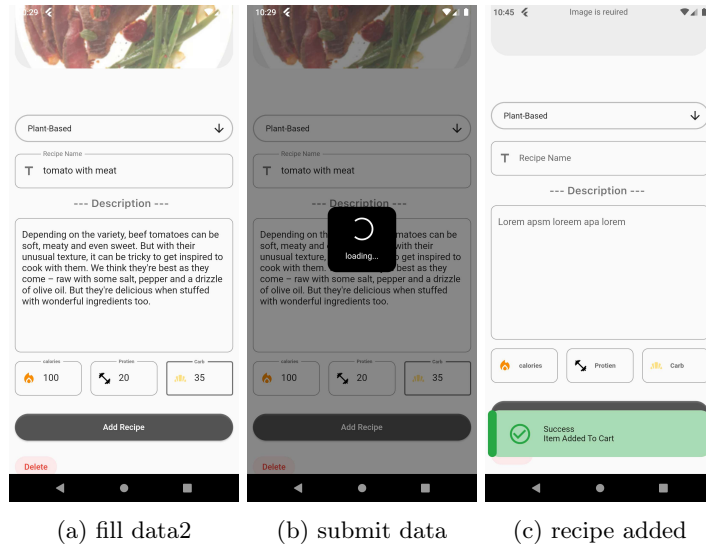


Figure 100: add recipe

now coach wants to ensure that the recipe was added, to try the delete, we have to delete it to show the delete process

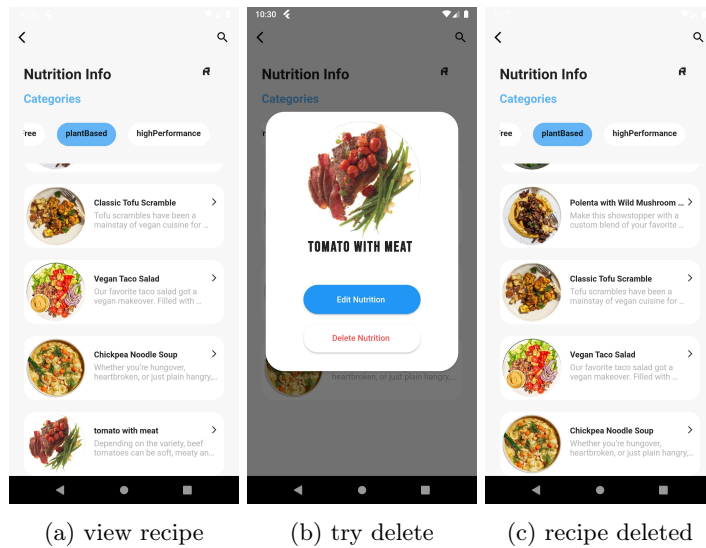
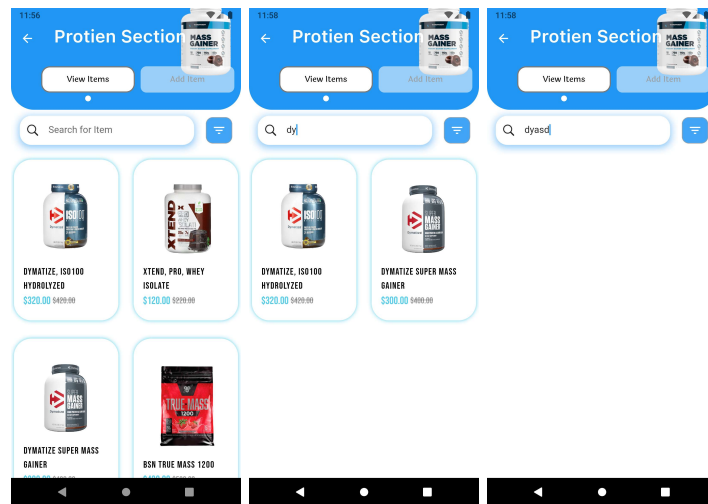


Figure 101: view and delete the recipe

7.3.3.4 Add Item to the Market :

the application provides the coach's side with full CRUD operations for the items in the store based on the need of each trainee.

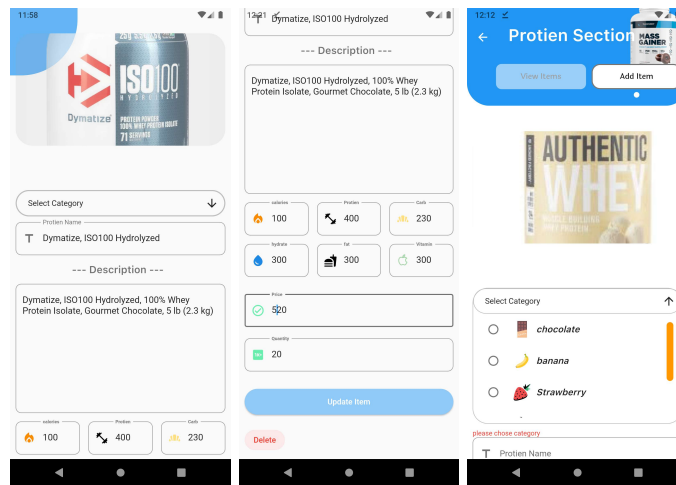
View product page



(a) view page (b) view page search (c) search no result

Figure 102: view market product

Edit page Add product section



(a) (b) (c)

Figure 103: add market product

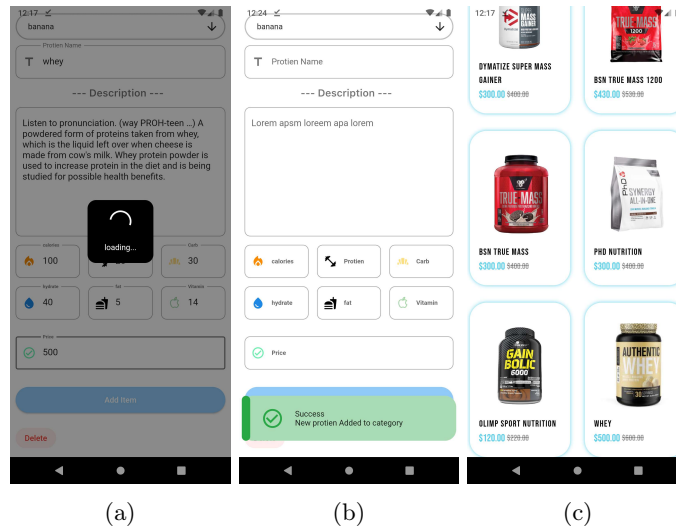


Figure 104: add market product 2

after adding a new item to the store the coach can edit the item details

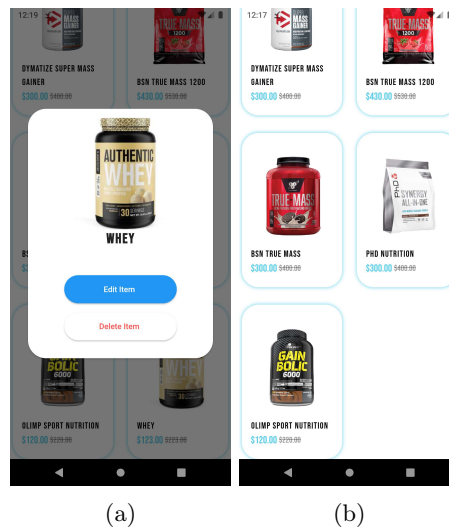


Figure 105: Edit market items

7.3.3.5 Advertisement :

The application provides an advertisement system to run different Advertisements based on the gym agreement

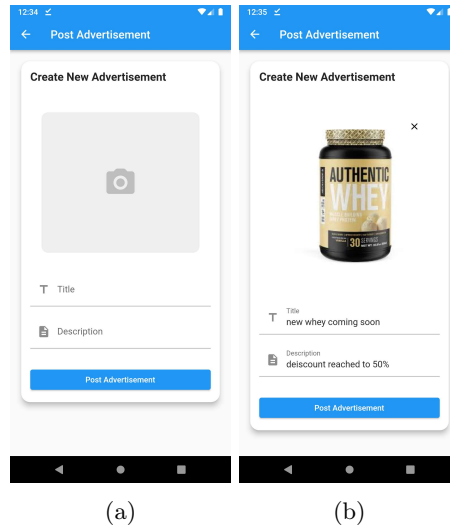


Figure 106: Advertisements page

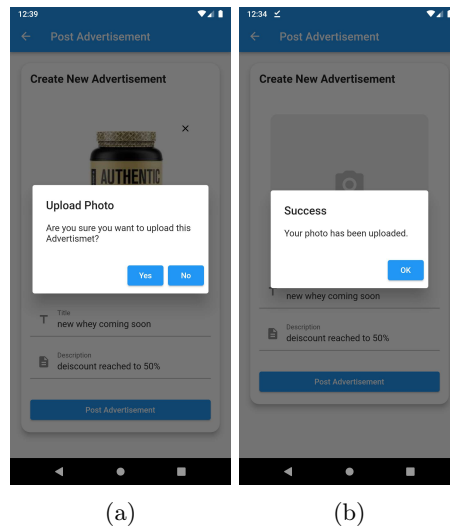


Figure 107: Advertisements page

7.3.3.6 Add Workout :

The add workout system provides a view and edit page for adding, deleting, and updating the data for the workouts based on the categories of each muscle.

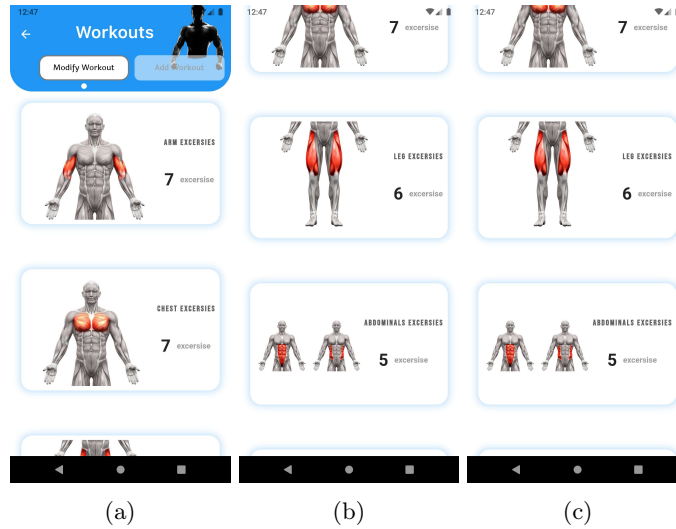


Figure 108: view workout cat

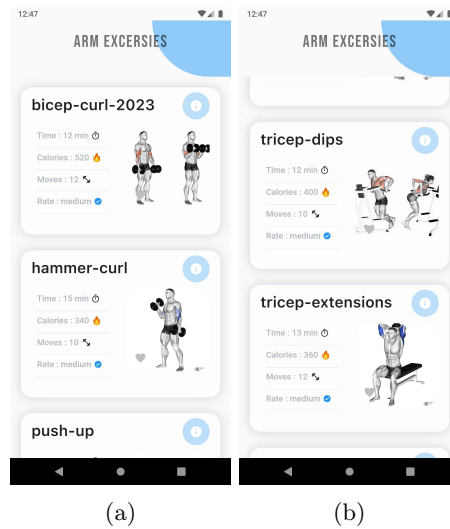


Figure 109: Modify workout page

when clicking on the exercise it asks the user to modify or delete exercises:

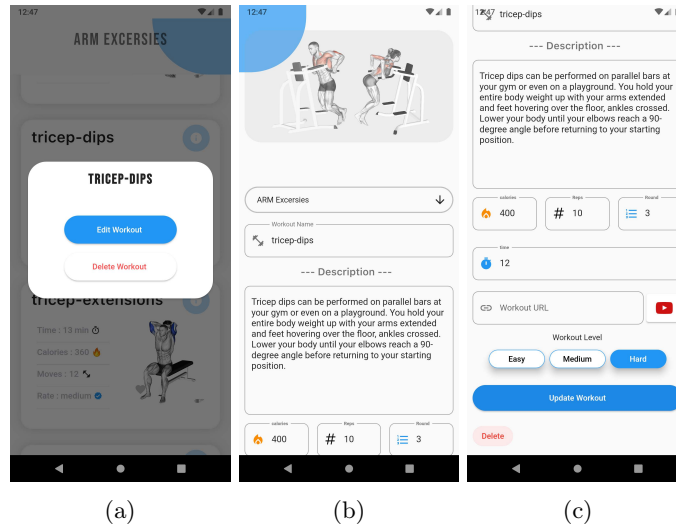


Figure 110: Modify workout page-continued

Adding workout section

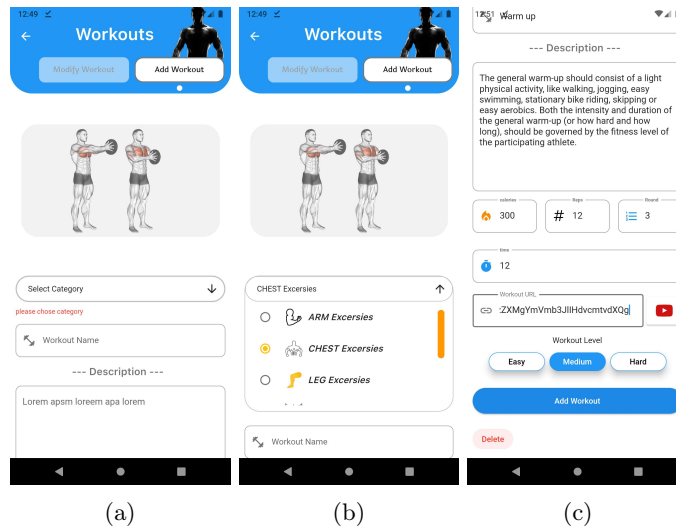
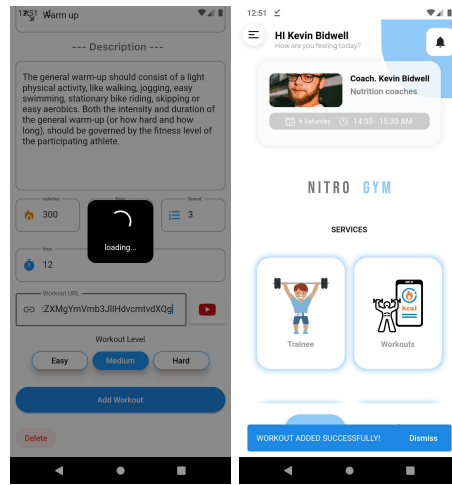


Figure 111: add workout page

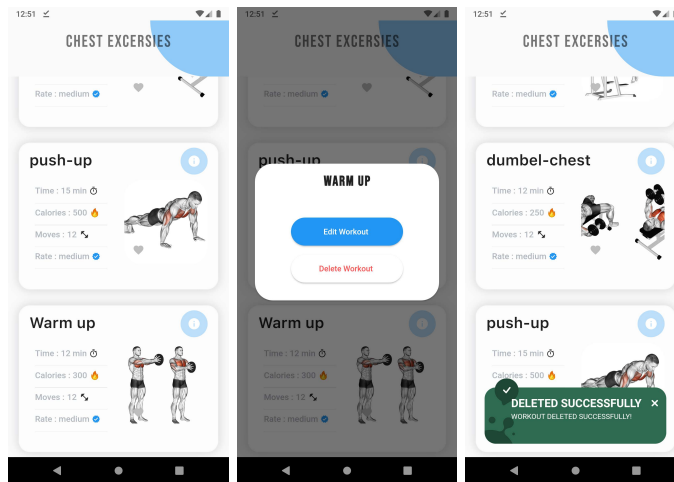


(a)

(b)

Figure 112: add workout page-continued

Delete workout



(a)

(b)

(c)

Figure 113: Delete workout

7.3.3.7 trainee tracking :

This section is considered the most important section for the coach, through which he can view the trainees associated with him, and can manage their exercises through this interface, where he can link a specific trainee with a nutritional plan, he can reserve the training plan, and add exercises to this plan as it will be explained now, and the coach can find out if the trainee pays the monthly subscription for the nitro gym or not, and he can know the remaining time(in days) until the end of the training plan that he assigned to the trainee, and after that plan ends, the trainer will receive a notification stating that

7.3.3.7.1 view trainee :

here coach can see the trainee associated with him and can search for a specific trainee

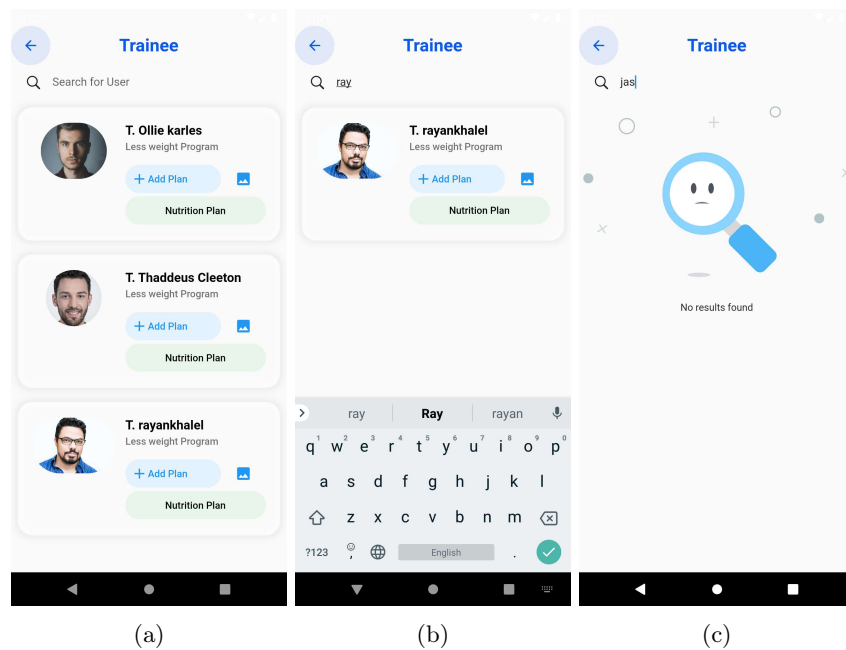


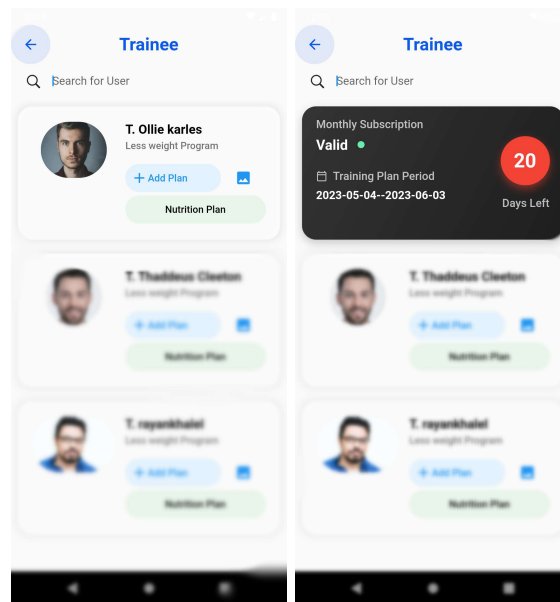
Figure 114: view trainee

7.3.3.7.2 trainee card :

Here we will explain the trainee card, and what each button refers to.

1. **Add Plan button.** Through this button, the coach can control the trainee's plan, as will be explained later
2. **image button;** through this button, the trainer can see the weekly photos of the trainee and add comments to the photo, and these comments will be sent to the trainee.
3. **Nutrition plan button,** through this button the coach will be able to link the nutrition plans to the trainees

Note when the coach clicks in the whole card, it will flip into another card which displays the monthly subscription status, and the period of the workout plan, in addition to the remaining days for the end of the workout plan



(a)

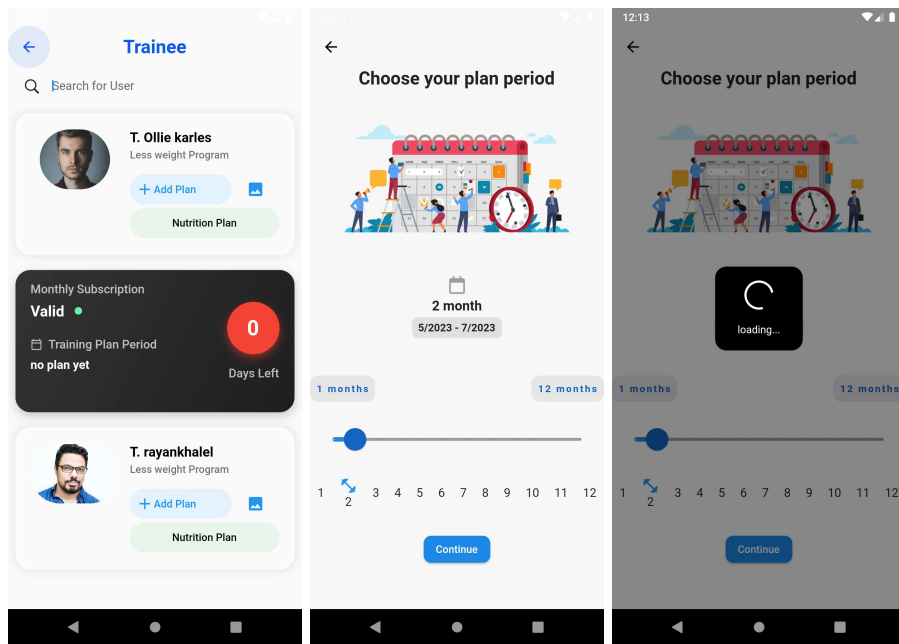
(b)

Figure 115: trainee card

7.3.3.7.3 Road Map :

Let us focus on this section, as it is considered the section responsible for developing plans by the coach for the trainee. At first, the coach reserves a date for the plan, for example, he can book a plan for a month. Based on the period of this plan, we will build a map starting from the current date until the end of the plan date. The trainer can add exercises for the trainee through this map, as we shall see

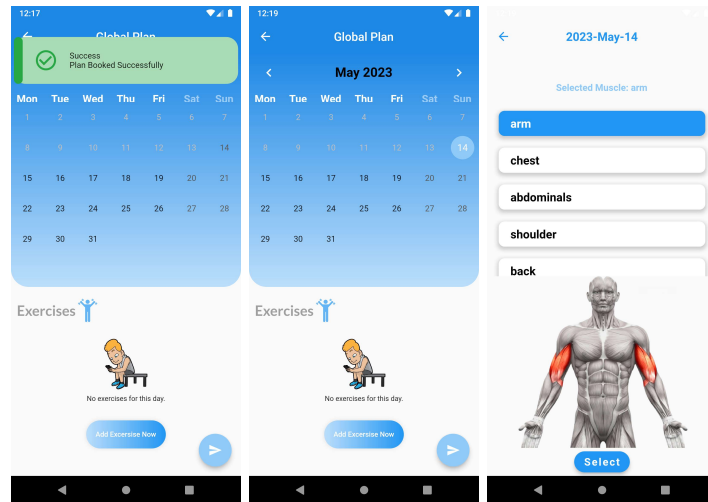
To take this example, let's assume that the trainer will add a plan to the trainee 'Thaddeous'



(a) trainee doesn't have plan (b) book plan period for trainee (c) submit plan period for trainee

Figure 116: Book a plan for trainee

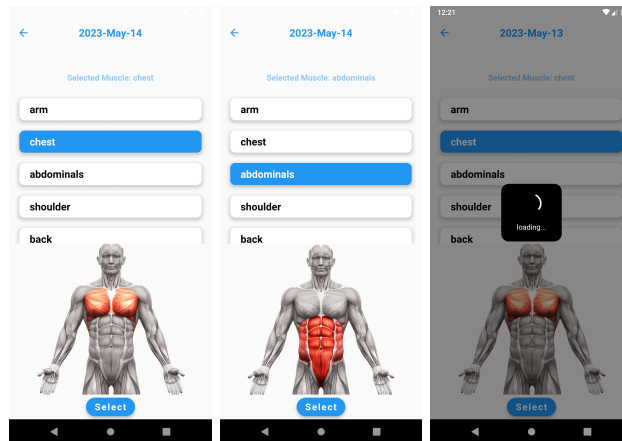
after the period is booked successfully, now The coach will choose the 14th of the month to add exercises to it.



(a) trainee doesn't have plan (b) book plan period for trainee (c) submit plan period for trainee

Figure 117: Book a plan for trainee

there are many muscles that the coach can choose to have his own exercises, but the coach chose the chest muscle.



(a) view muscles (b) view muscles (c) target muscle

Figure 118: choose target muscle

now the target muscle is selected successfully, so the coach will select the

workout plan exercise according to the target muscle

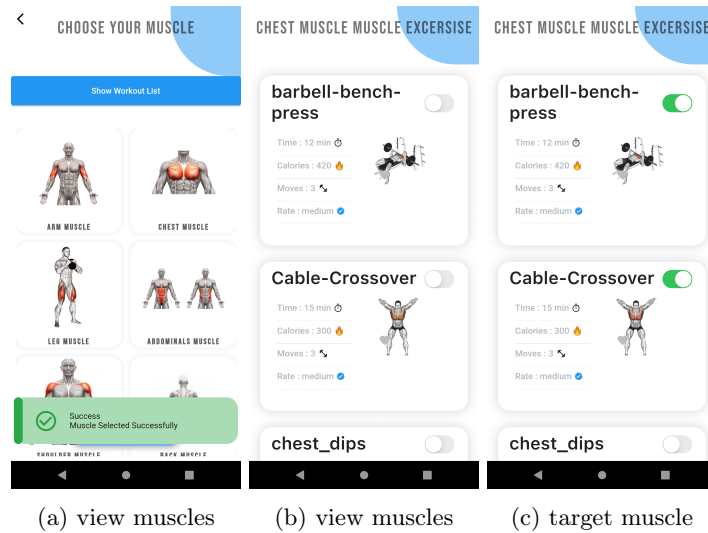


Figure 119: selecting workouts plan exercises

after selecting the exercise, the coach can make a quick look at the exercises before submitting them by clicking on the show workout list button.

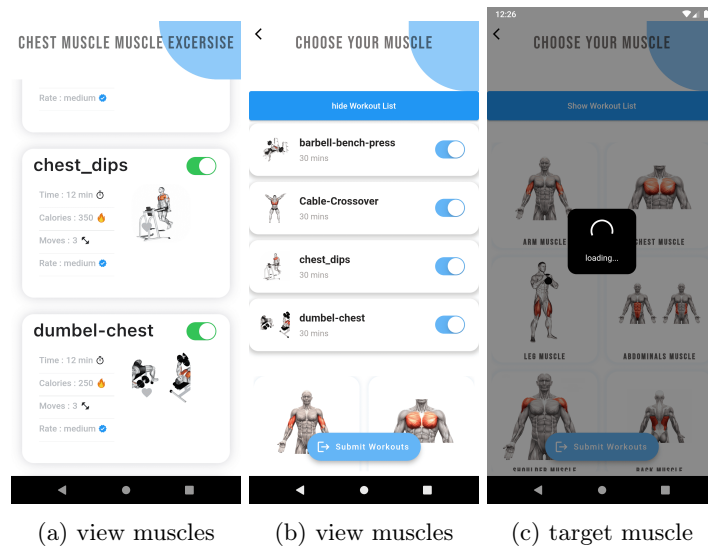
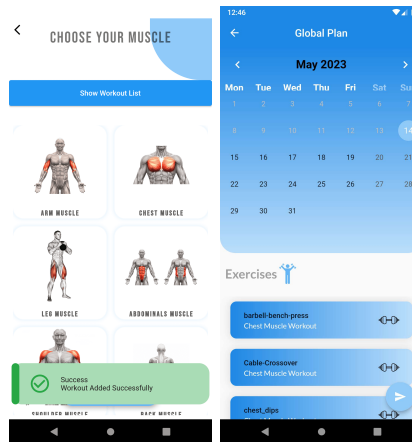


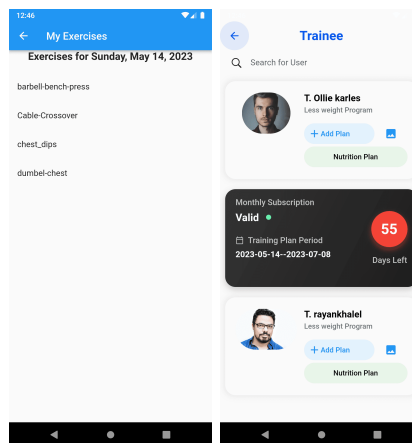
Figure 120: choose target muscle

After successfully adding the exercises to the trainee, let's look at the Global Plan page. The day to which the exercises were added has changed its shape, and a symbol has been added to designate it as containing exercises. If we look at the bottom of the screen, the exercises for this day appear, as well as when clicking on the arrow below. On the right of the screen, we can also see the exercises that are on this day, and we also notice one last thing, which is the trainee's card that was changed and now contains the data of the new plan.



(a) exercise added (b) global plan

Figure 121: choose target muscle



(a) exercise page (b) trainee data

Figure 122: choose target muscle-continue

7.3.3.7.4 Nutrition Plan :

Through this interface, the trainer can link the nutritional plans with the trainees. He can search for the name of the nutritional plan that he created and link it directly to the trainee.

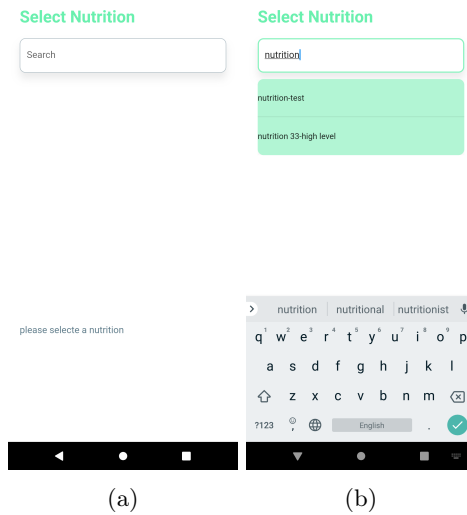


Figure 123: connect-nutritionplan

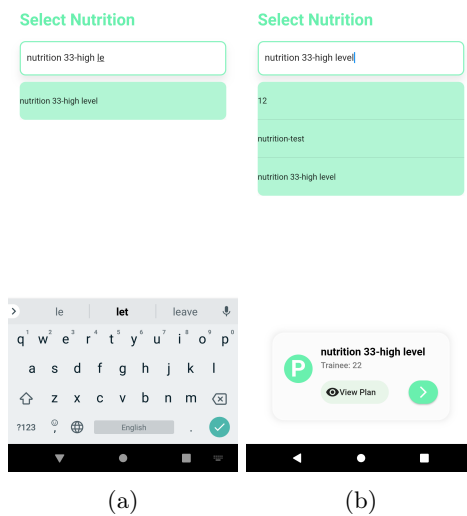


Figure 124: connect-nutritionplan-continued3

here coach can make a quick look at the nutrition data before sending it to the trainee

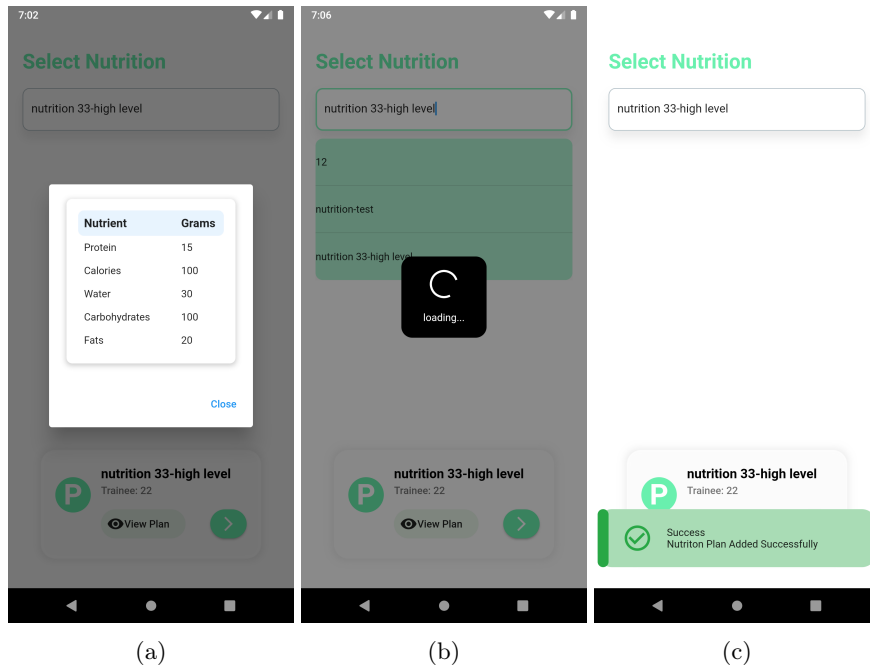


Figure 125: connect-nutritionplan-continued4

Now that we have explained the functionalities of the coach, Now we will return to the final feature of the trainee, which is the 'User Plan' feature.

7.3.3.7.5 trainee Workout Plan :

here we focus on the trainee who is called 'Cleeton', so we will open his account and see the changes that the coach made for him, here we see in **Fig. b** the value of calories that the coach put for the trainee appears in the home screen, and **Fig.c** displays the interface for my plan feature, As we can see on Day 14, the workout plan exercises that the coach selected were displayed here.

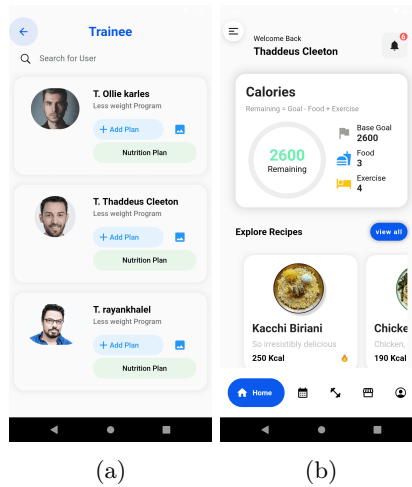


Figure 126: view trainee plan

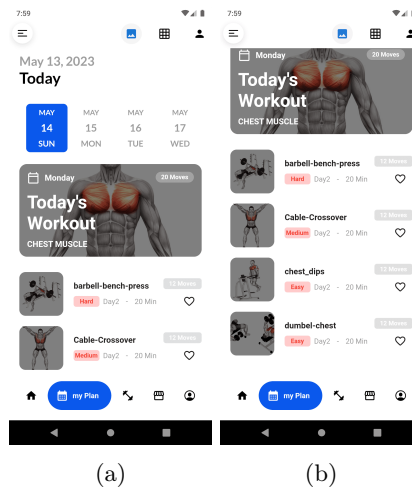
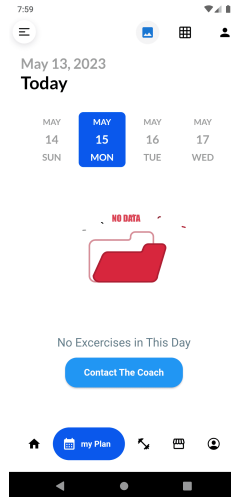


Figure 127: view trainee plan-continued

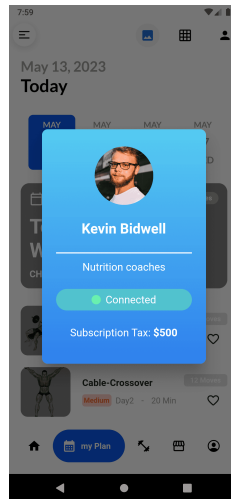
Here we show that on the 15th day, there are no exercises yet, so this message appears



(a)

Figure 128: no exercise

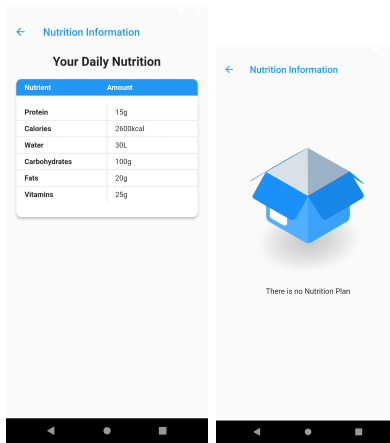
The purpose of the person icon Button at the top right of the screen is to display the trainee's current Coach



(a)

Figure 129: no exercise

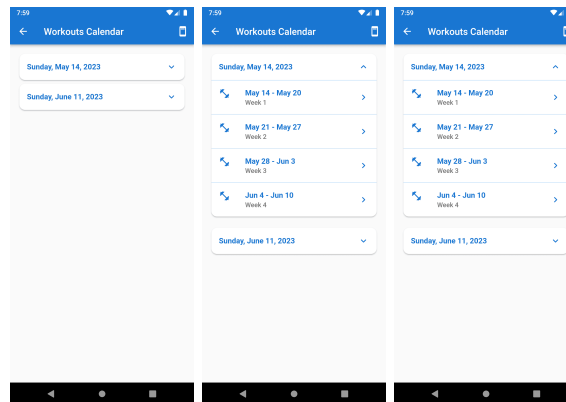
When clicking on the schedule icon next to the person icon, we display the trainee's nutritional plan schedule, if there is no nutrition plan, the interface be like Fig.b



(a) nutriton plan (b) no data

Figure 130: upload weekly photo-1

When clicking on the image icon, We display the training plan in the form of weeks so that the trainee can upload weekly pictures easily, so that the coach can follow the development of the trainee's body.



(a) (b) (c)

Figure 131: upload weekly photo-2

Here we show the screen for uploading the weekly photos, and the trainee can see his trainer's comments on his weekly photo

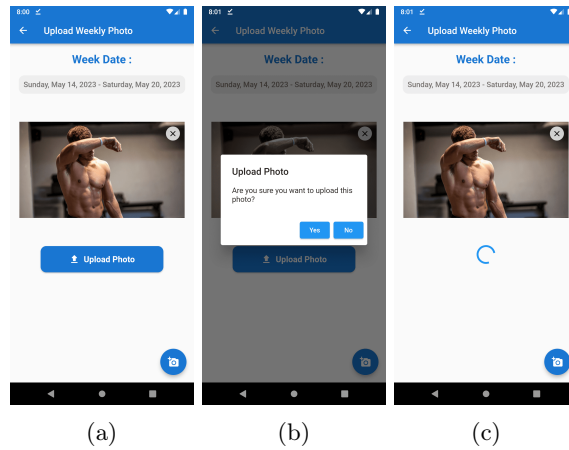


Figure 132: upload weekly photo-2

Here is the comment section for the weekly photo

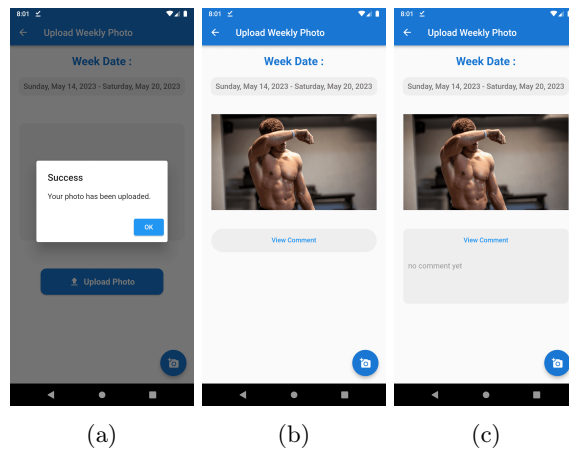


Figure 133: upload weekly photo-2

Note!!: Now we will sign into the coach account and add comments to the weekly photo of the trainee

7.3.3.7.6 weekly photo tracking : a coach can access weekly photos of the trainee using the image button.

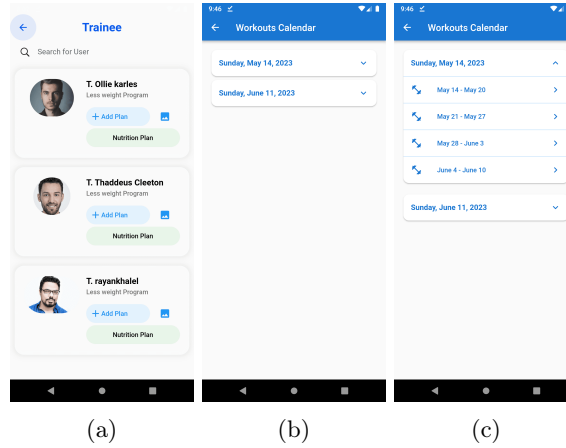


Figure 134: weekly photo tracking

coach can add the comment now .

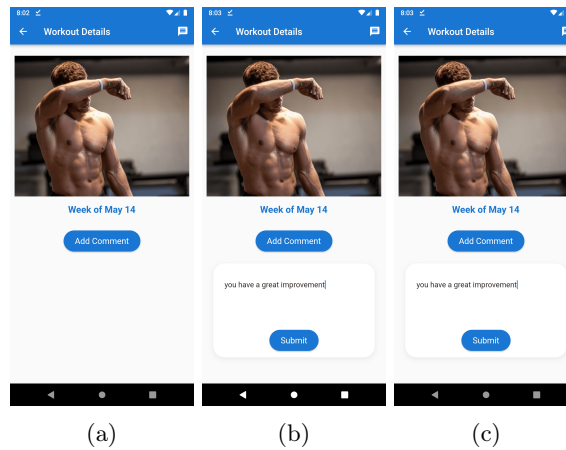


Figure 135: weekly photo tracking

comment submitted successfully

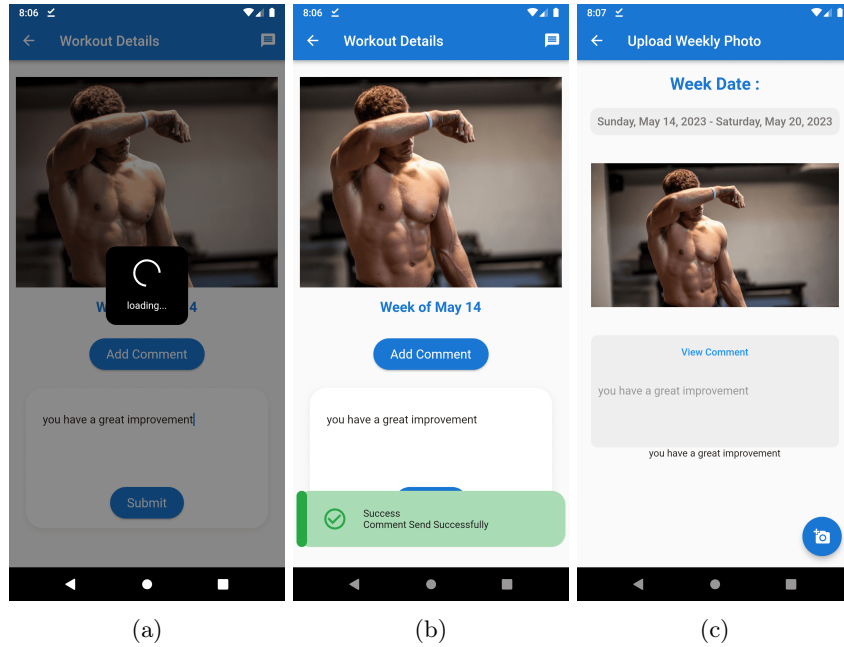


Figure 136: weekly photo tracking

if the weekly photo has not been uploaded yet, this page appears like that

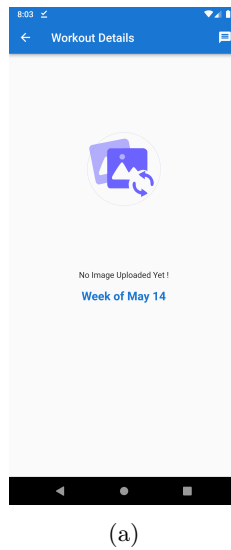


Figure 137: weekly photo tracking

7.3.4 dark-light feature

: This feature aims to make the application more user-friendly, by supporting dark and light modes, as we see in all pictures we activate the light mode, but here in these picture we will show some of the screens with dark mode activated

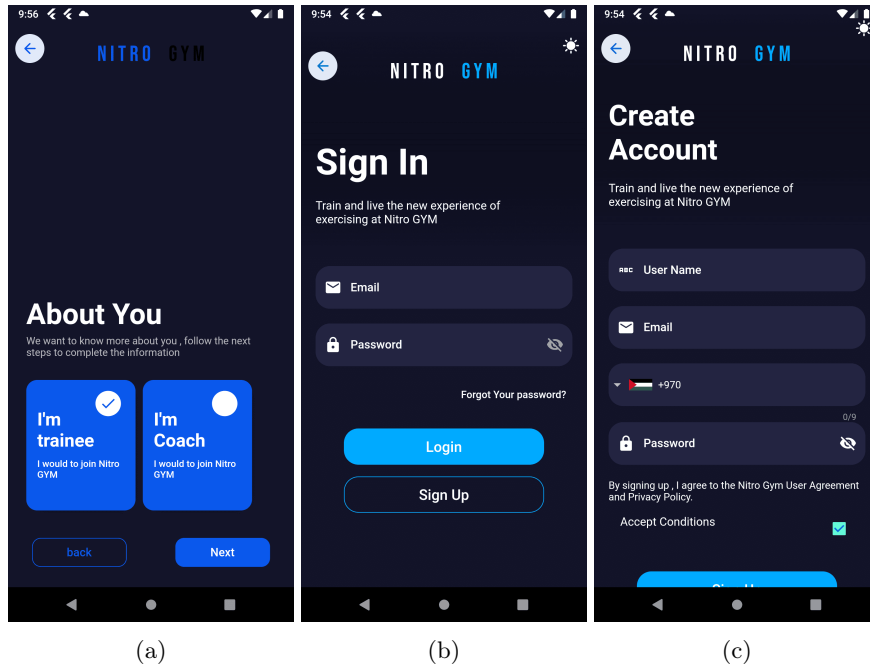


Figure 138: dark mode

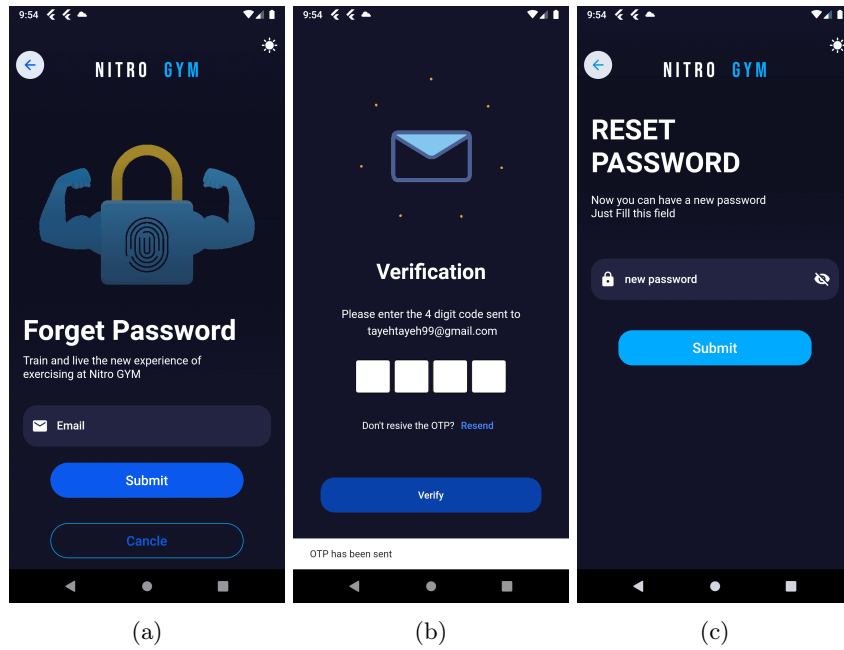


Figure 139: dark mode-continue

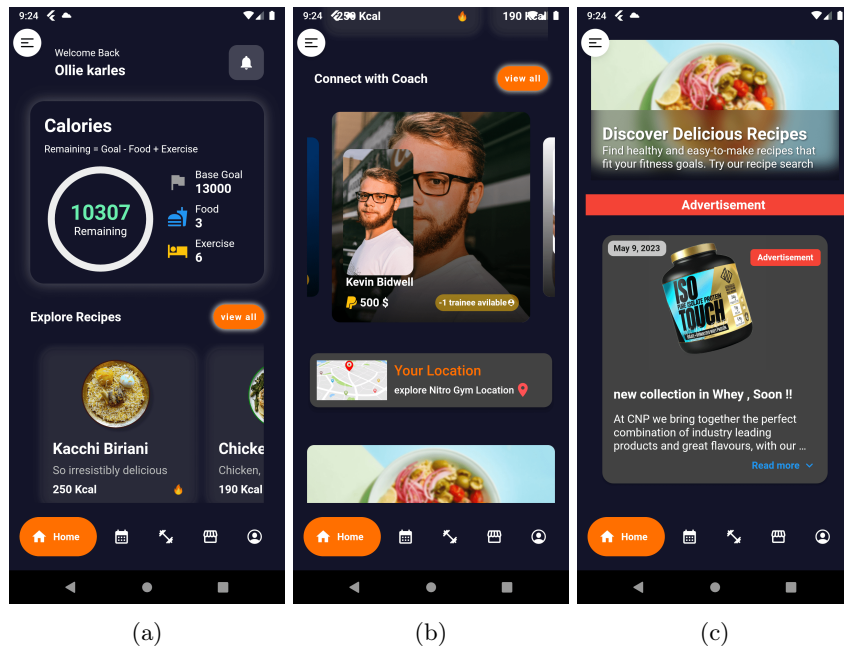


Figure 140: dark mode-continue2

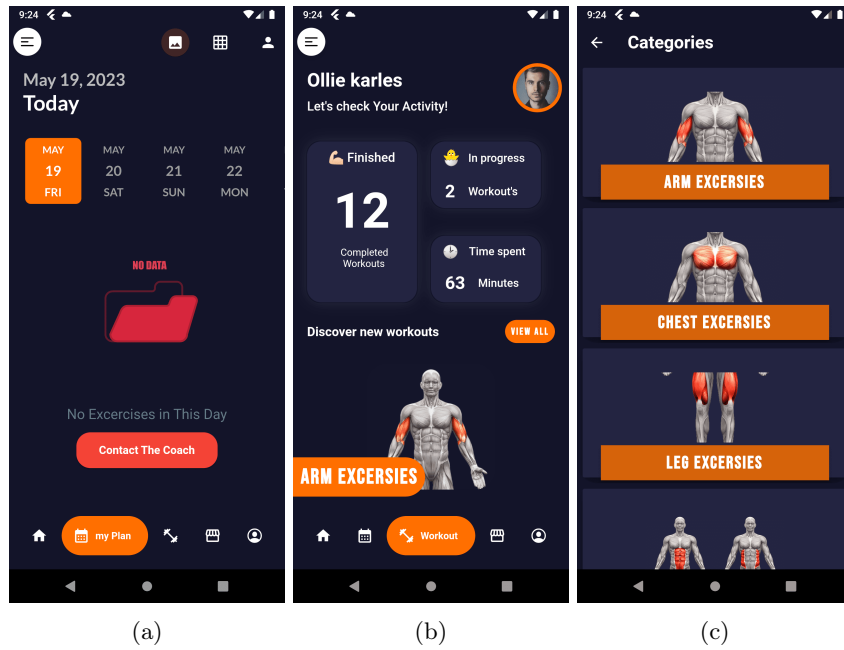


Figure 141: dark mode-continue

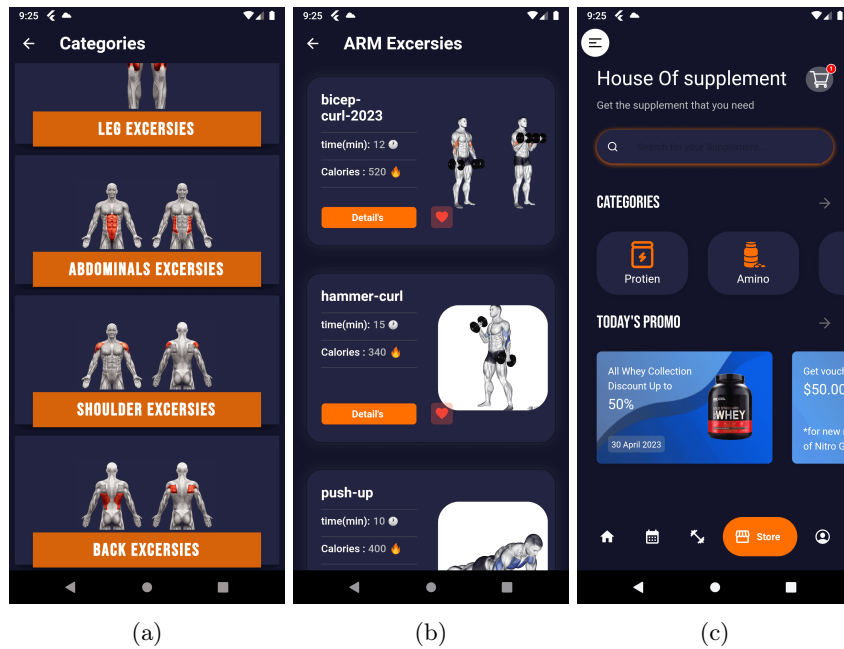


Figure 142: dark mode-continue2

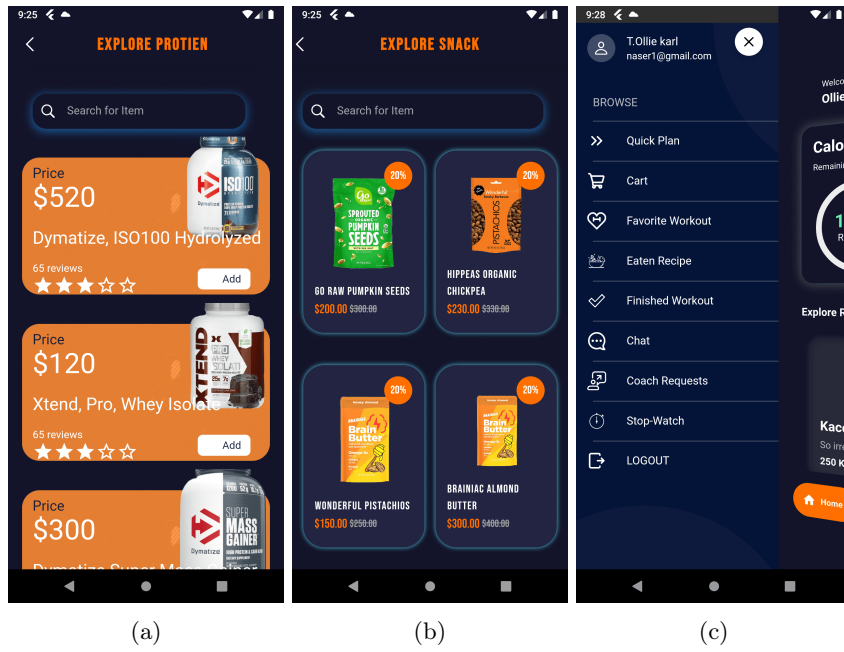


Figure 143: dark mode-continue

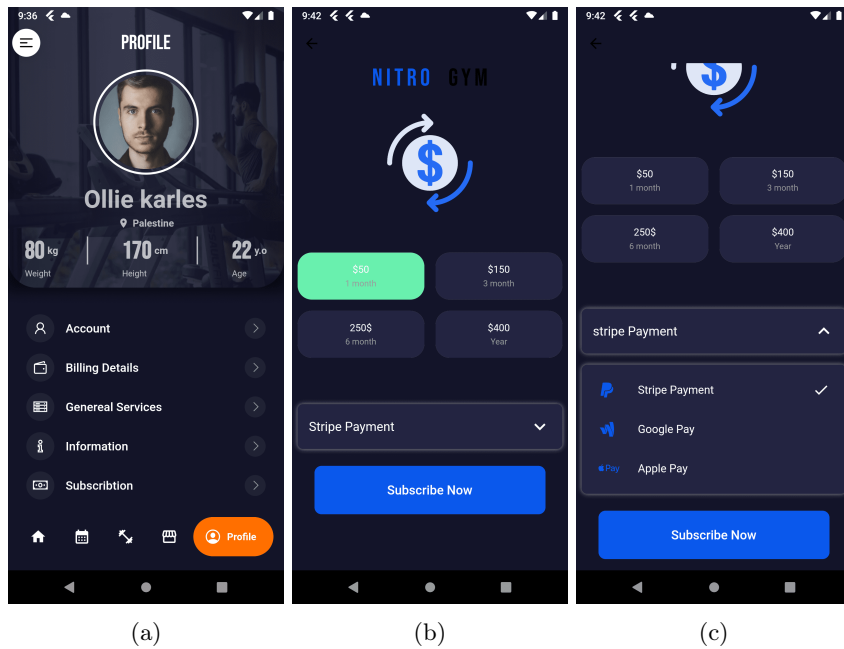
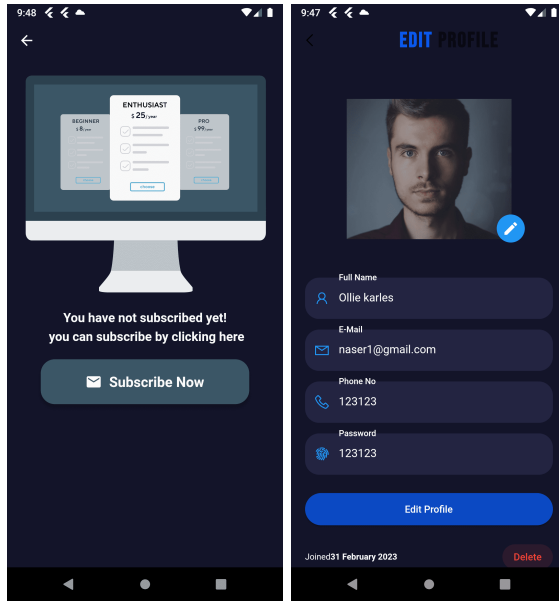


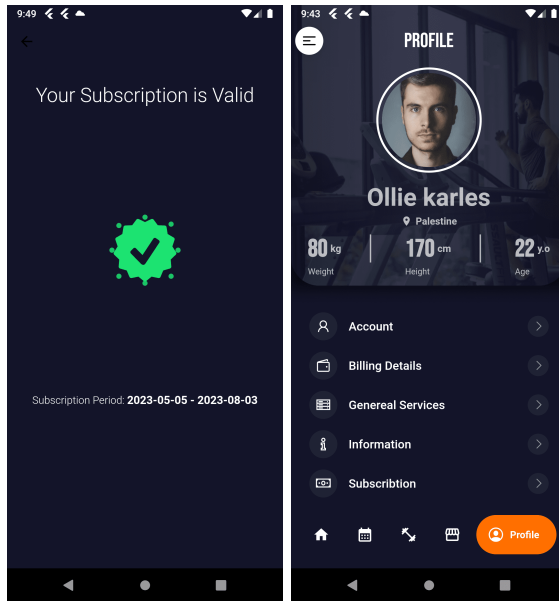
Figure 144: dark mode-continue2



(a)

(b)

Figure 145: dark mode-continue



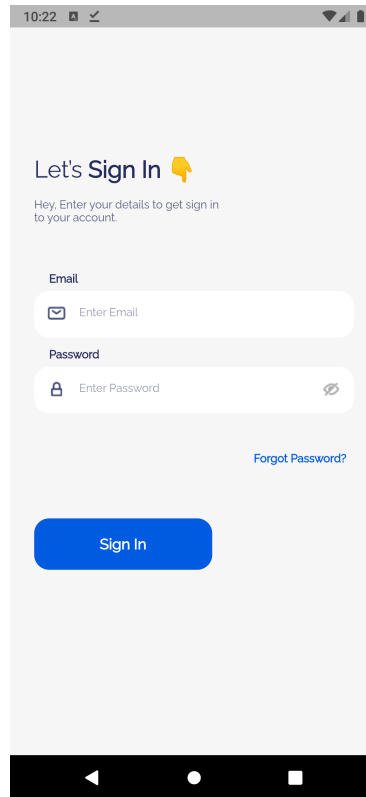
(a)

(b)

Figure 146: dark mode-continue2

7.3.5 Admin page

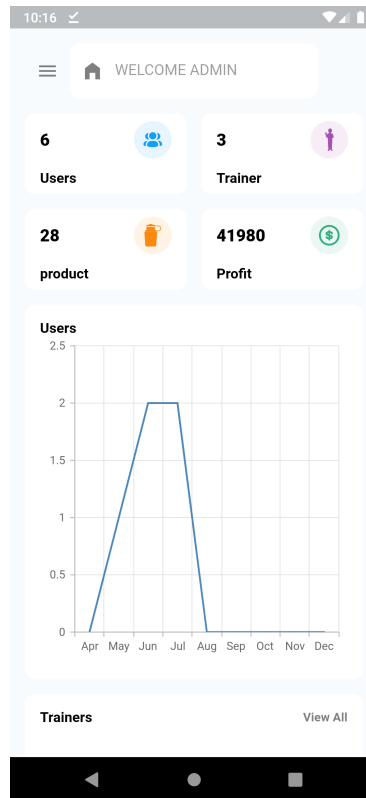
in this section, we will review the full process of admin pages



(a)

Figure 147: admin-page

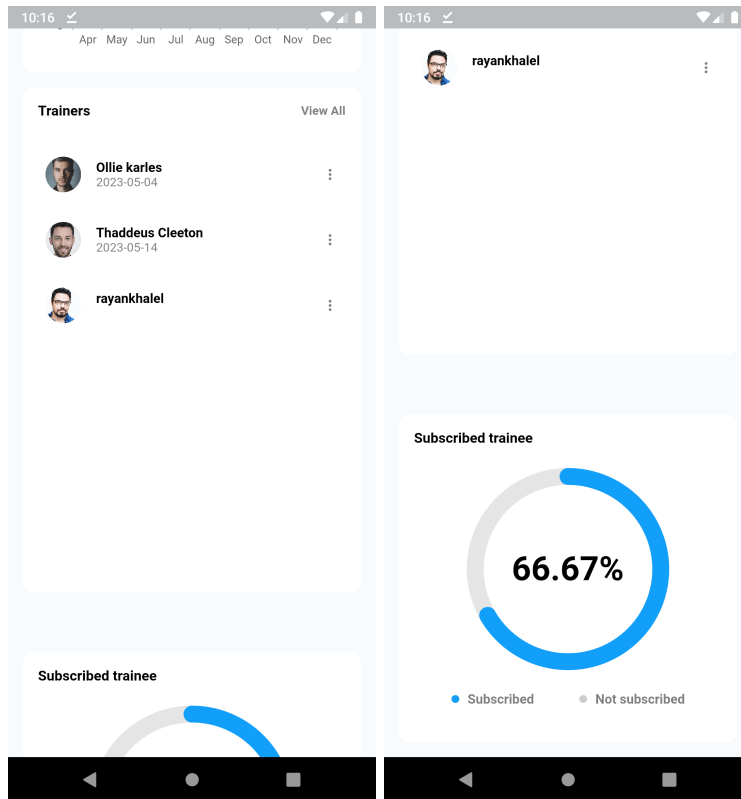
this page shows general statistics for the gym data such as profit, users, and trainees in the system



(a)

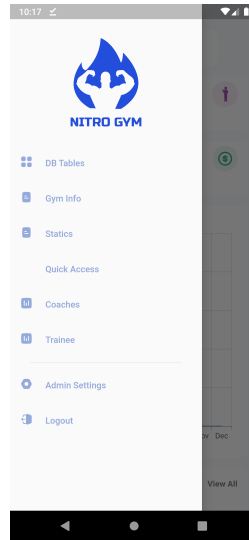
Figure 148: admin-homepage

this page shows the trainee in the system with a chart to compare between subscribe users and not subscribed



(a) (b)
Figure 149: admin-homepage-continue

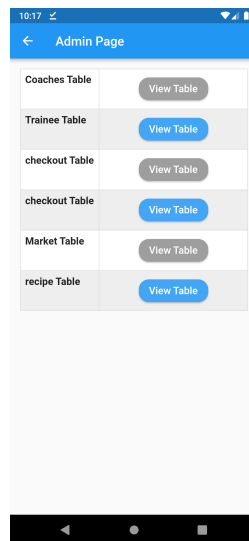
the drawer provides fast access to all the admin page parts



(a)

Figure 150: admin-drawer

DB table shows some tables from the database sorted in a regular way



(a)

Figure 151: DB-tables

10:17

←

Id	recipe_name
Contains	Contains
33	12
35	Lentil and Kielbasa Stev
36	title
37	Shrimp Linguine With ...
38	Chicken With Cheesy ...
39	Roasted Curry Salmon V
40	Grilled Pork Chops
41	Mole-Spiced Black Bean
42	Steak With Skillet Tomar
43	Slow-Cooker Squash ...
44	Spaghetti Squash Carbo
45	Keto Big Mac Salad

(a)

10:17

←

Id	recipe_name	recipe_desc	Protein
Contains	Contains	Contains	Contains
33	12	123	123
35	Lentil and Kielbasa Stev	Forget chicken and rice ...	490
36	title	description	500

(b)

10:17

←

Id	supple...	supplement_desc	Proi
Contains	Contains	Contains	Con
17	Dymatiz...	Dymatize, ISO100 ...	400
18	Xtend, ...	Xtend, Pro, Whey ...	500
19	Dymatiz...	4, Dymatize Nutrition ...	430
20	BSN Tru...	TRUE-MASS® 1200 l...	233
21	BSN Tru...	The global leader ...	400
22	PhD ...	Synergy is a lean, all-i...	400
25	Olimp ...	Olimp Sport Nutrition...	400
26	Dymatiz...	Dymatize, ALL9AMIN...	200
27	Country...	Country Life, Max...	300
28	Controll...	Controlled Labs, ...	400
29	Daily ...	21st Century, Daily ...	200
30	Thorne	Thorne, Amino ...	290

(c)

10:17

←

Id	supple...	supplement_desc	Proi
19	Contains	Contains	Con
19	Dymatiz...	4, Dymatize Nutrition ...	430

q w e r t y u i o p
a s d f g h j k l
z x c v b n m

(d)

10:18

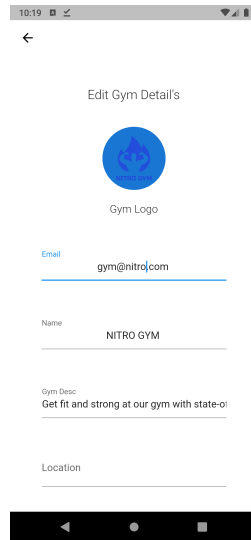
←

Id	supple...	supplement_desc...	Proi
Contains	Contains	global	Con
21	BSN Tru...	The global leader ...	400

(e)

Figure 152: DB-tables view

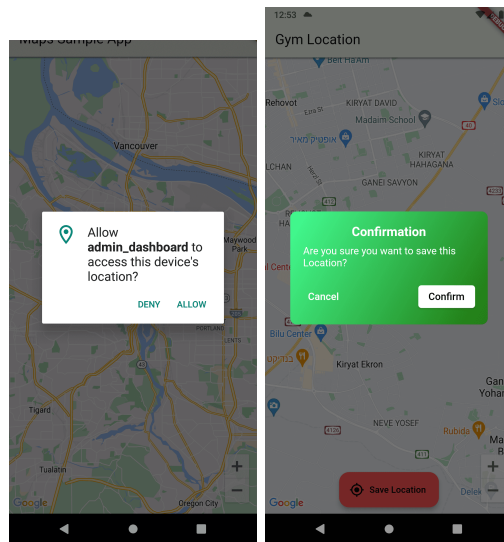
the settings page is used to set the basic information for the gym



(a)

Figure 153: admin setting-page

here admin can change the location of the gym if he need .

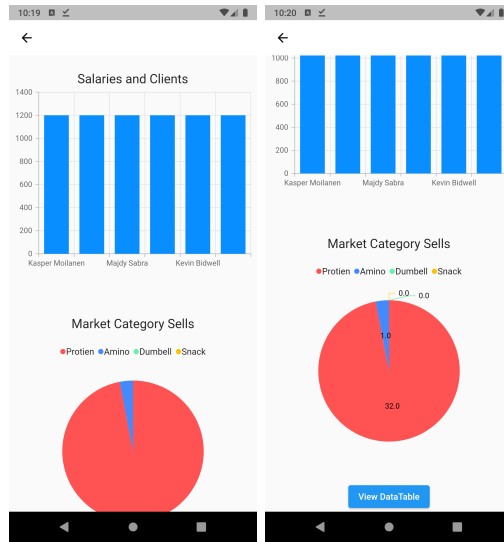


(a)

(b)

Figure 154: admin location-setting

statistics page shows a chart for salaries and market

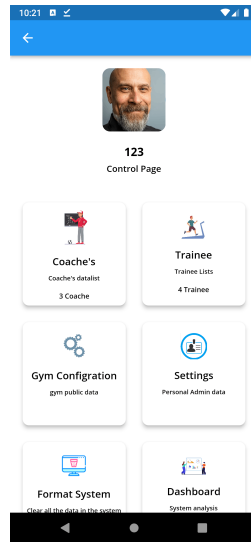


(a)

(b)

Figure 155: admin-statics

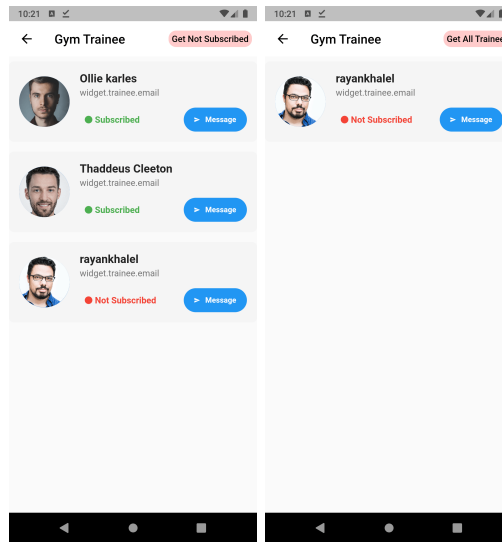
On this page, the admin can run and manage all gym data, with direct access to each feature.



(a)

Figure 156: admin-direct access

this page shows all the trainees in the system

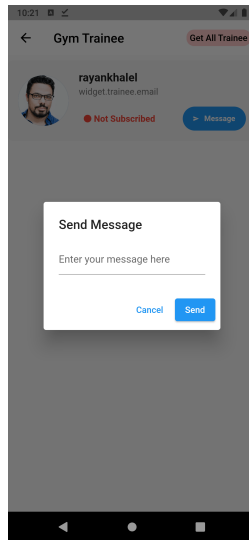


(a)

(b)

Figure 157: admin-viewtrainee

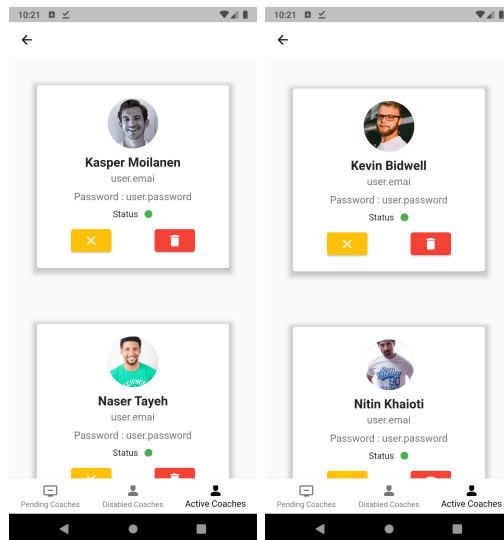
admin can send messages to each trainee



(a)

Figure 158: admin-sendmessage

all requests related to coaches go under this page

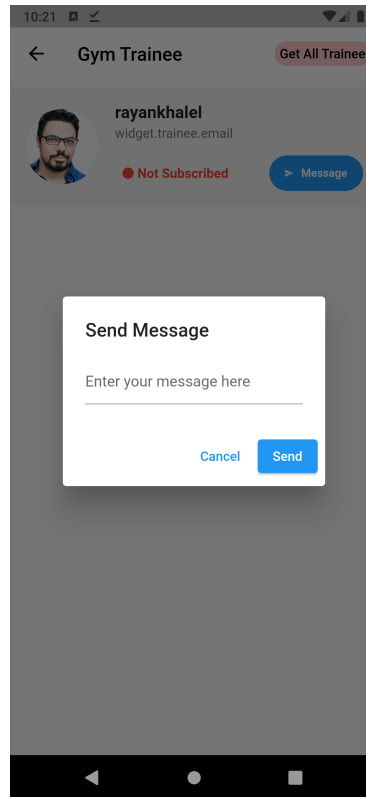


(a)

(b)

Figure 159: admin-view coach request

this page is for editing the data for the admin

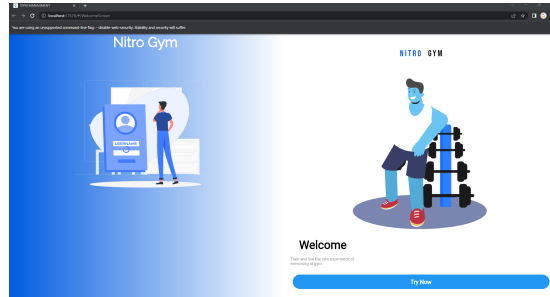


(a)

Figure 160: admin-editcoach requests

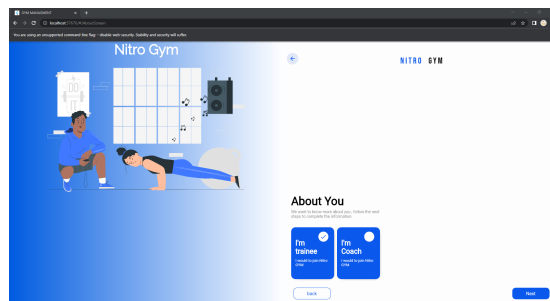
7.3.6 Website version

: Here we show the images of the web version of the application



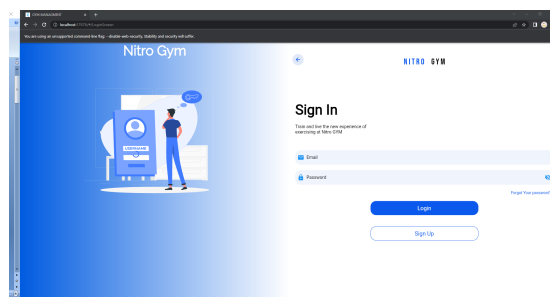
(a)

Figure 161: website version-group1



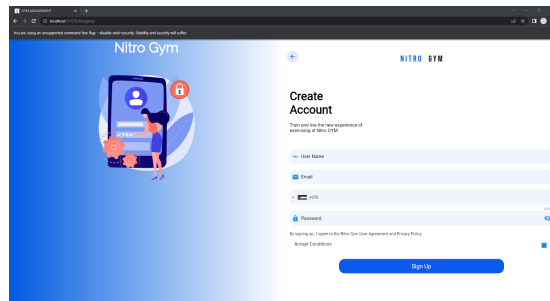
(a)

Figure 162: website version-group2



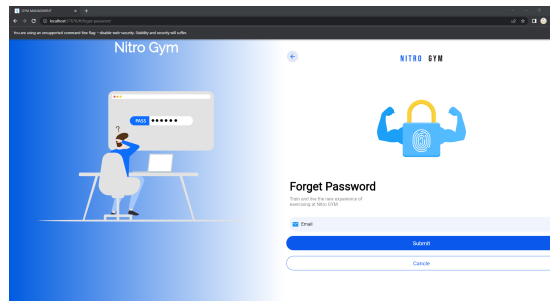
(a)

Figure 163: website version-group3



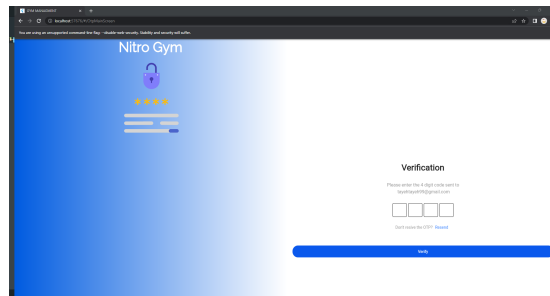
(a)

Figure 164: website version-group4



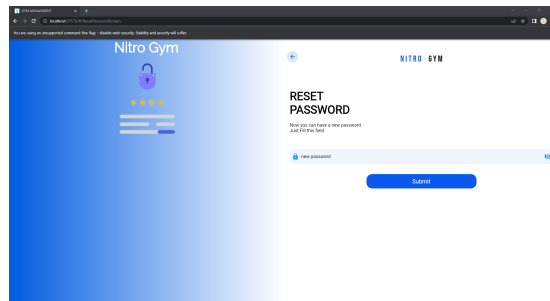
(a)

Figure 165: website version-group5



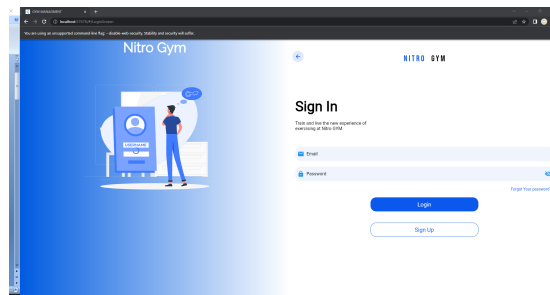
(a)

Figure 166: website version-group6



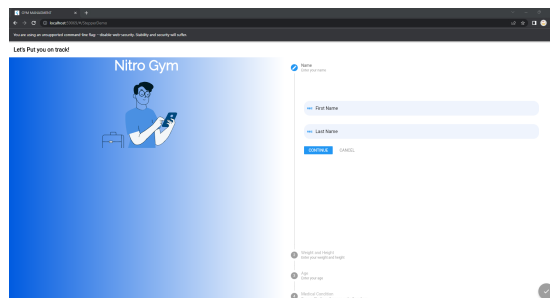
(a)

Figure 167: website version-group7



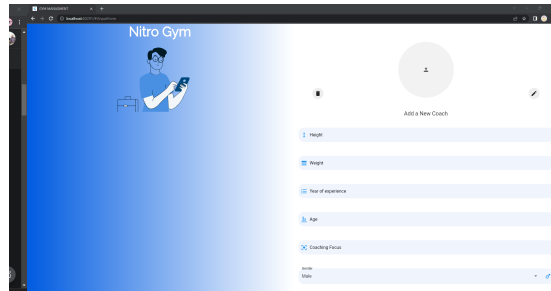
(a)

Figure 168: website version-group8



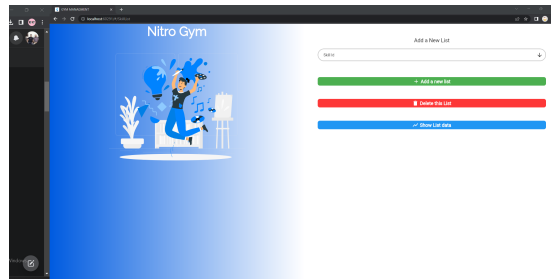
(a)

Figure 169: website version-group9



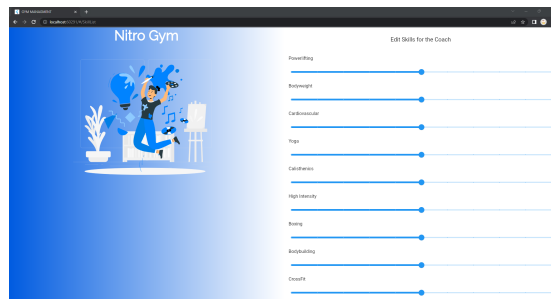
(a)

Figure 170: website version-group10



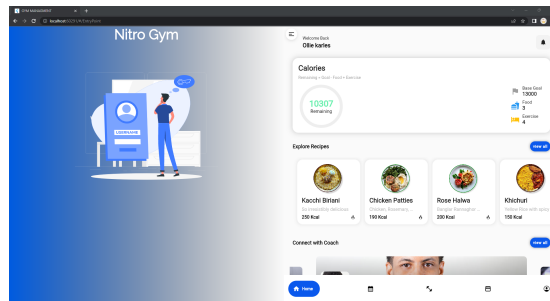
(a)

Figure 171: website version-group11



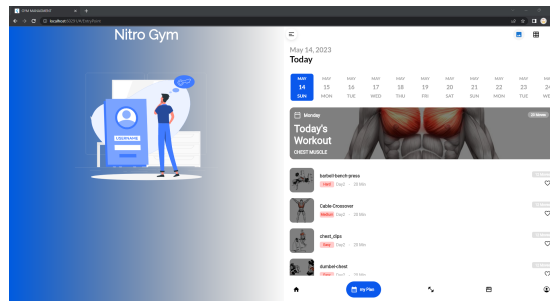
(a)

Figure 172: website version-group12



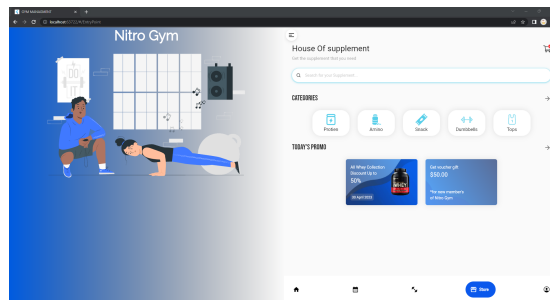
(a)

Figure 173: website version-group13



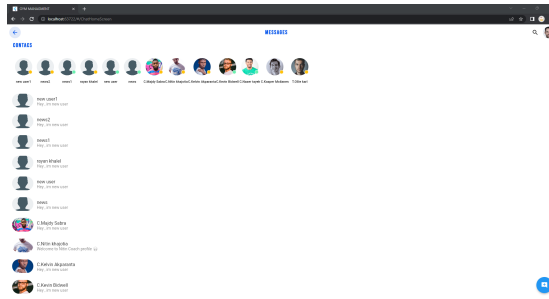
(a)

Figure 174: website version-group14



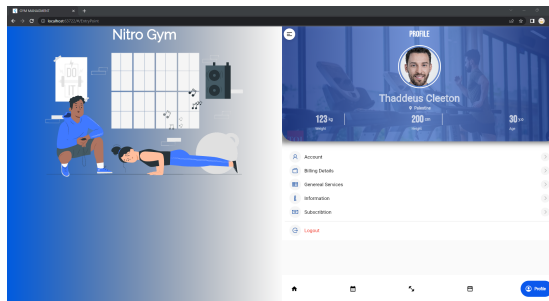
(a)

Figure 175: website version-group15



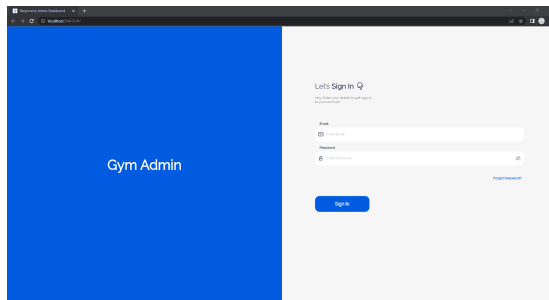
(a)

Figure 176: website version-group16



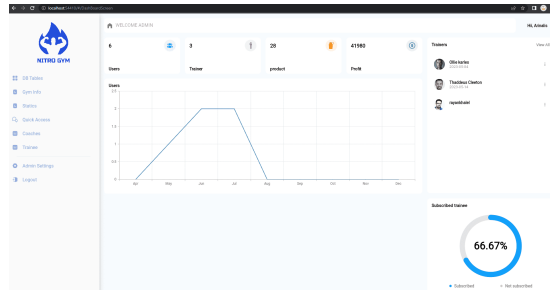
(a)

Figure 177: website version-group17



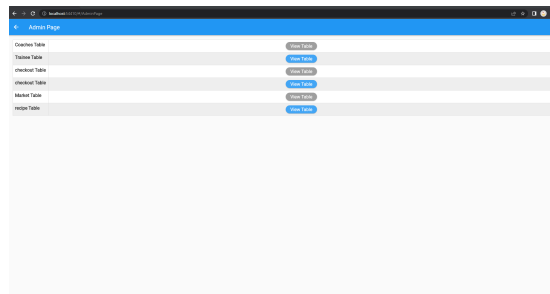
(a)

Figure 178: website version-group18



(a)

Figure 179: website version-group19



(a)

Figure 180: website version-group20

ID	URL Name	URL Slug	Parent	Contributors	Content
128	128	128	128		128
35	Lact and Gelatin Stew	lact-and-gelatin-stew	403	43	380
36	Yog	yog	328	43	384
37	Wheat Lequeur Pith	wheat-lequeur-pith	398	41	381
38	Chicken Yogh Cheese	chicken-yogh-cheese	403	40	370
39	Spiced Chicken Curry	spiced-chicken-curry	403	44	380
40	Yogh-Pork Chop	yogh-pork-chop	328	35	340
41	Milk Spiced Fresh Stew	milk-spiced-fresh-stew	328	103	380
42	Spicy Yogh Stew	spicy-yogh-stew	403	40	370
43	Spicy Yogh Stew	spicy-yogh-stew	398	40	380
44	Spicy Yogh Stew	spicy-yogh-stew	398	40	380
45	Spicy Yogh Stew	spicy-yogh-stew	398	40	380
46	Spicy Yogh Stew	spicy-yogh-stew	398	40	380
47	Lact and Gelatin Stew	lact-and-gelatin-stew	32	3	30
48	Red Stew	red-stew	34	7	34
49	Red Stew	red-stew	34	7	34
50	Red Stew	red-stew	34	7	34

(a)

Figure 181: website version-group21

ID	website_name	website_desc	Project	Category	Status
38	Clicker With Overlay	Assignment	400	90	200
39	Recursive Clicker with Async	The task is to build a form with many inputs...	27	10	100

(a)

Figure 182: website version-group22

ID	website_name	website_desc	Project	Category	Status
38	Clicker With Overlay	Assignment	400	90	200
39	Recursive Clicker with Async	The task is to build a form with many inputs...	27	10	100

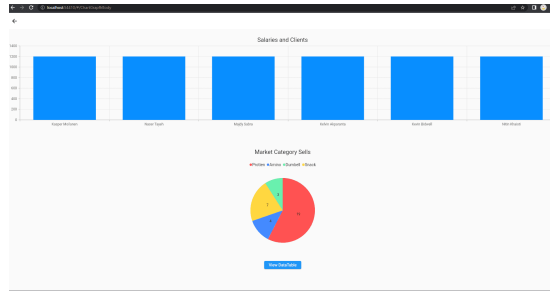
(a)

Figure 183: website version-group23

ID	website_name	website_desc	Project	Category	Status
38	Clicker With Overlay	Assignment	400	90	200
39	Recursive Clicker with Async	The task is to build a form with many inputs...	27	10	100

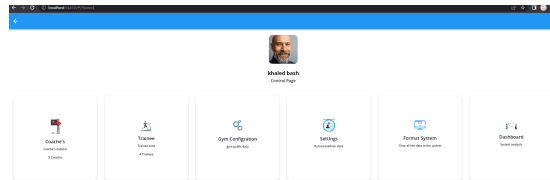
(a)

Figure 184: website version-group24



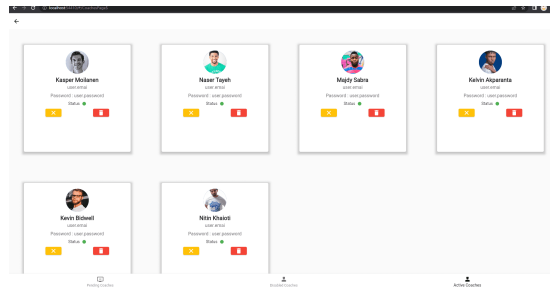
(a)

Figure 185: website version-group25



(a)

Figure 186: website version-group25



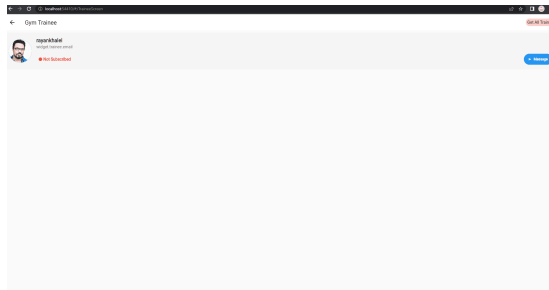
(a)

Figure 187: website version-group26



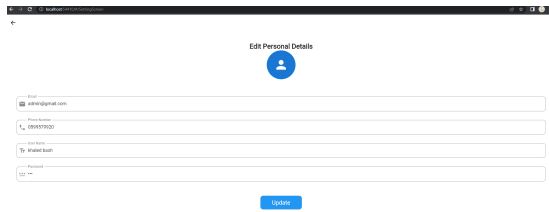
(a)

Figure 188: website version-group27



(a)

Figure 189: website version-group28



(a)

Figure 190: website version-group29

8 Result and Discussion:

Result:

Our gym graduation project aimed to provide a platform to cover all the required features for all types of trainees from mature trainees to professional trainees also the application gives the coach owner the capability of managing his gym by hiring new coaches in the gym and running all the profiles for the users.

Discussion:

It is important to note that our gym graduation project was designed to address the need for a comprehensive and user-friendly gym management system that caters to a diverse range of trainees. The application we developed provides a platform that covers all the required features for all types of trainees, from mature trainees to professional athletes. Our system allows users to easily create a profile, set fitness goals, and track their progress over time. The application provides coaches to give personalized workout plans based on the user's fitness level and goals and includes instructional videos and images to guide the user through each exercise. also includes a nutrition tracking feature that enables users to track their calorie intake and monitor their macro and micronutrient consumption. In addition to providing a comprehensive platform for trainees, our application also provides gym owners with the ability to manage their gyms more efficiently. The application enables gym owners to hire new coaches, manage user profiles, track equipment usage, and schedule classes and appointments. This makes it easier for gym owners to streamline their operations and provide a better experience for their clients. Overall, our gym graduation project provides a comprehensive and user-friendly solution for both trainees and gym owners. The platform is designed to be scalable and customized, allowing it to be adapted to the needs of any gym. With its comprehensive features and easy-to-use interface, our application has the potential to revolutionize the way gyms are managed and trainees track their fitness progress.

9 Conclusion and recommendations

9.1 Conclusion

In conclusion, our gym project successfully developed a comprehensive and user-friendly gym management system that caters to a diverse range of trainees, from mature trainees to professional athletes. The system provides personalized workout plans, nutrition tracking, and instructional videos to guide users through each exercise. In addition, the system allows gym owners to manage their gym more efficiently, by providing tools to hire new coaches, manage user profiles, and a direct connection to all the users in the system. With its comprehensive features and easy-to-use interface, our gym management system has the potential to revolutionize the way gyms are managed and trainees track their fitness progress.

9.2 Recommendations

Based on our project, we have several recommendations for future development and research. we recommend expanding the nutritional tracking feature to include more detailed information on macro and micronutrient intake, as well as integrating with popular nutrition tracking applications. also, we recommend further testing and development of the system's machine-learning capabilities, to provide more accurate and personalized workout plans for users. Finally, we recommend exploring potential partnerships with gyms and fitness centers to implement our system and gather feedback on its effectiveness in a real-world setting.

9.3 Future work

There are several areas of future work that could be pursued to further improve and expand upon the gym graduation project. Firstly, the gym management system could be enhanced by incorporating additional features such as biometric tracking, which would allow users to monitor their heart rate, blood pressure, and other vital signs during their workouts. This would provide users with real-time feedback on their performance and help them to optimize their workouts. Secondly, the machine learning capabilities of the system could be further developed to provide more accurate and personalized workout plans for users. This could be achieved by incorporating more data sources, such as wearable fitness devices, to gather additional information on user performance and progress.

Finally, the gym management system could be integrated with social media platforms to facilitate social interaction and collaboration among users. This would enable users to connect with each other, share workout routines, and provide mutual support and encouragement.

In summary, there are many exciting opportunities for future work to build upon the gym graduation project, and we believe that continued innovation and development in this area have the potential to revolutionize the fitness industry and help people achieve their fitness goals more effectively.

10 References

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