# FitFlame – Health and Fitness Coaching Application to Mitigate the Issues in the Current Applications

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## ABSTRACT

Online fitness coaches help people achieve a healthy lifestyle by offering customized solutions. The demand for professional coaching is expected to grow in the coming years. Nevertheless, no applications in the market address the problems in the coaching process. Today, coaches and clients had to use many third-party apps. The reason for this is that no single fitness coaching app offers communication and exercise-tracking features. Even though some apps meet some of these requirements, they are out of reach for most people's budgets. This paper aims to suggest a robust and full-fledged app to mitigate those issues. FitFlame is the name of the proposed app. Both coaches and clients can benefit from this app. Also, FitFlame is a fitness coaching system available on mobile and the web. It helps clients locate and contact coaches, subscribe to coaching plans, and track their progress. It does away with third-party programs and gives users a better experience.

*Keywords--* Fitness Coaching App, Health and Fitness Coaching App, Fitflame

## I. INTRODUCTION

Today's world has seen a surge in demand for online fitness coaches because these professionals are instrumental in helping people achieve a healthy lifestyle by offering them customized solutions. With this increasing focus on personal health and wellness, the demand for professional coaching is also expected to grow in the coming years. Therefore, a robust and straightforward way is needed to make the online fitness coaching process easier for both coaches and clients. There are still no applications in the market that address significant problems in the coaching process. Today, coaches and clients have been using many third-party applications through this coaching process.

That process is not very user-friendly. Online fitness coaches have used social media platforms like Facebook, Instagram, and TikTok to land new clients. Once a new client is landed, the coaches interact with the client using online communication platforms, and many other third-party applications. This method makes the whole process troublesome for the client and the coach. The reason for sticking into this troublesome process is that the straightforward systems beneficial for this kind of service are lacking.

Other than that, there are many other fitness coaching mobile applications in the market without coaches that provide only premade set of fitness plans which are not suited for everyone. These apps are very harmful because there are few training programs and no adequate guidelines. People risk sustaining injuries if they stick to those training programs.

To mitigate these cumbersome processes and challenges, the suggested FitFlame is a straightforward and fully fledge online fitness coaching system. According to Nielsen Newswire, smartphones were preferred by 61% of recent mobile phone owners in the United States[1]. By taking this into account Both web and mobile devices are compatible with FitFlame. The majority of users use smartphones in daily life. From getting a new client to a trainer and tracking their client's entire training process, FitFlame is one of the best apps. Clients can quickly locate the coaches, get in touch with them, and subscribe to a coaching plan. FitFlame gives users the best experience possible by doing away with all third-party programs.

## II. RELATED WORK

Both client education and resistance workout programming require the assistance of a personal trainer. 46 women who regularly performed resistance training participated in a study[2]. They divided the ladies into two groups for the study. One group—consisting of 19 people—participated with the influence and direction of a personal fitness coach, whereas the other group—consisting of 27

people—participated independently. The moderately trained women who performed directly supervised, intense resistance training saw higher training load escalation rates and magnitude rates than unsupervised training.

There are many online fitness apps available right now. However, they have some issues concerning the user experience. "Centr" is one of the online fitness coaching mobile apps. A researcher called Cameron Eackles from the University of Baltimore conducted user research for that app. He revealed that the participants in the Centr group shared the monthly cost was too expensive, especially given the inability to track calories/activity, and the inability to contact a coach for additional support or encouragement [3]. "MyFitnessPal" is also one of the most popular online fitness coaching apps, with 2 million users on Google Play and 1 million on Apple App Store[3]. But it also does not offer a human or automated coach [3].

Doing the exercises under professional guidance is always good for physical health. Online coaches and articles will be beneficial for obtaining proper exercise guidance from online fitness apps. For users of fitness apps, exercise coaching affordance offers a mastery goal structure [4]. Exercise guidance offers users guidance, such as alerts, reminders, exercise programs and schedules, or other means of instruction while exercising. This facilitates learning and improvement, as stressed by a mastery goal structure to help fitness app users develop and improve their physical abilities [4].

## III. METHODOLOGY

From the development side, FitFlame can be divided into three main sections such as frontend, backend, and database. Since JavaScript can be used in mobile and web development, JavaScript-based React and React Native technologies are used to develop web and mobile applications' front-end components. The app's backend and database are built using various Firebase services, including Firebase Firestore for databases, Fire Storage for file hosting, and Firebase Real-Time Database for chat servers.

Firebase and its services were chosen for the back-end deployment primarily due to their reliability and elastic (pay as you go), robust databases. Firebase is exceptionally secure and offers valuable services that replace many third-party integrations because it operates under the Google banner. For example, one of those services is firebase testing, which includes crashlytics (crash monitoring service) and firebase test lab.

Three prominent roles can be identified in this system such as admin, client, and fitness coach. Therefore, to define access roles for the APIs and extend the authorization capabilities, "Auth0" is used. "Auth0" is one of the best and most popular access management SaaS solutions available in the market. Firebase authentication

service is used to store the user credentials inside the app. Since firebase authentication uses a hashing mechanism to store user data, users should not be concerned about the security of their sensitive data.
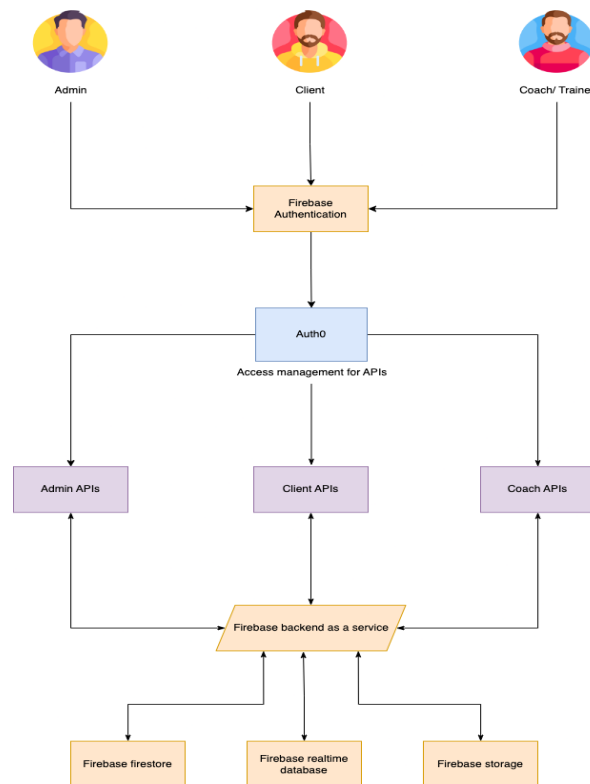


**Figure 1:** Low level system diagram

Keeping track of the states on the front-end side without a good state manager is challenging. Redux is implemented as the app's state manager to address that problem. It makes it possible to control the app's state from a single location and to keep changes to the app more controlled and traceable. Also, Redux enhances front-end performance by rendering all relevant data simultaneously.
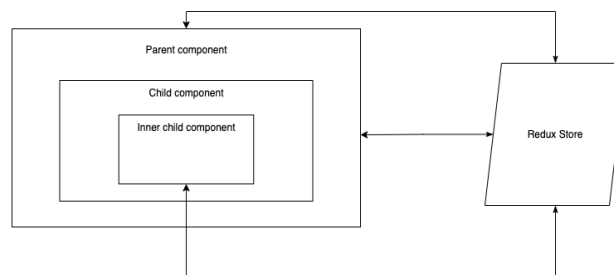


**Figure 2:** How redux state management functions when there are several components in the app's front end

## IV. PROPOSED SYSTEM

The suggested system is a fully-fledged online platform for online fitness coaching that is advantageous to both the client and the fitness coach. One significant benefit of this system is that all fitness coaches are accredited by the National Institute of Sports Science Association (NISSA). It ensures clients that they always pick a qualified coach. The system's functionality can be broken down into three primary categories based on user roles. That is administration management, customer management, and management of the fitness trainer. This section aims to provide a thorough description of each of the categories. Although the registration process varies depending on the user role, an email address and password are needed to log in to the system.
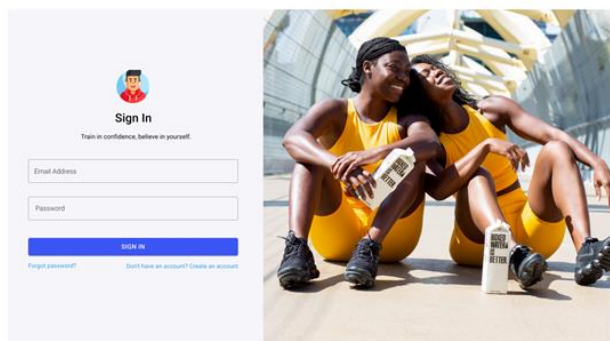


**Figure 3:** System login UI

### A. Administration Management

Management of trainers and clients falls under the purview of the administrative role. The administrator's primary responsibility is to review the trainer registrations and accept the legitimate trainers by verifying their NISSA ID.

Administrators can also ban users based on their unruly behavior within the app. Additionally, the admin can review and delete any unnecessary blog posts written by the trainers.

Administrators can produce separate reports for users and subscribers to trainers. Administrators can view each trainer's revenue and best-selling packages in the trainers' report. In order to use customer and trainer email addresses in marketing campaigns, the admin can also generate CSV-type files.

When trainers transfer their balance from the system to their bank accounts, the system receives a fee from each trainer. The admin is in charge of this system fee. The administrator has the right to change the fee and make offers.

The administrator can send push notifications to a specific user role or all users. Push notifications could contain offers, bug fixes, or system updates.

### B. Trainer Management

The registration process varies between clients and trainers. The registration form is filled out by both users, but a trainer has a second step. There, the trainer is required to enter a succinct bio along with NISSA ID and upload a profile photo. Trainer cannot access the app after registering with the system until admin has approved the registration request. Trainer will receive an email notification once the admin approves the request.

Trainers can create packages once they have successfully logged into the system. Clients will be able to see those packages and subscribe to them.
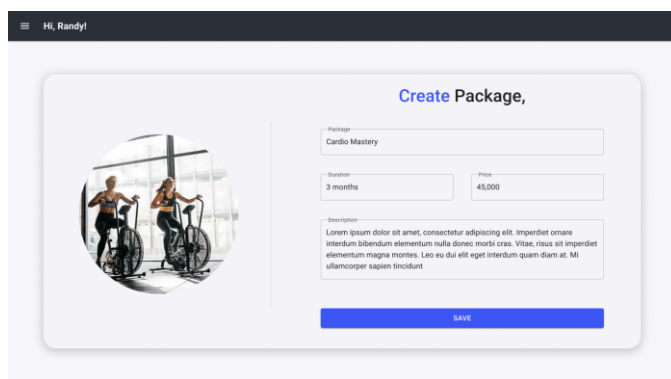


**Figure 4:** Trainer package creation UI

The trainer can decide whether to update or delete packages when created.

The trainer will receive a notification via email and the system when a client places an order for a package. A trainer may accept or reject the client's order after reviewing it.
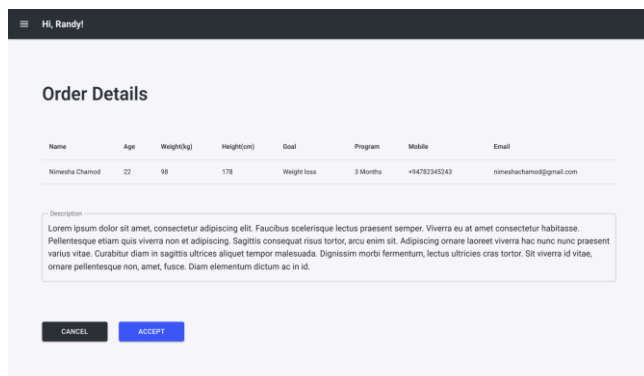


**Figure 5:** Order details UI

If the trainer rejects the order, the money will be returned to the client's account, and the trainer can give a reason for denying that.

The money will be added to the trainer's account in the system if the trainer accepts the order. The trainer should make a meal plan and a workout plan and can provide instructions through the system after accepting the

order. Then the customer will be regarded as a subscribed user for a package related to the trainer. Moreover, after that, live conversations between the client and the trainer can be started via the app.

Trainers occasionally encounter situations where clients repeatedly ask the same questions. Trainers can upload blog posts to answer those kinds of questions. Not only to respond to those kinds of inquiries but also to educate clients and motivate them to lead balanced, healthy lives.



**Figure 6:** Article publishing UI

FitFlame is one of the best apps for connecting a new client with a trainer and tracking their entire training program, as stated in the introduction.

Trainers frequently share their expertise on social media platforms, where their content helps them attract new clients. Good content is always the secret to attracting new customers. FitFlame allows trainers to share their blog posts directly to their social media accounts, along with a link to their profile and information about the packages they offer. This feature makes conversion-type ads on social media platforms like Facebook much more straightforward.

The system allows trainers to generate reports as well. By choosing a month range, trainers can obtain a revenue report. They can view the subscribers to their best-selling packages and subscriber information. This report is crucial for decision-making when marketing their packages.

### C. Client Management

Clients can search for coaches or read blogs about health and fitness after logging into the system. The trainer section will display all trainers, profile pictures, and about. The client can view all the trainer details and package information after choosing a specific trainer. After deciding on a package, the customer can place an order by providing information about themselves, including their current photo, weight, height, and goal.



**Figure 7:** Make order UI

The client will be notified via the system and email when a trainer accepts an order. The client will receive a personalized workout schedule, meal plan, and instructions that must be followed during the session. The FitFlame app's chat feature allows trainers and clients to communicate after an order has been accepted by a trainer, unlike other apps on the market.

Customers can track their workouts from their mobile app, which makes FitFlame stand out from other similar apps on the market. Clients can add meal and workout plans to the mobile app. and then add data. The client can use that to produce reports. Customers can monitor their calorie burn, exercise intensity, and weight gain/loss over time through the generated reports.

## V. DISCUSSION

The more costly apps in this study's sample were found to be more reliable or credible, more suitable for recommending to clients in a business setting, and more likely made with the intention of promoting health and preventing off disease [5]. For various online fitness apps, Cameron Eackles, a researcher from the University of Baltimore, carried out user research. He disclosed that the Centr app group members agreed that the monthly cost was too high [3]. However, FitFlame is not a paid app. FitFlame only charges fitness coaches if their packages are sold and when they transfer their balance to their bank accounts. That pricing structure is very fair. Cameron also claims that Centr group members cannot use the app to track their activity or calorie intake [3]. Also, My Meal Mate is a different weight-loss fitness app (MMM). A smartphone's improved computational capabilities enable the integration of detailed self-monitoring (of diet, exercise, and weight) and text message feedback into a single intervention. The MMM app runs on the Android platform [6]. However, in FitFlame, clients have the feature to monitor their calorie burning and weight gain/ loss, exercises, and diet easily. Additionally, FitFlame is platform independent, so it is compatible with both the iOS and Android operating

systems. The inability to speak with a coach for additional support or encouragement is another drawback of the Centr app [3]. Once clients have purchased a coaching package on FitFlame, they can communicate with the coaches. That is yet another benefit of the FitFlame app. Moreover, there are private health databases available in the market. FitFlame is designed to integrate with that kind of a database called Microsoft's HealthVault. Microsoft's HealthVault serves as a platform for personal health data, including information from fitness and personal health monitoring devices. This gives users control over their health information and gives them the option to securely share it with clinicians, family members, or other people as needed [7]. Despite those, 90% of the fitness coaches employed by online coaching apps are unqualified. However, FitFlame ensures that all the trainers listed in the app are qualified and NISSA-accredited.

## VI.    CONCLUSION

This paper aimed to demonstrate the value of a full-featured online fitness coaching app that encourages users to adopt healthier lifestyles. Most fitness coaching apps on the market suffer from widespread user issues like pricey paid programs, a lack of high-quality content, the inability to track calories, and communication difficulties with coaches. FitFlame, a system that has been proposed, is one of the best ways to address those issues with the current apps. In this system, the three primary roles are administrator, trainer, and client. Administrators make sure that all of the registered trainers are NISSA-accredited. Therefore, the system ensures that clients always receive assistance from qualified coaches. With the help of this system, clients can monitor their weight gain or loss, height, and calorie burning. Both clients and trainers can communicate with each other via chat. Besides taking personal coaching, clients can read blog posts written by the coaches free of charge. Clients do not have to pay for the system, but only if they subscribe to a coaching package offered by a trainer.

Upon the success of the app, The app will incorporate artificial intelligence components to track and monitor user exercises and provide feedback.

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