Fitness Application- A Mood-Aware Fitness Web Application

Tenzin Chokyi
21BTRCS085
Dept of CSE
Jain University, Bangalore, Karnataka
tchokyi2931@gmail.com

Tenzin Sherab
21BTRCS086
Dept of CSE
Jain University, Bangalore, Karnataka
tsherab2003@gmail.com

Tenzin Chodak
21BTRCS217
Dept of CSE
Jain University, Bangalore, Karnataka
tenzinchoedakk@gmail.com

Tenzin Tsamphel
21BTRCS087
Dept of CSE
Jain University, Bangalore, Karnataka
tentsam30@gmail.com

Prof. Agashani V Kumar
Professor
Dept of CSE
Jain University, Bangalore, Karnataka

Abstract

This paper presents how FitMind was developed by developers, a web-based fitness application for its users that offers mood-based workout suggestions. As opposed to fitness apps that provide just generic workout plans, FitMind adapts to the user's own emotional state, and it suggests fitness routines personalized for their mood on a daily basis. The app seeks to combine fitness along with mental well-being when designers consider emotional factors for creating workout plans. This paper outlines the development process, with the technical architecture and user experience. The paper does also discuss some challenges faced and future directions that improve the app. Emotional intelligence may be used to create a fitness experience that is more personalized.

1. Introduction

Fitness web applications have transformed the way people approach physical exercise because they make it easier for users to track progress, set goals, also receive personalized recommendations. These apps help users stay on track with fitness, although most fail to account for emotional well-being's role in willingness to engage in activity.

Fitness apps that are customary will solve exercise through a one-size-fits-all, without addressing the user's state of mind or state of emotion. However, research can show that emotional states are able to affect someone greatly. Kwan and Bryan (2016) found emotional states as influences upon a person's willingness to exercise. FitMind wants to give users personalized workout recommendations matching their mood.

The idea behind *FitMind* is simple yet effective each day users are asked how they are feeling along with, based on their responses, the app suggests an appropriate workout. This combination of fitness with emotional intelligence is new, especially in an app that is for students. *FitMind* stands apart from existing fitness applications since it fuses those qualities.

1.1 Problem Statement

Fitness apps generally focus solely on the physical aspects of health since they track calories burned, set exercise goals, and measure performance over time. Yet users' emotional and mental state is often disregarded. Based upon a study from Huang et al. (2021), mood plays a meaningful role because of the fact that it influences a person's likelihood for engagement in physical activity. For example, people stressed, tired, or anxious are less likely to engage in vigorous physical activity. On another hand, positive moods can often motivate some people. They will become much more motivated for doing intense exercises.

A lot of fitness applications are without emotional intelligence. This disconnects users' current emotional states with the physical activities encouraged. FitMind addresses this gap because its tailors' fitness recommendations to the user's mood, so the experience is more personalized and emotionally supportive.

2. Related Work

While there are now several fitness apps that are available today, the integrating of mood with physical exercise in such a meaningful way is a focus for only a few. Fitbit and Nike Training Club, existing fitness apps, track physical performance and provide basic exercise recommendations, yet they do not consider the user's emotional state when offering workout plans.

2.1 Mood Tracking Applications

Daylio and Moodpath are apps that monitor emotional states over time, letting users record moods and think about trends. However, these very apps were designed mainly in order to track mental health. They do not integrate any recommendations that are for physical activity. FitMind builds on this idea through connecting the user's mood to workout options. This creates a bridge among mental plus physical well-being.

2.2 Fitness Apps with Mental Health Features

Certain fitness apps now integrate features for mental health such as mindfulness exercises or breathing routines. However, these features typically differ from core workout suggestions, and they are not based upon mood inputs in real-time. Headspace and Calm focus on relaxation and

mindfulness, but they do not make suggestions for fitness routines. FitMind combines physical activity in conjunction with mental health by offering a unified platform that addresses both aspects.

3. Methodology

The FitMind app uses a simple yet effective rule-based algorithm to suggest workouts based on the user's mood. Several stages were involved in the development process: user research, app design, technical implementation, along with testing. Each component is explored in detail just below.

User Mood Input

From mood categories, users select how they feel using a list. Of FitMind the daily mood input is the central feature. These moods are:

Happy: The user feels energized and positive.
Tired: The user feels fatigued and in need of rest.
Stressed: The user is experiencing anxiety or stress.
Energetic: The user is feeling physically energized and ready for a more intense workout.

Workout Suggestion

Based on the selected mood, the app suggests a corresponding workout:

Happy: HIIT (High-Intensity Interval Training) full-body workout for 30 minutes.
Tired: 15-minute gentle yoga and stretching.
Stressed: Light cardio followed by 20 minutes of breathing exercises.
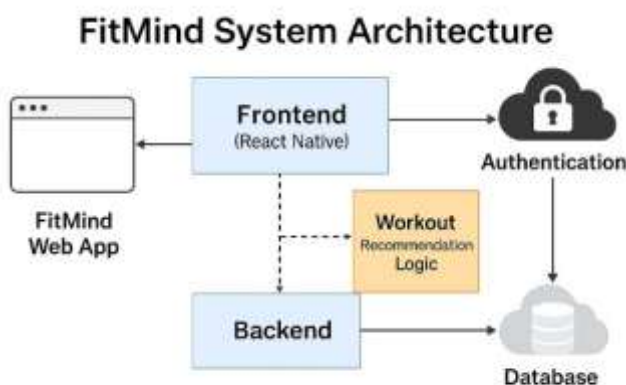**Energetic**: 45-minute strength and endurance session.

3.1 System Architecture
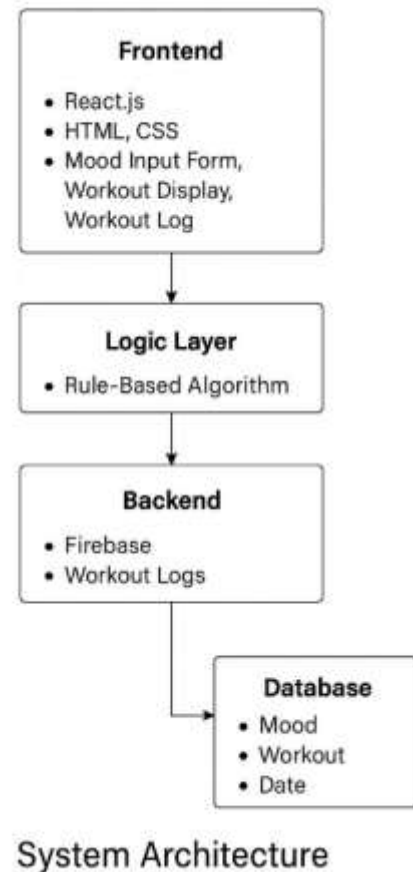

Figure 1 FitMind System Architecture

Figure 2 Detailed FitMind System Architecture

3.1.1 Modules Overview

Module Name	Description
Mood Selection	User selects their current mood
Workout Generator	Suggests workout based on mood using rules
Workout Log	Stores workout history with date and mood
History view	Displays all logged workouts

3.1.2 Tools and Technologies

Frontend: React.js

Language: JavaScript (ES6)

Styling: Inline CSS / TailwindCSS

State Management: React useState Hook

Deployment: Web Browser

4. Algorithm Used

4.1 Rule-Based Algorithm

The heart of the app's logic lies within React.js in implementing of a simple rule-based algorithm. Matching to a predefined workout suggestion follows from checking of the user's selected mood by the app. Each day, the user's mood will find the recommendations fast and easily adaptable due to this approach.

Technical Implementation

The app is built using React.js a popular JavaScript library for user interfaces. It creates the basis of the app's design. A component-based design guides the app. On account of this type of architecture, the app can have more reusable components as well as easier updates. React's useState together with useEffect hooks handle the app's primary features via managing application state as well as lifecycle.
The front-end for the app uses HTML and CSS to structure and style the user interface. Buttons combine with grid layouts to make mood selection intuitive. Following mood selection, the workout displays including a "Done" button to log it after completion.

Backend

The app makes use of Firebase for purposes of storing user data plus workout logs and also mood entries. Firebase is known as a cloud-based backend solution for developers. Firebase offers real-time synchronization as a key feature. User data gets updated across devices instantly. This backend service also helps to authenticate users as it ensures data persists between app sessions.

4.2 Rule-Based Mapping

FitMind uses a simple rule-based algorithm, which is easy to implement and understand.

```
const moodWorkouts = {
  Happy: "HIIT full-body workout for 30 mins",
```

```
  Tired: "15-minute gentle yoga and stretching",
  Stressed: "Light cardio and breathing exercises",
  Energetic: "Strength and endurance training for 45 mins"
};
```

4.3 Why Rule-Based?

- Simple to implement
- Transparent decision-making
- Easy to scale and update
- Suitable for small input sets like moods

5. Results and Discussion

5.1 User Testing And Feedback

Initial testing of FitMind revealed users liked the app's simple design and its custom fitness method. They had the ability to tailor workouts for their emotional state. This ability motivated as well as supported them. Users reported feeling more inclined to complete their workouts at times when recommendations aligned with their current mood.

5.2 Effectiveness of Mood-Based Suggestions

Mood-based suggestions effectively guided users toward more suitable workouts. For example, those users that were feeling tired did appreciate the gentle yoga routines. These routines allowed them to stretch also relax without overexerting for themselves. Conversely, strength and endurance sessions seemed more interesting to active users since the sessions offered a challenge desired by them.

5.3 Challenges

Despite positive feedback, there were a few challenges at a time when the process was developing. One challenge involved ensuring consistent mood input from users. That input also was required to be reliable. Users also wanted mood categories such as "anxious" or "motivated" for more refined suggestions. These mood categories could be incorporated into future versions. The mood categories could improve upon the app.

Another challenge was optimizing the app's real-time data handling. Firebase was an efficient backend service yet a few users reported slight delays getting workout logs post session. Optimizing data retrieval as well as ensuring that only necessary data gets loaded during each session addressed this.

6. Applications and Future Scope

6.1 Current Applications

Use Case	How FitMind Helps
Daily home fitness planning	Suggests easy, mood-appropriate workouts
Beginners overwhelmed by tough plans	Offers gentle and mentally considerate suggestions
People managing stress & anxiety	Recommends de-stressing activities like yoga or walks based on emotional state
Students or professionals with busy schedules	Let's them squeeze in effective short workouts tailored to their current mindset
Mental health support via physical activity	Bridges the gap between fitness tracking and emotional well-being

6.2 Future Work

While the FitMind app performs well as a mood-based fitness assistant, several improvements can enhance its usability and impact.
AI Mood Detection: Integrate user mood detection from text or voice input using NLP sentiment analysis for smoother interaction.

The current rule-based system will be replaced by a dynamic recommendation engine. It adapts according to user history and fitness goals.

Data Visualization: Show mood trends and workout consistency using simple charts with a calendar view.
Remind as well as Motivate: Include some personalized quotes also prompt notifications for improved engagement.

For Cross-Platform Expansion, develop a version for mobile that is using React Native. The web app could instead become a Progressive Web App (PWA) allowing wider access.
These improvements will make FitMind more smart, accessible, and effective as a long-term wellness and fitness companion.

7. Conclusion

The FitMind web app offers mood-based workout suggestions through integrating a unique as well as revolutionary approach for fitness. FitMind adapts its workout plans according to the user's emotional state, which makes it more personalized and supportive, unlike customary fitness apps that offer static recommendations. User feedback early on indicates the app is practical plus motivational because users appreciate that emotional well-being and physical activity connect. Sentiment analysis along with wearable integration are going to be future developments. These advances should increase how the app works so users wanting total fitness with sound mind may see its worth.

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