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Fitfury Streak

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ABSTRACT

In the digital age, maintaining a consistent fitness routine remains a major hurdle, especially for Gen Z, who seek motivation, engagement, and community support. ***FitFury Streak*** *is a Web application designed to promote daily fitness habits through an interactive and automated* ***streak-tracking system****. The app enables users to log their workouts, monitor progress, and receive real-time streak notifications, encouraging commitment and consistency in their fitness journey.*

Built using ***React Native*** *for the frontend and* ***PostgreSQL*** *for backend functionalities like authentication, real-time database (PostgreSQL), and cloud functions, FitFury ensures a seamless and responsive user experience on Android devices. It eliminates manual tracking by automatically updating streaks, issuing reminders, and awarding virtual milestones.*

Social interaction features such as ***leaderboards****,* ***friend comparisons****, and* ***achievement celebrations*** *foster a sense of community, motivating users through healthy competition and shared goals. Tools like* ***Node.js****, and* ***Github*** *support the development and deployment of this robust fitness platform. FitFury redefines fitness engagement by merging habit-forming psychology with technology to create a consistent, gamified, and rewarding experience for users aiming to lead healthier lives.*

1. INTRODUCTION

The rise of digital health apps has reshaped how individuals approach personal fitness. FitFury Streak is a Web application tailored to inspire users through structured goal-setting and interactive tracking features. It simplifies the process of building workout habits by offering a visually engaging and intuitive platform. Users can engage with fitness routines while staying informed through dynamic updates and social features. The web app aims to bridge the gap between intention and action in the realm of personal wellness.

Existing System

Traditional fitness tracking methods rely on mobile fitness apps, manual workout logs, or static gym memberships. Many apps lack interactive features, social engagement, and real-time streak tracking. Some fitness apps require paid subscriptions, limiting accessibility. Additionally, conventional fitness tracking systems do not provide streak-based motivation, reducing long-term adherence. The absence of a feature like streaks makes these platforms less engaging, and users often lose interest or fail to maintain a consistent fitness routine.

Proposed System

The proposed system “FitFury Streak” leverages modern Web development and cloud-based backend services to deliver a seamless and engaging fitness experience. It aims to automate streak tracking and promote consistent workout habits among users, especially Gen Z, by using interactive features and real-time updates. The system architecture integrates React Native for mobile development and Firebase services for data handling, authentication, and cloud functions.

2. REQUIREMENTS ANALYSIS

Functional Requirements

• The system should allow users to securely sign up and log in through the web application using PostgreSQL Authentication.
• It must support real-time workout logging and automatic streak tracking based on user activity.
• The system should generate personalized notifications and alerts related to missed workouts, streak milestones, and goal progress.
• Users should be able to add friends, view their workout streaks, and compare performance via a leaderboard.
• A dashboard should be available within the app to display current streak status, milestones achieved, and workout history.
• Users should be able to view and celebrate achievements, badges, and rewards earned for consistency and milestones.

Non-Functional Requirements

1. Usability: The web app must offer an intuitive and engaging interface for a smooth user experience.

2. Performance: The system should respond quickly, with minimal lag during navigation and check-ins.

3. Real-Time Data Sync: All user actions and streak updates must reflect instantly across devices using Firebase.

4. Security: User data, including login credentials and workout history, must be securely stored and transmitted.

5. Scalability: The backend must support an increasing number of users without performance degradation.

6. Maintainability: The codebase and architecture should allow for easy updates, debugging, and feature additions.

Hardware Resources

• **Processor**: Quad-core, 1.8 GHz or higher – for smooth performance during development and testing.
• **RAM**: 4 GB or higher – to efficiently run Android Studio, emulators, and development tools.
• **Storage**: 500 GB SSD – for faster read/write operations and storage of project files, dependencies, and datasets.

Software Resources

• **Operating System**: Windows 10/11 or Ubuntu 20.04 LTS for development environment.
• **Programming Languages**: JavaScript (for React Native), Python (optional for backend scripting or analytics).
• **Frameworks/Libraries**: React Native for frontend development; PostgreSQL SDKs for backend services like PostgreSQL, Authentication, and Cloud Functions.
• **Database**: Firebase PostgreSQLfor real-time cloud database and user data storage.
• **Development Tools**: Node.js for package management and optional backend utilities.
• **Cloud Services**: PostgreSQL for backend infrastructure, authentication, real-time database, and notifications.

3. DESIGN

SOFTWARE ARCHITECTURE

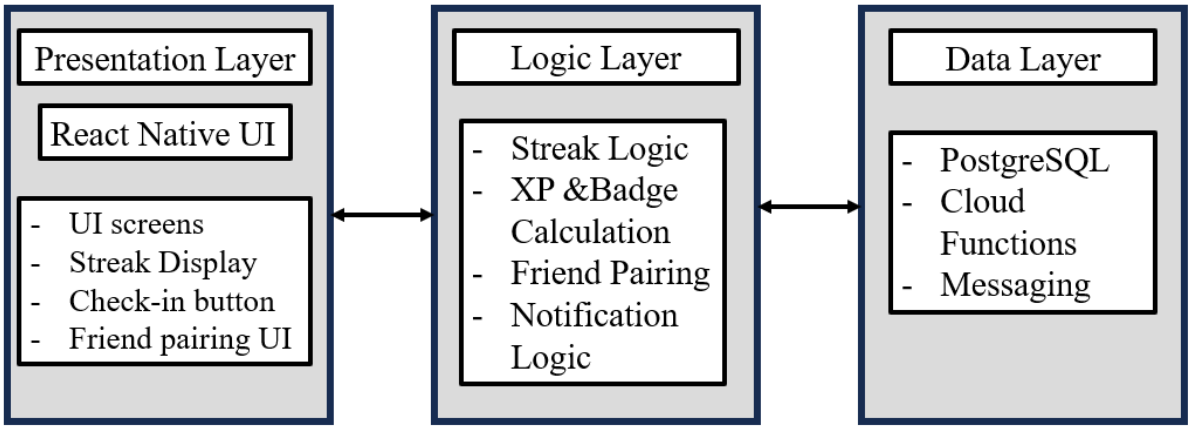


Fig: Software Architecture

TECHNICAL ARCHITECTURE

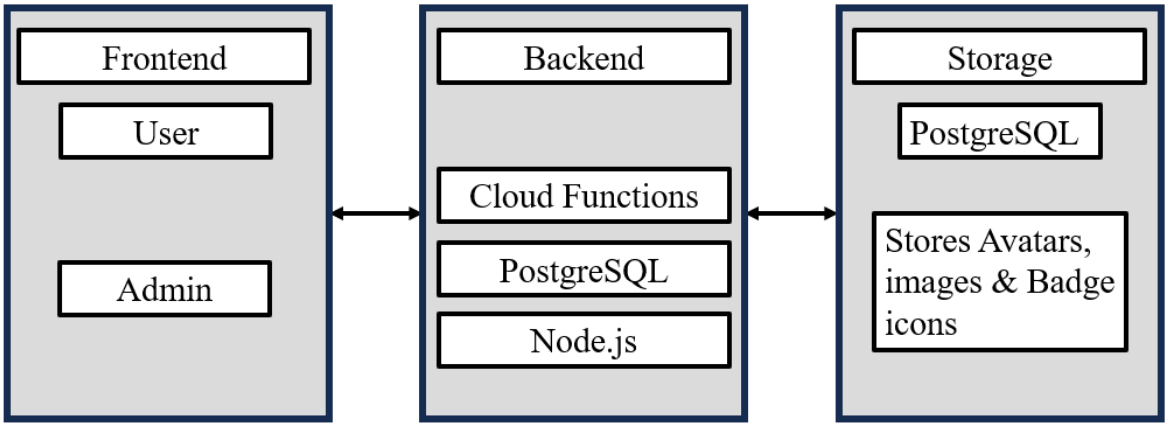


Fig: Technical Architecture

4. IMPLEMENTATION

The proposed system is designed to motivate users to stay consistent with their workouts by implementing a streak-based tracking system integrated with social features and real-time notifications. It allows users to log workouts, track progress, and maintain a healthy routine through gamified elements and community engagement.

The system is implemented in several stages:

1. **User Interface**: The Web application provides a seamless and responsive user interface built with React Native. It includes secure user authentication, signup/login pages, and intuitive navigation to workout categories, streak history, and leaderboards.
2. **Workout Logging**: Users can log daily workouts by selecting predefined workout categories or entering custom entries. Each workout entry updates the streak count and user activity logs in real-time.

3. **Streak Management Module**: The streak manager component automatically calculates active streaks based on consecutive workout logs. If a user misses a day, the streak resets. Visual indicators like streak flames or progress bars are used to keep users motivated.
4. **Leaderboard and Social Engagement**: A centralized leaderboard compares user streaks and workout consistency. Users can follow friends, compare progress, and engage in friendly competition to boost motivation.
5. **Notification System**: The system generates real-time push notifications and reminders to alert users when they are at risk of losing a streak or achieving a milestone. Firebase Cloud Messaging is used for efficient notification delivery.
6. **Database and Analytics**: All workout logs, streaks, and leaderboard data are stored in Firebase Firestore. Backend cloud functions manage validation, analytics, and ensure streak integrity. Users can view detailed stats and history on their dashboard.

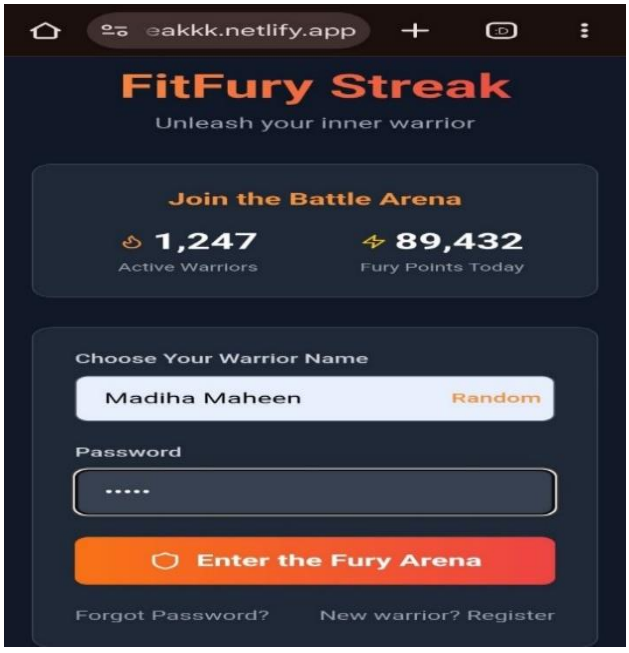
4.1 TECHNOLOGIES

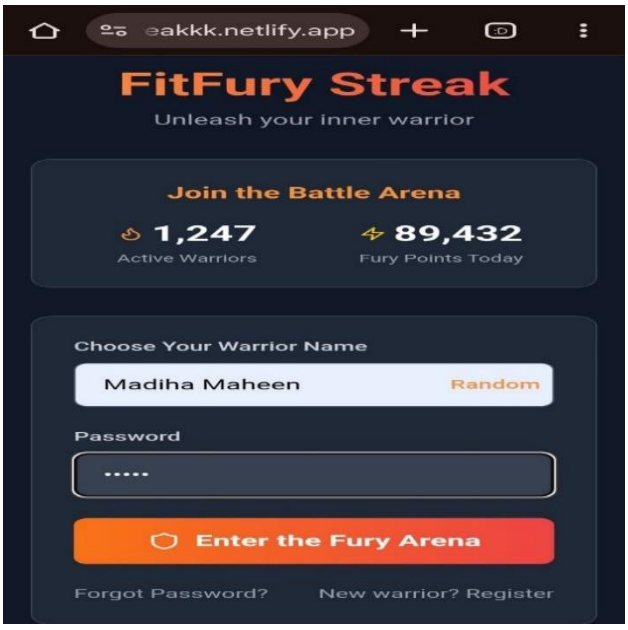
The following technologies were used in the implementation of the system:

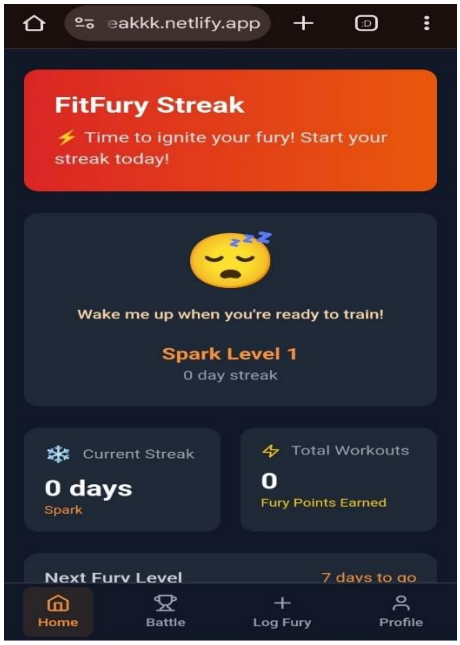
- **Operating System**:
  Windows – The system is designed as a web application.
- **Frontend**:
  React Native – Used to build a responsive, cross-platform user interface for mobile devices.
- **Backend**:
  PostgreSQL Authentication – Handles secure user login and authentication.
  PostgreSQL Cloud Functions – Executes server-side logic such as streak validation and leaderboard updates.
- **Tools & Frameworks**:
  Node.js – For local development and deployment of PostgreSQL functions.
  Python
- **Notification Services**:
  Firebase Cloud Messaging – For sending real-time push notifications and workout reminders to users.

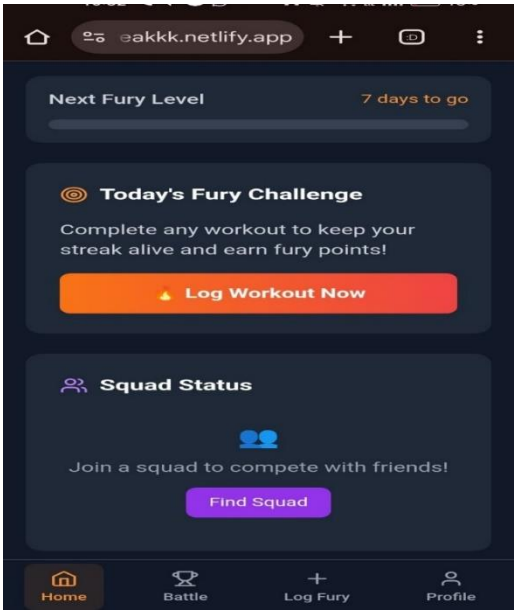
5. SCREENSHOTS

LOGIN/REGISTER PAGE:

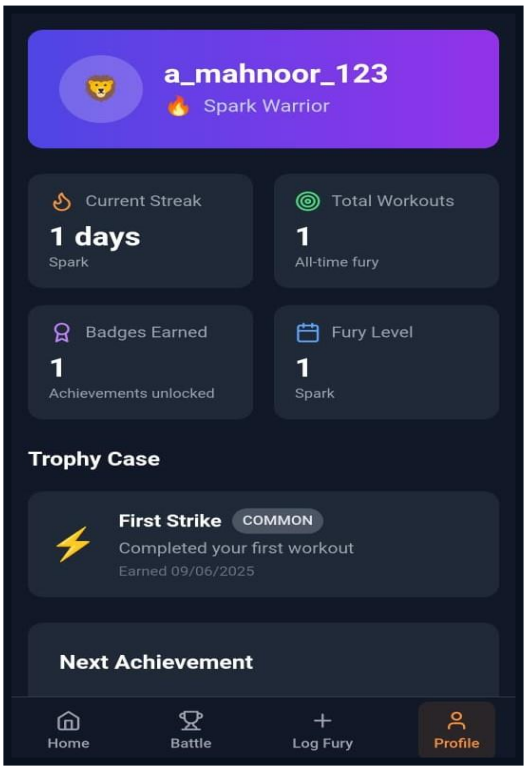


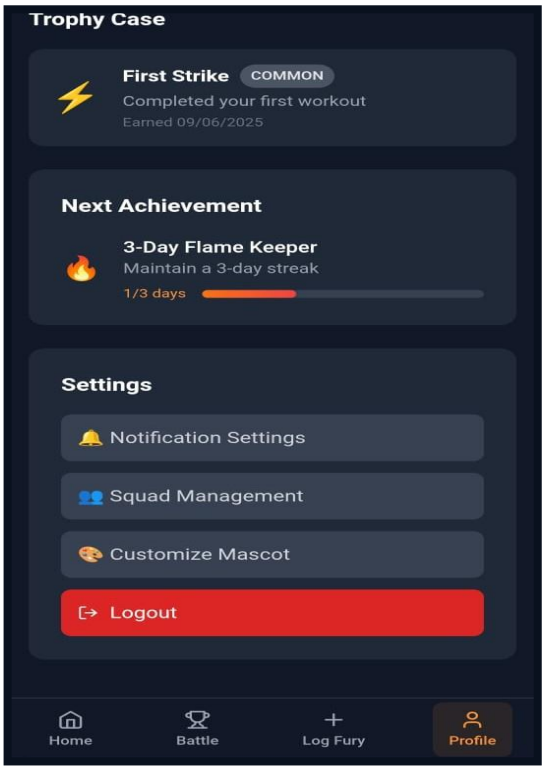




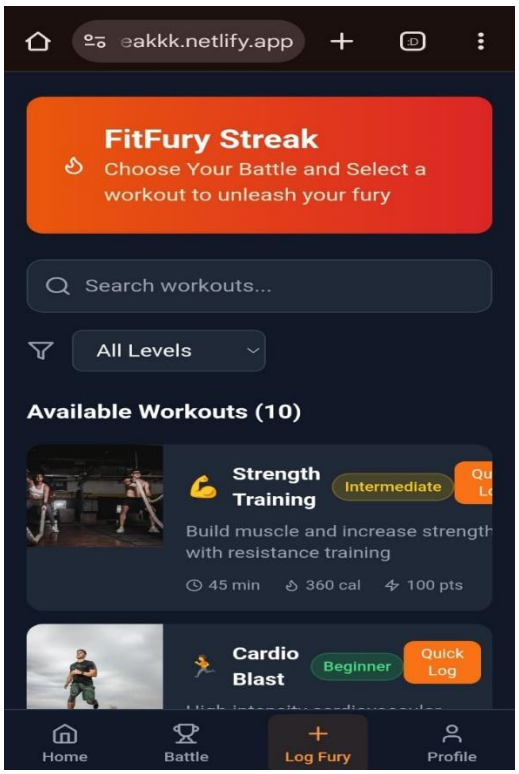


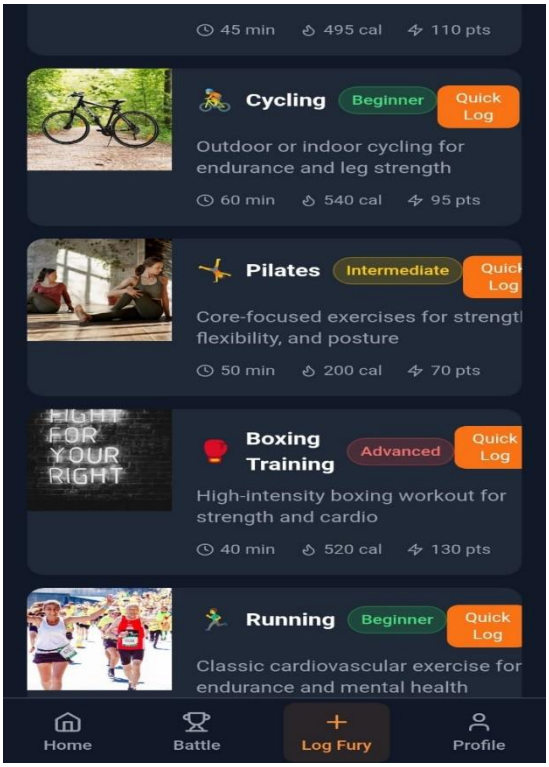
PROFILE PAGE:

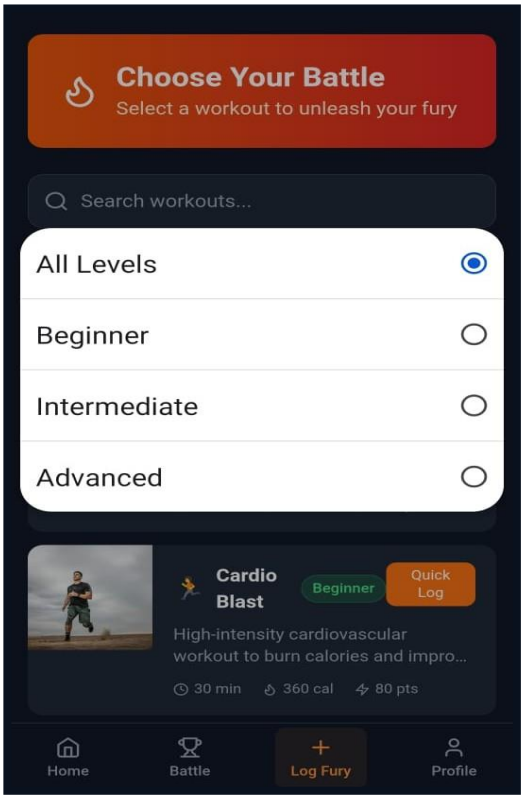


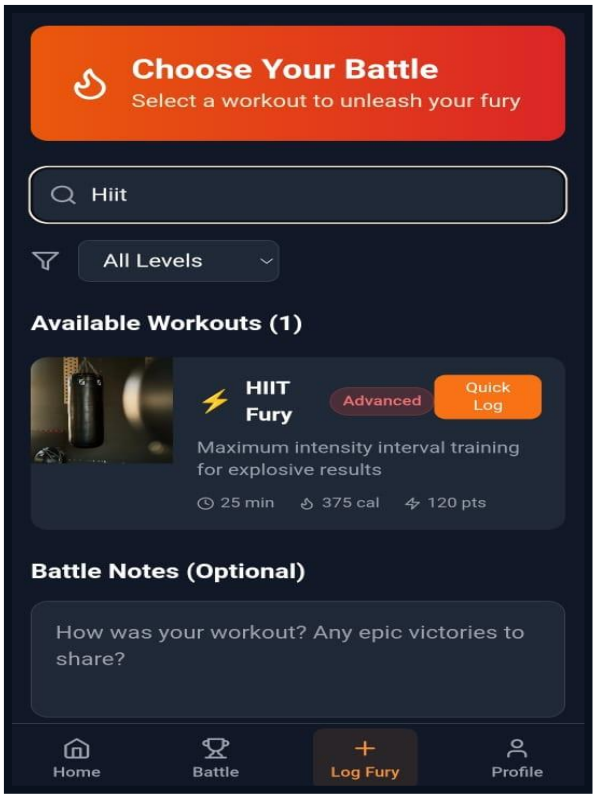


WORKOUT PAGES:

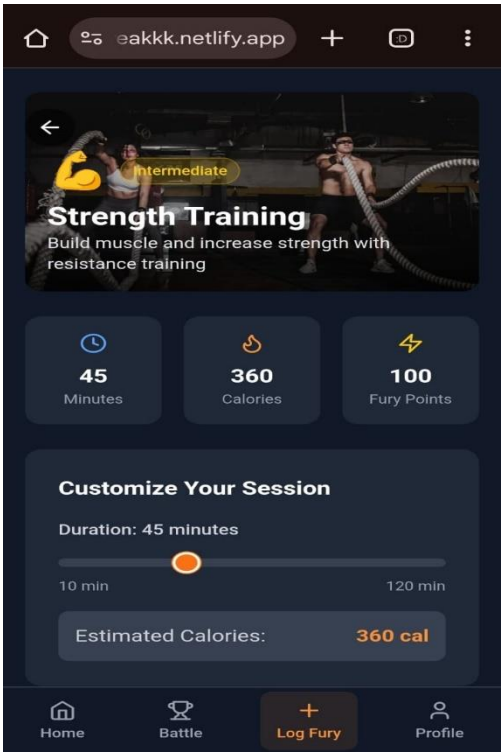


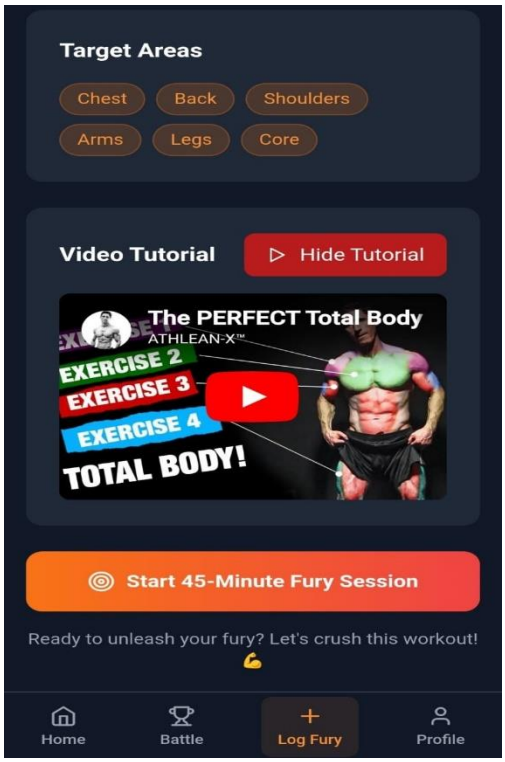


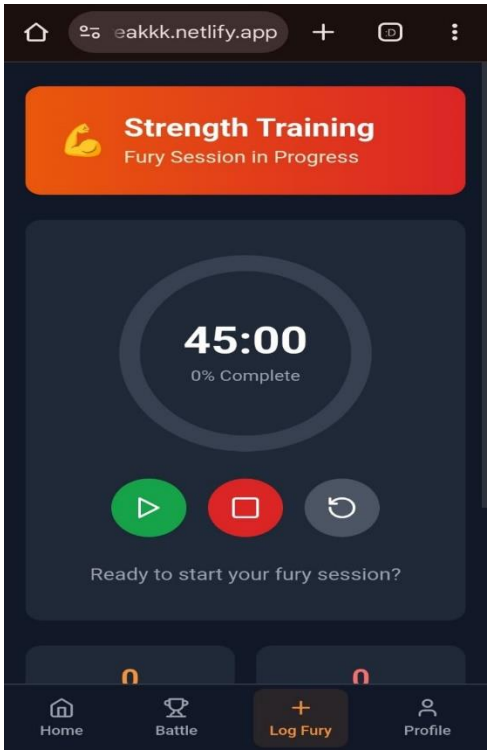





Duration: 45 minutes
10 min
120 min
Estimated Calories: 360 cal
How to Crush This Workout
1 Warm up for 5-10 minutes with light cardio
2 Focus on compound movements (squats, deadlifts, bench press)
3 Use proper form over heavy weight
4 Rest 60-90 seconds between sets
5 Cool down with stretching
Equipment Needed
Dumbbells
Barbell
Bench
Resistance Bands
Home
Battle
Log Fury
Profile


eakkk.netlify.app
Intermediate
Strength Training
Build muscle and increase strength with resistance training
45
Minutes
360
Calories
100
Fury Points
Customize Your Session
Duration: 45 minutes
10 min
120 min
Estimated Calories: 360 cal
Home
Battle
Log Fury
Profile


Target Areas
Chest
Back
Shoulders
Arms
Legs
Core
Video Tutorial
Hide Tutorial
The PERFECT Total Body
ATHLEAN-X™
EXERCISE 2
EXERCISE 3
EXERCISE 4
TOTAL BODY!
Start 45-Minute Fury Session
Ready to unleash your fury? Let's crush this workout!
Home
Battle
Log Fury
Profile


eakkk.netlify.app
Strength Training
Fury Session in Progress
45:00
0% Complete
Ready to start your fury session?
Home
Battle
Log Fury
Profile

6. CONCLUSION & FUTURE SCOPE

Conclusion

In conclusion, the development of the FitFury Streak Web mobile application offers an innovative and user-centric solution to promote consistent fitness habits, especially among Gen Z users. By integrating streak-based motivation techniques with real-time progress tracking, the platform successfully addresses common challenges in fitness commitment and accountability.

The implementation leverages PostgreSQL backend services and React Native for a smooth, scalable mobile experience, allowing users to log workouts, maintain streaks, receive real-time notifications, and interact through a dynamic leaderboard system. The use of cloud functions ensures secure, event-driven handling of streak validations and user progress updates.

By incorporating gamification elements such as milestone badges and community comparisons, the app fosters a competitive and engaging environment that motivates users to maintain their fitness journeys. Furthermore, the modular architecture of the system supports easy integration of additional features like AI-based workout suggestions or personalized goal tracking in future iterations.

Overall, FitFury Streak combines effective design, scalable technology, and behavioral psychology to create a practical and motivating tool for long-term fitness engagement.

Future Scope

The current system efficiently tracks user workouts, maintains daily streaks, and offers a motivating environment through leaderboards and real-time analytics. As fitness technology and user behaviour trends evolve, several advancements can be incorporated to enhance the application:

1. **AI-Based Workout Recommendations**: Integrating AI models to analyze user preferences, history, and fitness levels to suggest personalized workouts and routines.
2. **Gamified Challenges and Social Engagement**: Introducing group fitness challenges, friend-versus-friend streak competitions, and social sharing features to increase user motivation and community involvement.
3. **Integration with Wearables**: Connecting the app with smartwatches and fitness bands to automatically track steps, heart rate, calories burned, and sync with the streak system.
4. **Posture Correction Using Machine Learning**: Implementing computer vision and ML algorithms to analyse workout posture in real-time via the camera and provide corrective feedback to prevent injuries and ensure proper form.
5. **Voice and Gesture Recognition**: Implementing voice-controlled navigation and camera-based gesture recognition for touchless interaction and improved accessibility.
6. **Nutrition and Wellness Module**: Expanding the web app to include meal tracking, hydration reminders, and sleep pattern monitoring for a holistic fitness experience.
7. **Multilingual and Inclusive Interface**: Supporting multiple languages and adaptive UI features to make the app more accessible to diverse users, including those with disabilities.
8. **AI-Based Streak Health Analysis**: Introducing smart streak analysis that not only counts days but evaluates the intensity and variety of workouts to provide health-based feedback.
9. **Data-Driven Insights for Coaches**: Creating admin tools for fitness coaches to monitor user performance, suggest improvements, and manage groups via a dedicated dashboard.