

Project Documentation

Introduction

Project Title: FitFlex (Fitness Tracker)

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Project Overview

Purpose

FitFlex is a web application designed to serve as a companion for fitness tracking devices. It provides users with real-time fitness data, workout progress, and health insights. The platform helps users monitor their activity levels, set fitness goals, and gain insights into their physical well-being.

Features

- Real-time activity tracking (steps, calories burned, heart rate, etc.)
- Personalized workout recommendations
- Goal setting and progress tracking
- Integration with popular fitness wearables
- Diet and nutrition insights
- Community and challenges for motivation
- Interactive data visualization for progress analysis
- Responsive design for accessibility on all devices

Architecture

Component Structure

FitFlex/

| — public/

- | |— favicon.ico
- | |— index.html
- | |— logo192.png
- | |— logo512.png
- | |— manifest.json
- | |— robots.txt
- |
- |— src/
 - | |— assets/
 - | | |— about-img.png
 - | | |— bg_img.png
 - | | |— bg_vid.mp4
 - | |
 - | |— components/
 - | | |— About.jsx
 - | | |— Footer.jsx
 - | | |— Hero.jsx
 - | | |— HomeSearch.jsx
 - | | |— Navbar.jsx
 - | |
 - | |— pages/
 - | | |— BodyPartsCategory.jsx
 - | | |— EquipmentCategory.jsx
 - | | |— Exercise.jsx

```
| | | └── Home.jsx
| |
| | └── styles/
| | | └── About.css
| | | └── Categories.css
| | | └── Exercise.css
| | | └── Footer.css
| | | └── Hero.css
| | | └── Home.css
| | | └── HomeSearch.css
| | | └── Navbar.css
| |
| | └── App.css
| | └── App.js
| | └── App.test.js
| | └── index.css
| | └── index.js
| | └── logo.svg
| | └── reportWebVitals.js
| | └── setupTests.js
|
| └── .gitignore
| └── README.md
| └── package-lock.json
```

| — package.json

State Management

FitFlex utilizes Redux Toolkit for efficient state management, with slices for:

- User Fitness Data
- Workout Logs
- Health Insights
- Community Challenges

Routing

React Router is employed to handle navigation between different pages, ensuring a seamless user experience.

Setup Instructions

Prerequisites

- Node.js (version 14.x or higher)
- npm package manager

Installation

1. Clone the repository:
2. git clone <https://github.com/Kabilajayan19/fitness-app.git>
3. Navigate to the project directory:
4. cd FitFlex_NaanMudhalvan
5. Install dependencies:
6. npm install

Folder Structure

Client

- **src/**
- **assets/** → Stores static media files like images and videos.
- **components/** → Contains reusable UI components such as the Navbar, Footer, and Search.
- **pages/** → Represents different views or pages of the application.
- **styles/** → CSS files for styling various components.
- **App.js** → Main entry point for the React app.
- **index.js** → Renders the application into the DOM.

Running the Application

To start the application locally:

```
npm start
```

This will launch the application at `http://localhost:3000`.

Component Documentation

Key Components

- **Navbar:** Renders navigation links.
- **Dashboard:** Displays key fitness metrics.
- **Workout Tracker:** Allows users to log workouts.
- **Health Insights:** Provides analysis of health trends.
- **Community:** Engages users with challenges and discussions.
- **Charts:** Visualizes progress over time.

Reusable Components

- **Fitness Card:** Displays workout or health-related data.
- **Button:** Custom-styled button for various actions
- **Search Bar:** Enables searching for fitness activities or challenges.

State Management

Global State

Used for data that needs to be shared across multiple components:

- **User Profile:** Stores user data like name, age, weight, and fitness goals.
- **Workout Plans:** Centralized storage for personalized fitness routines.
- **Exercise Library:** Maintains a list of available exercises categorized by type.
- **Progress Tracking:** Stores workout history and performance analytics.

Local State

Used for UI-specific states within individual components.

- **Search Input:** Stores user input in the exercise search bar
- **Form Data:** Handles temporary inputs in registration or goal-setting forms
- **Modal Visibility:** Manages the opening and closing of pop-ups (e.g., work out details).

- **Theme Selection:** Toggles between light and dark mode for UI customization.

User Interface

Screenshots or GIFs showcasing different UI features, such as pages, forms, or interactions.

Styling

CSS Frameworks/Libraries

- The application uses **Ant Design** for consistent and responsive UI components.

Theming

- Custom theming is applied using Ant Design's theming capabilities to align with the application's branding.

Testing

Testing Strategy

- The project employs **Jest** and **React Testing Library** for unit and integration testing of components and Redux slices.

Code Coverage

- Code coverage is monitored using Jest's built-in coverage tools, aiming for comprehensive test coverage across all modules.

Screenshots or Demo

Live Demo

https://drive.google.com/file/d/1HVsxNk9blprCmG9HzUgsZj7miRbfwA9I/view?usp=drive_link

Screenshot

https://drive.google.com/drive/folders/1KnzwZwoB-Hhn0jkrI_U6YvFppbbTEwta

Known Issues

- Integration with some fitness trackers may be limited.
- API rate limits for third-party fitness data sources
- Performance issues with large datasets of activity logs.

Future Enhancements

- Dark mode toggle feature.
- AI-based workout recommendations.
- Real-time WebSocket updates for fitness stats.
- User authentication for personalized goal tracking.