

NAAN MUDHALVAN PROJECT

UNIVERSITY OF MADRAS



COLLEGE NAME: AGURCHAND MANMULL JAIN COLLEGE

COLLEGE CODE : 1301

SUBJECT: FRONTEND DEVELOPMENT WITH REACT.JS

TOPIC: FIT FLEX

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Project Documentation

Introduction

Project Title: FitFlex (Fitness Tracker)

Team Members:

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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
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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)
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- npm package manager
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Installation

1. Clone the repository:
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2. git clone: [REDACTED]
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.
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- **components/** → Contains reusable UI components such as the Navbar, Footer, and Search.
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- **pages/** → Represents different views or pages of the application.
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- **styles/** → CSS files for styling various components.
-
- **App.js** → Main entry point for the React app.
-
- **index.js** → Renders the application into the DOM.
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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.
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- **Dashboard:** Displays key fitness metrics.
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- **Workout Tracker:** Allows users to log workouts.
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- **Health Insights:** Provides analysis of health trends.
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- **Community:** Engages users with challenges and discussions.
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- **Charts:** Visualizes progress over time.
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Reusable Components

- **Fitness Card:** Displays workout or health-related data.
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- **Button:** Custom-styled button for various actions
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- **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.
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- **Workout Plans:** Centralized storage for personalized fitness routines.
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- **Exercise Library:** Maintains a list of available exercises categorized by type.
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- **Progress Tracking:** Stores workout history and performance analytics.
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Local State

Used for UI-specific states within individual components.

- **Search Input:** Stores user input in the exercise search bar

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- **Form Data:** Handles temporary inputs in registration or goal-setting forms
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- **Modal Visibility:** Manages the opening and closing of pop-ups (e.g., work out details).
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- **Theme Selection:** Toggles between light and dark mode for UI customization.
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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.
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Theming

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

Testing Strategy

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

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

Live Demo

<https://drive.google.com/file/d/1BeHtHJ7IhPoJGtvI0llqcZRvn9rcIw9E/view?usp=drivesdk>

Known Issues

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

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