Frontend Development with React.js

Project Documentation for FitFlex App

1. Introduction

- **Project Title** : **FitFlex : Your Personal Fitness Companion**

Team Members :

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2. Project Overview

- **Purpose :**

FitFlex is an innovative fitness app designed to enhance workout experiences by providing a user-friendly interface, dynamic search options, and a rich library of exercises catering to all fitness levels. The goal is to make fitness accessible, engaging, and community-driven.

- **Features :**
  - Exercises from Fitness API – Access to a wide range of workouts.
  - Visual Exercise Exploration – View workouts through images and videos.
  - Intuitive User Interface – Seamless navigation and clean design.
  - Advanced Search Feature – Find exercises based on preferences.

3. Architecture:

- **Component Structure**

  The React components are structured into:

  - Pages – Different screens/pages of the app.
  - Components – Reusable UI components.
  - Styles – CSS files for styling

State Management :

- Global State – Managed using React Context API.
- Local State – Controlled within individual components.

Routing

- React Router DOM is used for navigation between pages.
- Defined routes for home, category, exercise details, and search.

4. Setup Instructions

➢ Prerequisites

1. Node.js (Download from (https://nodejs.org/en/download/))
2. Git (Download from (https://git-scm.com/downloads))
3. Code Editor

   Visual Studio Code: Download from https://code.visualstudio.com/download

   Sublime Text: Download from https://www.sublimetext.com/download

   WebStorm: Download from https://www.jetbrains.com/webstorm/download

➢ Installation

1. Clone the repository

2. Navigate into the project directory: cd fitness-app-react

3. Install dependencies: npm install

4. Start the development server: npm start

5. Folder Structure

/src – Main source folder

/components – Reusable UI elements (Navbar, Search, etc.)

/pages – Different screens (Home, ExerciseDetails, etc.)

/styles – CSS files for consistent styling

/utils – Helper functions and API calls

6. Running the Application

To start the frontend server locally, run: npm start

Access the app at http://localhost:3000.

7. Component Documentation

Key Components

- Navbar – Navigation bar with search functionality.
- ExerciseCard – Displays exercise details.
- SearchBar – Allows users to search for exercises.

Reusable Components

- Button – Custom buttons used throughout the app.
- Modal – Popup windows for additional information.

8. State Management

Global State

Managed using React Context API.

Stores user preferences and workout plans.

Local State

Managed using use State within components.

Handles UI interactions like toggling modals and forms.

9. User Interface

- Clean and modern UI with Tailwind CSS.

- Responsive design for mobile and desktop.
- Features intuitive navigation and interactive elements.

10. Styling

- CSS Framework: Tailwind CSS for styling.
- Custom Themes: Dark/light mode support (if implemented).

11. Testing

Testing Strategy

- Unit Testing: Using Jest and React Testing Library.
- Integration Testing: Ensuring API calls return expected results.
- End-to-End Testing: Checking full user flows.

Code Coverage

Jest reports provide test coverage statistics.

12. Demo :

Demo link: View Demo
https://drive.google.com/file/d/1lXcYYkCapX9GmMJoNorr8SF1GBaNTi6S/view?usp=sharing

13. Known Issues :

API rate limits may restrict exercise fetching.

Some exercises may not have images or descriptions.

14. Future Enhancements

Add AI-powered personalized workout suggestions.

Integrate progress tracking and fitness analytics.

Include social features for community engagement.