**Frontend Development with React.js**

**Project Documentation**

**1. Introduction**

* **Project Title**: FitFlex
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**2. Project Overview**

* **Purpose**:  
  FitFlex is a fitness app designed to enhance workout experiences through an intuitive interface, dynamic search, and a comprehensive exercise library. It aims to provide an engaging platform for users to explore fitness routines, track progress, and stay motivated.
* **Features**:
* Access to a wide variety of exercises from a fitness API
* Visual exercise exploration with images and videos
* Advanced search functionality
* Intuitive and user-friendly UI

**3. Architecture**

* **Component Structure**:
* The app is structured into **Pages, Components, and Styles** folders.
* Pages handle different views like home, categories, and exercise details.
* Components contain reusable UI elements such as Navbar, Search, and Exercise Cards.
* **State Management**:
* The application uses **React Hooks** for local state management.
* API responses are stored using useState and managed with useEffect.
* **Routing**:
* Implemented with react-router-dom to navigate between pages.

**4. Setup Instructions**

* **Prerequisites**:
* Node.js
* npm or yarn
* Git
* **Installation**:

1. Clone the repository:
2. git clone <repo\_url>
3. Navigate into the directory:
4. cd fitness-app-react
5. Install dependencies:
6. npm install
7. Start the development server:
8. npm start

**5. Folder Structure**

* **Client Folder**:
* /components: Contains reusable UI components like Navbar, Search, Exercise Cards.
* /pages: Contains major pages such as Home, Category, Exercise Details.
* /styles: Holds CSS or styling frameworks like TailwindCSS or Bootstrap.
* **Utilities**:
* Custom hooks for API handling.
* Helper functions for filtering and processing API data.

**6. Running the Application**

* **To start the frontend server**:
* npm start
* Open [http://localhost:3000](http://localhost:3000/) in the browser.

**7. Component Documentation**

* **Key Components**:
* **Navbar**: Navigation bar for switching between different sections.
* **SearchBar**: Allows users to search for exercises.
* **ExerciseCard**: Displays exercise details with images and descriptions.
* **Reusable Components**:
* **Button**: Styled button for consistency across UI.
* **Loader**: Loading spinner for API calls.

**8. State Management**

* **Global State**:
* Not using a dedicated state management library, relying on React Hooks instead.
* **Local State**:
* useState for managing API data and search inputs.
* useEffect for fetching data from the API.

**9. User Interface**







**10. Styling**

* **CSS Frameworks/Libraries**:
* Bootstrap or Tailwind CSS for styling components.
* **Theming**:
* Custom theming with consistent colors and typography.

**11. Testing**

* **Testing Strategy**:
* Unit tests for individual components using Jest.
* Integration tests with React Testing Library.
* **Code Coverage**:
* Ensured by writing tests for key UI elements and API calls.

**12. Screenshots or Demo**

* **Live Demo Link**: <https://drive.google.com/file/d/1DUQrhj1H88WSivaZl2KQDYYW93IiE6ZE/view?usp=sharing>

**13. Known Issues**

* API rate limits can affect data retrieval.
* Some exercises may not have complete details or images.

**14. Future Enhancements**

* **User authentication** for personalized workout tracking.
* **Workout planner** to create custom exercise routines.
* **Dark mode** for better user experience.