**Frontend Development with React.js**

**Project Documentation**

**1. Introduction**

**Project Title: FIT FLEX : your personal Fitness companion**

**Team Members:**

**Kannan.R – Team Lead, Frontend & UI Design**

**Barath.R – Component Development & State Management**

**Bhuvaneshwaran.S – API Integration & Routing**

**Kaviyarasan.P – Testing & Documentation**

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**2. Project Overview**

**Purpose:**

**The purpose of this project is to create a your personal fitness that helps users explore, save, and body health conditions . It simplifies the exercise providing easy-to-follow steps, personalized FITNESS recommendations, and exercise -based search.**

**Features:**

**Browse fitness by category (leg, chest, abs, shoulder, etc.).**

**Search exercise using our body health**

**Save favorite workout for later.**

**Step-by-step workout instructions.**

**Responsive UI for mobile and desktop.**

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**3. Architecture**

**Component Structure:**

**App.js – Root component managing routes.**

**Navbar.js – Navigation bar for exercise categories.**

**Workout List.js – Displays list of exercise.**

**Workout Details.js – Shows detailed exercise with steps.**

**SearchBar.js – Allows exercise-based search.**

**Favorites.js – Displays saved exercise.**

**State Management:**

**Context API for global state (favorites, search results).**

**Local state with useState for component-specific data.**

**Routing:**

**react-router-dom used for navigation.**

**Routes: / (Home), /exercise/:id, /favorites, /search.**

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**4. Setup Instructions**

**Prerequisites:**

**Node.js (v16 or later)**

**npm or yarn package manager**

**Installation:**

**git clone https://github.com/kannan2007cs-jpg/FIT-FLEX-**

**cd FIT FLEX -frontend**

**npm install**

**npm start**

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**5. Folder Structure**

**FIT FLEX -frontend/**

**│── public/**

**│── src/**

**│ ├── assets/ # Images, icons**

**│ ├── components/ # Reusable UI components (Navbar, SearchBar, etc.)**

**│ ├── pages/ # Pages (Home, workout Details, Favorites)**

**│ ├── context/ # Context API for global state**

**│ ├── hooks/ # Custom hooks (useFetch TRAINING , etc.)**

**│ ├── styles/ # CSS files or styled-components**

**│ ├── App.js**

**│ └── index.js**

**Utilities:**

**Custom hooks (useFIT FLEX .js) for API calls.**

**Helper functions (formatexercise.js, filterexercise.js).**

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**6. Running the Application**

**Frontend Server:**

**cd FIT FLEX -fronten**

**npm start**

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**7. Component Documentation**

**Key Components:**

**Navbar: Provides navigation between categories.**

**Workout List: Displays exercise fetched from API.**

**Workout Details: Shows instructions, ingredients, and steps.**

**Reusable Components:**

**Card.js – For displaying workout cards.**

**Button.js – Styled reusable button.**

**SearchBar.js – Reusable search input with props for placeholder text.**

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**8. State Management**

**Global State:**

**Favorites list GYM in Context API.**

**Search results GYM globally for navigation between pages.**

**Local State:**

**Form inputs (search, filters).**

**UI toggles (dropdowns, modals).**

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**9. User Interface**

**Screenshots (Sample Views):**

**Home Page: Grid of FIT FLEX.**

**Workout Details: exercise + instructions.**

**Favorites Page: Saved EXERCISE.**

**(Screenshots/demos can be added later.)**

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**10. Styling**

**CSS Frameworks/Libraries:**

**Tailwind CSS for utility-first styling.**

**Custom CSS for unique UI elements.**

**Theming:**

**Light and dark mode toggle implemented.**

**Consistent WORKOUT -related UI.**

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**11. Testing**

**Testing Strategy:**

**Unit testing with Jest & React Testing Library.**

**Component rendering tests for Navbar, workout List, and workout Details.**

**Integration tests for search and favorites exercise.**

**Code Coverage:**

**Coverage reports generated using Jest.**

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**12. Screenshots or Demo**

**Demo Link: [To be hosted on Netlify/Vercel]**

**Screenshots:**

**Workout card view.**

**Step-by-step training instructions.**

**Search and filter results.**

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**13. Known Issues**

**API rate limiting may cause delays in workout loading.**

**Favorites not persisted on page refresh (requires backend/localStorage).**

**Some exercise may have missing images from the API.**

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**14. Future Enhancements**

**Add workout planner & grocery list generator.**

**User authentication with login/logout.**

**Voice assistant integration for hands free workout.**

**Multi-language support.**

**Workout video integration.**