

## NAAN MUDHALAVAN PROJECT FITFLEX

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### Introduction

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#### Team members:

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### Project overview

#### Purpose:

Fit Flex is a fitness and wellness web application built with React.js that helps users track workouts, monitor nutrition, and achieve health goals.

#### Features:

- Personalized workout plans;
- Nutrition tracking dashboard;
- Progress graphs and statistics;
- Integration with wearable devices (future enhancement).

npm install

Configure. env variables:

REACT\_APP\_API\_URL=https://api.fitflex.com

## 1. Architecture

### Component Structure:

- Header – Navigation bar;
- Dashboard – Displays user workouts, calories, and goals;
- Workout Planner – Allows creating and editing workout plans;
- Nutrition Tracker – Logs meals and shows calorie intake;
- Progress Charts – Shows progress with charts;
- Footer – Static links and info.

### State Management:

- Uses React Context API for global state (user data, workouts, and nutrition logs).
- Local state for form handling and input validation.

### Routing:

- React Router v6. Routes:

/Dashboard,  
/workouts,  
/nutrition,  
/progress,  
/profile.

## 2. Setup Instructions

### Prerequisites:

Node.js v18+; npm or yarn; Git.

### Installation:

git clone <https://github.com>

/yourrepo/fitflex.git  
cd fitflex/client

### 3. Folder Structure

Client:

/client

/public

/src

/components

/pages

/contexts

/hooks

/utils App.js index.js

Utilities:

- auth.js – helper for authentication;
- api.js – API call wrapper;
- formatters.js – utility for formatting data.

### 4. Running the Application

To start the frontend server locally:

- npm start (This runs the React development server at <http://localhost:3000>).

### 5. Component Documentation

Key Components:

-Dashboard.js – Displays overview of workouts & nutrition;

WorkoutForm.js – Create/edit workouts

(props: on Save, initial Data);

- NutritionTracker.js – Logs meals & calories (props: userId).

### Reusable Components:

- Button.js – Styled button component;
- Card.js – Reusable card container;
- Chart.js – Reusable chart wrapper.

## 6. State Management

### Global State:

#### Managed via Context API:

- User Context, Workout Context, Nutrition Context.
- Stores user profile, workout lists, and nutrition logs.

### Local State:

- Form input states for workout and nutrition forms;
- UI toggles (modal open/close, dark mode).

## 7. User Interface

### Screenshots/GIFs showing:

- Dashboard with summary stats;
- Workout planner interface;
- Nutrition logging form;
- Progress chart view.

## 8. Styling

### CSS Frameworks/Libraries:

- Tailwind CSS for utility-first styling;
- Styled Components for isolated styling.

### Theming:

- Dark and Light themes implemented using CSS variables and Context.

## 9. Testing

Testing Strategy:

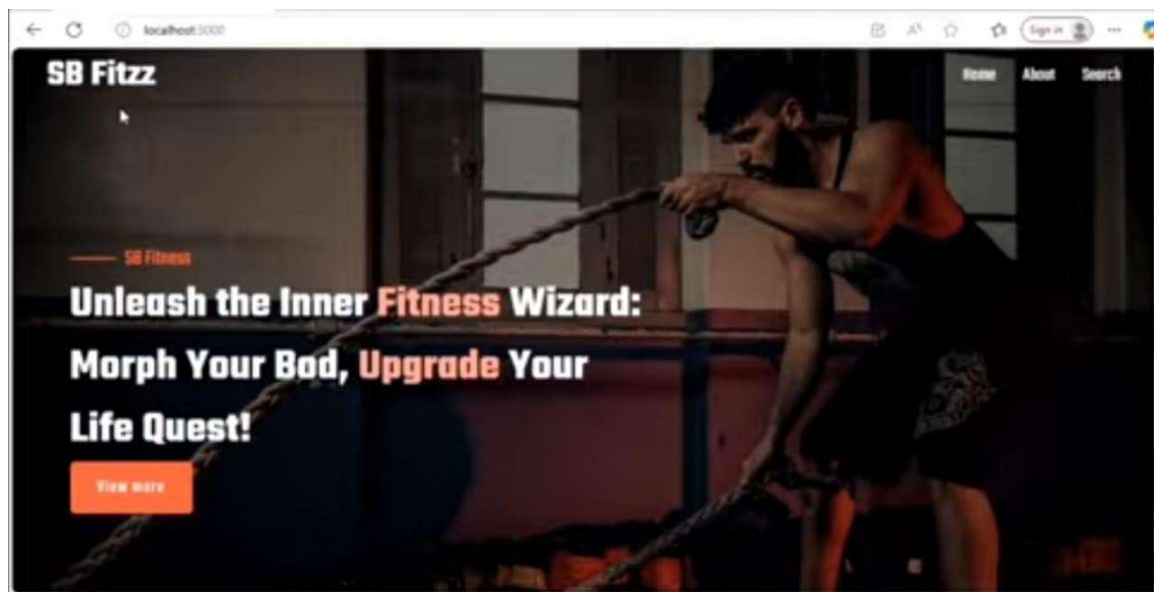
- Unit testing with Jest and React Testing Library;
- Integration tests for forms and API calls; End-to-end testing with Cypress

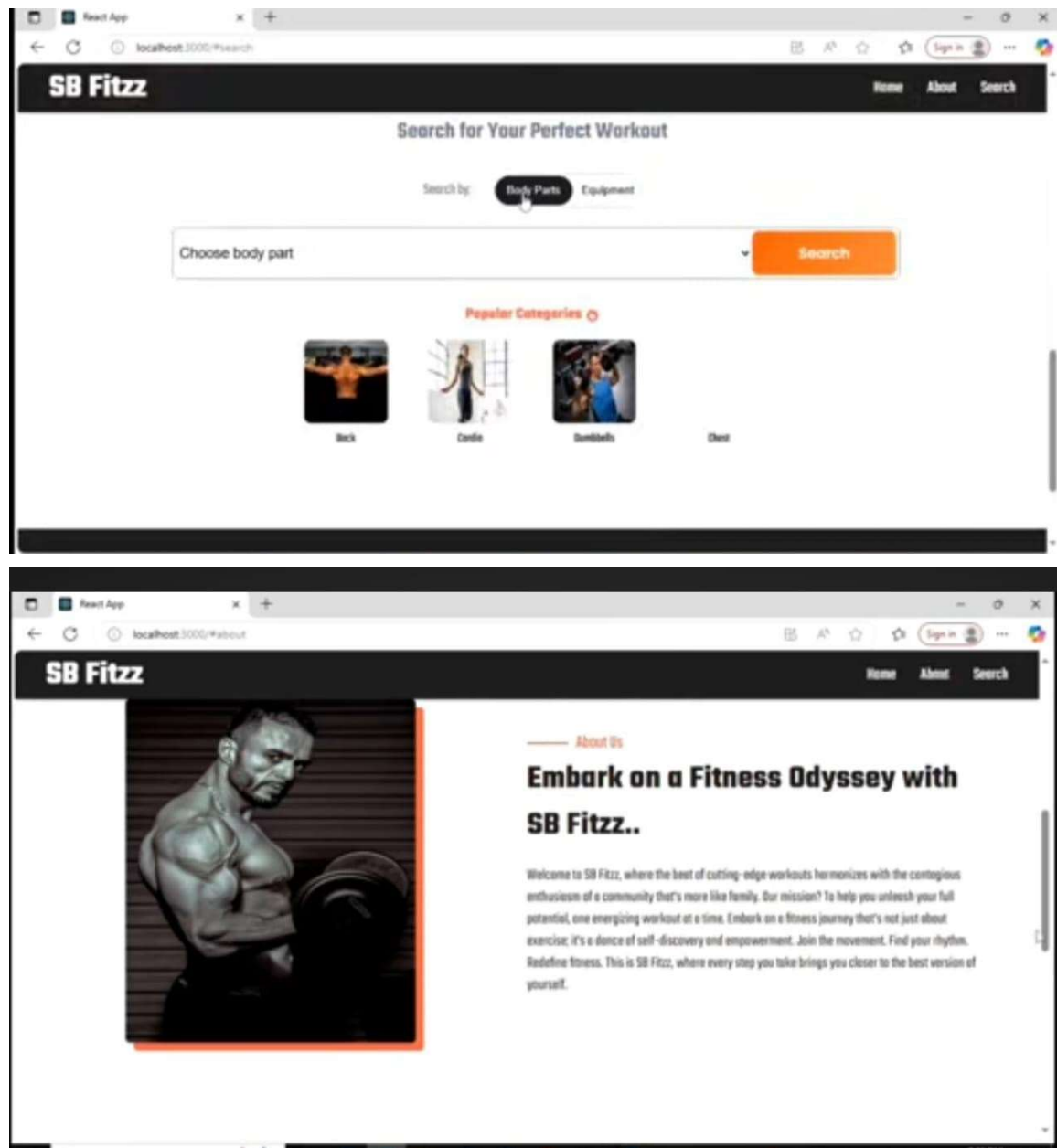
(planned). Code Coverage:

- Uses Jest coverage reports;
- Ensures >80% coverage on critical components.

## 10. Screenshots or Demo

Demo link: <https://fitflex-demo.netlify.app>; Screenshots folder: /assets/screenshots.





## 11. Known Issues

API rate limit may cause occasional delays;

-Wearable device integration not yet implemented.

## 12. Future Enhancements

Add AI-based workout recommendations;

-Integration with Apple Health/Google Fit;

-Gamification features (badges, challenges).