

# NAAN MUDHALAVAN

## PROJECT FITFLIX

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### 1.Introduction

Project Title: FitFlex

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## 2. Project Overview

Purpose:

FitFlex 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).

### 3. Architecture

Component Structure:

- Header – Navigation bar; Dashboard
- Displays user workouts, calories, and goals; WorkoutPlanner
- Allows creating and editing workout plans; NutritionTracker
- Logs meals and shows calorie intake; ProgressCharts
- 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:

- Router v6. Routes:

/dashboard,

/workouts,

/nutrition,

/progress,

/profile.

### 4. Setup Instructions

Prerequisites:

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

Installation:-git clone <https://github.com/yourrepo/fitflex.git>  
cd fitflex/clientnpm install

Configure .env variables:

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

## 5. 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.

## 6. Running the Application

To start the frontend server locally:

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

## 7. Component Documentation

Key Components: [Dashboard.js](#)

- Displays overview of workouts & nutrition; [WorkoutForm.js](#)
- Create/edit workouts (props: onSave, initialData);
- NutritionTracker.js
- Logs meals & calories (props: userId).

Reusable Components:

- Button.js
- Styled button component; [Card.js](#)
- Reusable card container; [Chart.js](#)

- Reusable chart wrapper.

## 8. State Management

Global State:

-Managed via Context API:

-UserContext,

-WorkoutContext,

-NutritionContext.

-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).

## 9. User Interface

Screenshots/GIFs

-: Dashboard with summary stats;

-Workout planner interface;

-Nutrition logging form;

-Progress chart view.

## 10. 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.

## **11. 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).

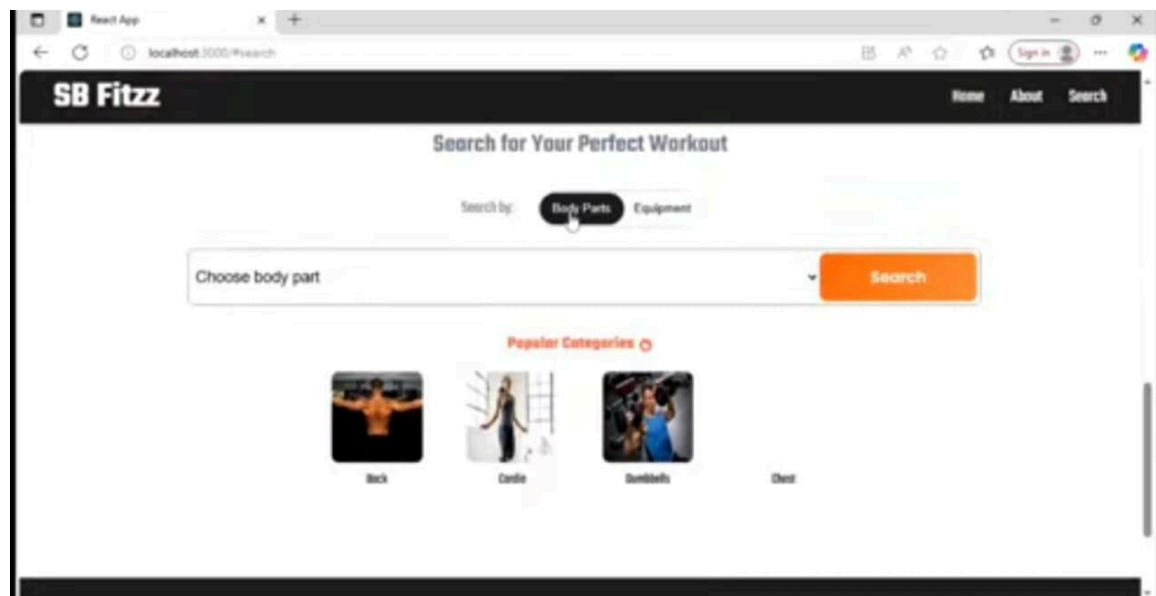
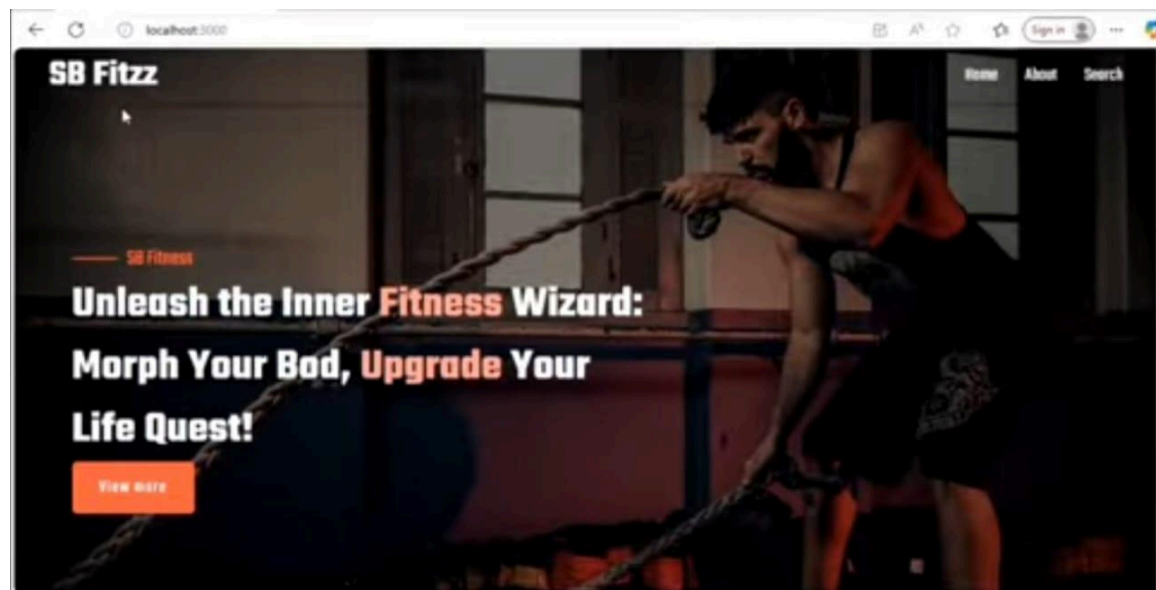
Code Coverage:

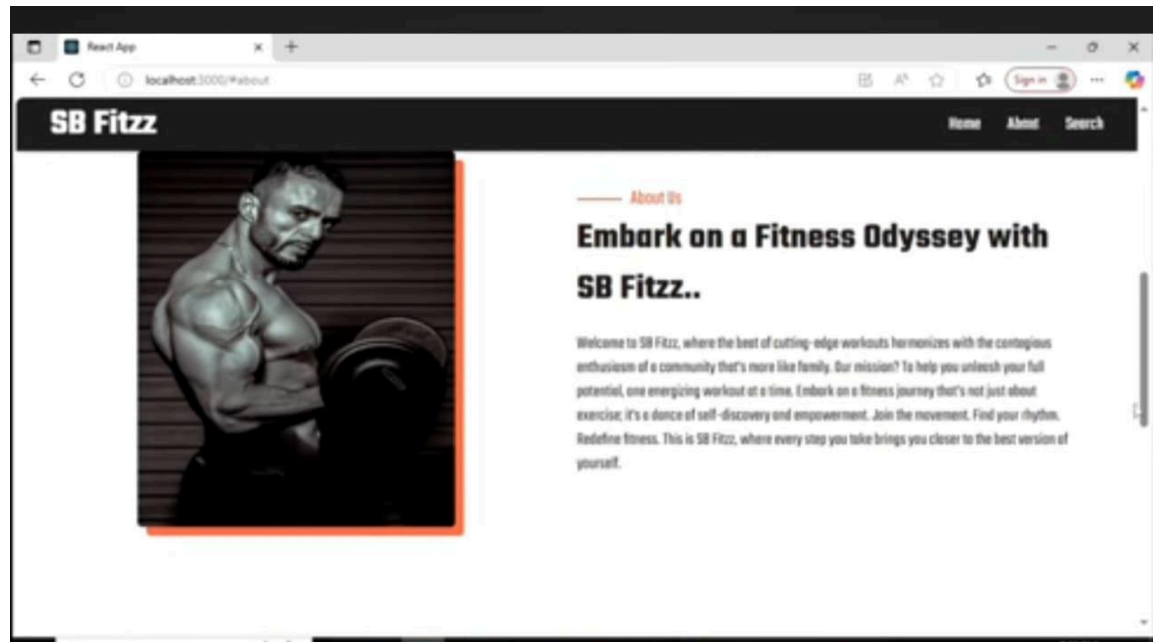
- Uses Jest coverage reports;
- Ensures >80% coverage on critical components.

## **12. Screenshots or Demo**

Demo link: <https://fitflex-demo.netlify.app>;

Screenshots folder: /assets/screenshots.





### 13. Known Issues

API rate limit may cause occasional delays;

-Wearable device integration not yet implemented.

### 14. Future Enhancements

Add AI-based workout recommendations;

-Integration with Apple Health

-Google Fit;

- Gamification features

(badges, challenges).