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## Introduction

FitFlex is a modern fitness and wellness application designed to help users track workouts, monitor nutrition, and maintain a healthier lifestyle. It provides personalized recommendations, progress tracking, and a user-friendly interface that encourages consistency in fitness goals.

## Project Overview

Project Name: FitFlex

Team ID: FF-2025

Team Members: Project Manager, Frontend Developer, Backend Developer, QA Engineer  
Technology Stack: React.js, Node.js, Express.js, MongoDB, Redux Toolkit, TailwindCSS, Jest  
Key Features: User authentication, workout & diet tracking, progress analytics, dark mode, favorites, responsive UI

## Architecture

Frontend: React.js (UI components, Redux, API calls)

Backend: Node.js + Express.js (RESTful API, JWT authentication)

Database: MongoDB (user data, progress tracking, favorites)

Architecture: Frontend <-> Backend API <-> Database

## Setup Instructions

1. Clone repository: `git clone https://github.com/your-repo/fitflex-app.git`
2. Install dependencies: `npm install`
3. Setup environment variables in `.env` (MONGO\_URI, JWT\_SECRET)
4. Start backend: `npm run server`
5. Start frontend: `npm start`

## Folder Structure

```
fitflex-app/
├── backend/
│   ├── controllers/
│   ├── models/
│   ├── routes/
│   └── server.js
├── frontend/
│   ├── src/components/
│   ├── src/pages/
│   ├── src/redux/
│   └── App.js
└── README.md
```

## Running the Application

Run backend: `npm run server`

Run frontend: `npm start`

Open browser: `http://localhost:3000`

## Component Documentation

Header: Navigation & logo

Dashboard: Summary of workouts, nutrition, progress

Workout Tracker: Log exercises

Nutrition Tracker: Log meals

Progress Charts: Data visualization

Profile: User details & settings

## State Management

Redux Toolkit slices: `userSlice`, `workoutSlice`, `nutritionSlice`, `uiSlice`

## User Interface

Clean, minimal design with TailwindCSS, dark/light mode, responsive layout, charts for

analytics. **Styling**

TailwindCSS, custom themes, responsive grid system.

## Testing

Unit testing with Jest, integration with Supertest, future E2E with

Cypress. **Demo Video Link**

<https://drive.google.com/file/d/1z9748lFn8Vjew9JbEraEVflV5kp0chz5/view?usp=sharing>

## **Known Issues**

Limited offline support, no push notifications, chart optimizations

needed. **Future Enhancements**

AI-powered workout recommendations, social features, wearable integration, multilingual support, offline-first PWA.