

## Project Documentation

### Project Title

FitFlex: Your Personal Fitness Companion

#### 1. Introduction

- Project Title: FitFlex
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#### 2. Project Overview

##### • Purpose:

FitFlex is an innovative fitness application designed to redefine how users engage with workouts. It connects beginners, enthusiasts, and professionals to a diverse set of exercise routines while fostering a vibrant fitness community.

##### • Features:

- Dynamic exercise search
- Personalized workout recommendations
- Community-driven collaboration & sharing
- Progress tracking & fitness journey logs
- User-friendly and interactive interface

#### 3. Architecture

- Frontend: React Native / React.js with Tailwind CSS or Material UI
- Backend: Node.js with Express.js for API and server logic
- Database: MongoDB for storing user data, workout details, and community posts
- Authentication: JWT-based secure authentication
- Hosting/Deployment: (e.g., Vercel, Netlify for frontend & Heroku/Render for backend)

#### 4. Setup Instructions

##### • Prerequisites:

- Node.js
- MongoDB
- Git
- React.js / React Native
- Express.js
- Mongoose
- Visual Studio Code

##### • Installation Steps:

```
# Clone the repository
git clone https://github.com/your-username/FitFlex.git
```

```
# Install client dependencies
```

```
cd client
npm install
```

```
# Install server dependencies
```

```
cd ../server
npm install
```

## 5. Folder Structure

FitFlex/

```
|-- client/ # React Native/React frontend
| |-- components/
| |-- screens/
| |-- assets/
|-- server/ # Node.js backend
| |-- routes/
| |-- models/
| |-- controllers/
|-- database/ # MongoDB configuration
|-- docs/ # Documentation and resources
```

## 6. Running the Application

### • Frontend:

```
cd client
npm start
```

### • Backend:

```
cd server
npm start
```

- Access: Visit <http://localhost:3000>

## 7. API Documentation

### • User APIs:

- POST /api/user/register – Register a new user
- POST /api/user/login – User login

### • Workout APIs:

- GET /api/workouts – Get all workouts
- POST /api/workouts/create – Add a workout

### • Community APIs:

- POST /api/community/post – Create a community post
- GET /api/community/:id – Get community details

## 8. Authentication

- JWT-based secure login
- Middleware-protected routes for private access

## 9. User Interface

- Landing Page / Home Screen
- Workout Categories Screen
- Personalized Dashboard
- Community Forum Screen
- Progress Tracking Page

## 10. Testing

- Manual testing during feature milestones
- Tools: Postman, Jest (for unit tests), Chrome DevTools

## 11. Demo Video

<https://drive.google.com/file/d/1ib9b9pa9p2lhJjRQ8Rajky17SFhuOSB5/view?usp=sharing>

## 12. Known Issues

- Limited offline support
- Initial version lacks advanced analytics

## 13. Future Enhancements

- AI-powered workout recommendations
- Integration with wearables (Fitbit, Apple Watch, etc.)
- Nutrition tracking and diet plans
- Live group workout sessions

