Project Documentation:

Project Title: Fitflex: Your Personal Fitness Companion

1. Introduction

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2. Project Overview

Purpose:

FitFlex is a fitness tracking and personal health management application. It helps users log workouts, monitor nutrition, set fitness goals, and track progress over time. The app provides personalized recommendations, reminders, and interactive dashboards to motivate users toward a healthier lifestyle.

Features:

- Track workouts and calories burned

- Log nutrition and meals
- Set fitness goals and reminders
- View progress analytics and insights
- Interactive dashboard with charts and reports
- Modern responsive UI for all devices

3. Architecture

- **Frontend**: React.js with Tailwind CSS for styling
- **Backend**: Node.js with Express.js REST API
- **Database**: MongoDB for storing user profiles, workouts, and nutrition data
- **Authentication**: JWT-based login and signup system

4. Technologies Used

- React.js
- Node.js
- Express.js
- MongoDB
- JWT Authentication
- Visual Studio Code
- Git & GitHub

5. Installation Steps

- Go to project folder: cd FitFlex
- Install frontend dependencies: npm install
- Start the React app: npm run dev
- In a separate terminal, start backend server: npm start
- Access frontend at: http://localhost:5173

6.Folder Structure

```
FitFlex/
│-- code/              # Main project folder
│   │-- db/            # Database configuration
│   │-- node_modules/  # Installed dependencies
│   │-- public/        # Static files
│   │-- src/           # Source code
│       │-- assets/    # Media assets (images, icons, etc.)
│       │-- components/  # React components
│       │-- pages/     # Pages (Dashboard, Login, etc.)
│       │-- App.css
│       │-- App.jsx
│       │-- main.jsx
│   │-- .gitignore
│   │-- package.json
│   │-- vite.config.js
│-- README.md
```

7. Running the Application

- **Frontend**: npm run dev → Access at: http://localhost:5173
- **Backend**: npm start → Runs on: http://localhost:5000

8. API Documentation

Users:

- POST /api/users/register → Register new user
- POST /api/users/login → Login and get JWT token
- GET /api/users/:id → Get user profile

Workouts:

- GET /api/workouts → Get all workouts
- POST /api/workouts → Add new workout
- PUT /api/workouts/:id → Update workout
- DELETE /api/workouts/:id → Delete workout

Nutrition:

- GET /api/nutrition → Get nutrition logs
- POST /api/nutrition → Add nutrition entry
- PUT /api/nutrition/:id → Update entry
- DELETE /api/nutrition/:id → Delete entry

9.Authentication

- JWT-based authentication system
- Passwords secured with bcrypt
- Access control for user data

10. User Interface

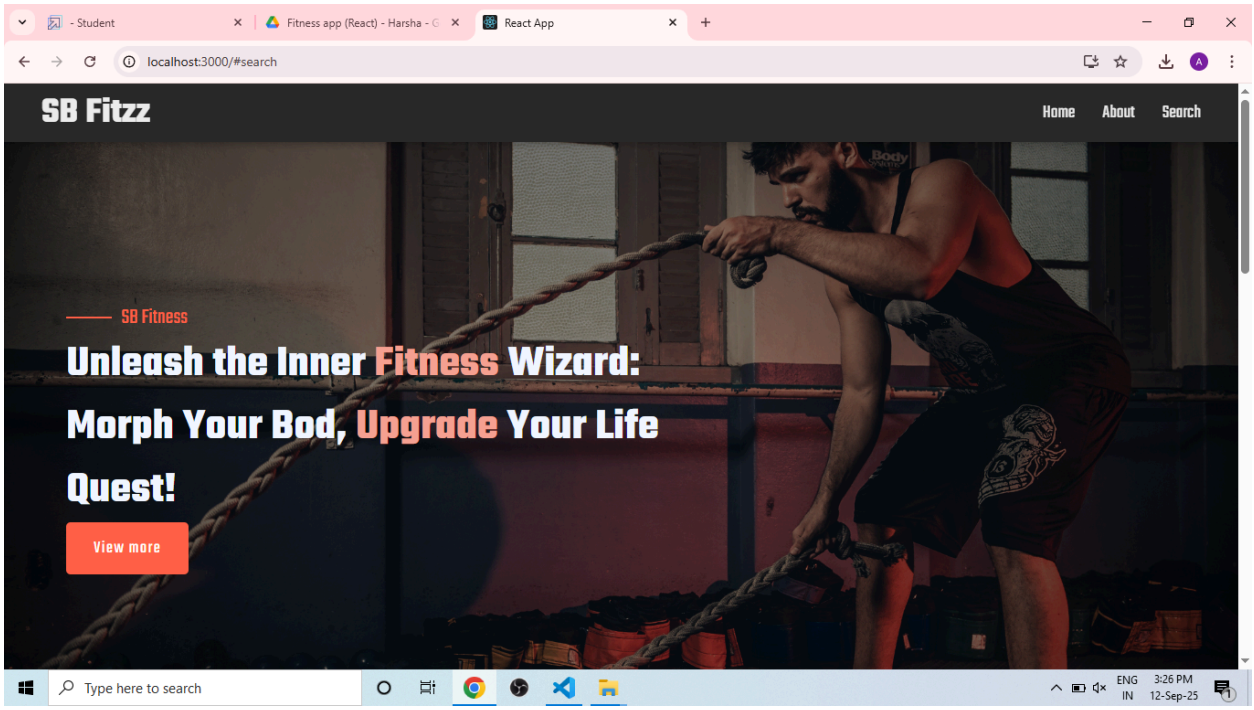
- Landing Page → Overview of app features
- Login / Signup Page → Authentication system
- Dashboard → User's fitness stats and goals
- Workout Logs → Add, edit, and view workouts
- Nutrition Logs → Track daily meals and calories
- Progress Analytics → Charts showing fitness improvements

11. Testing

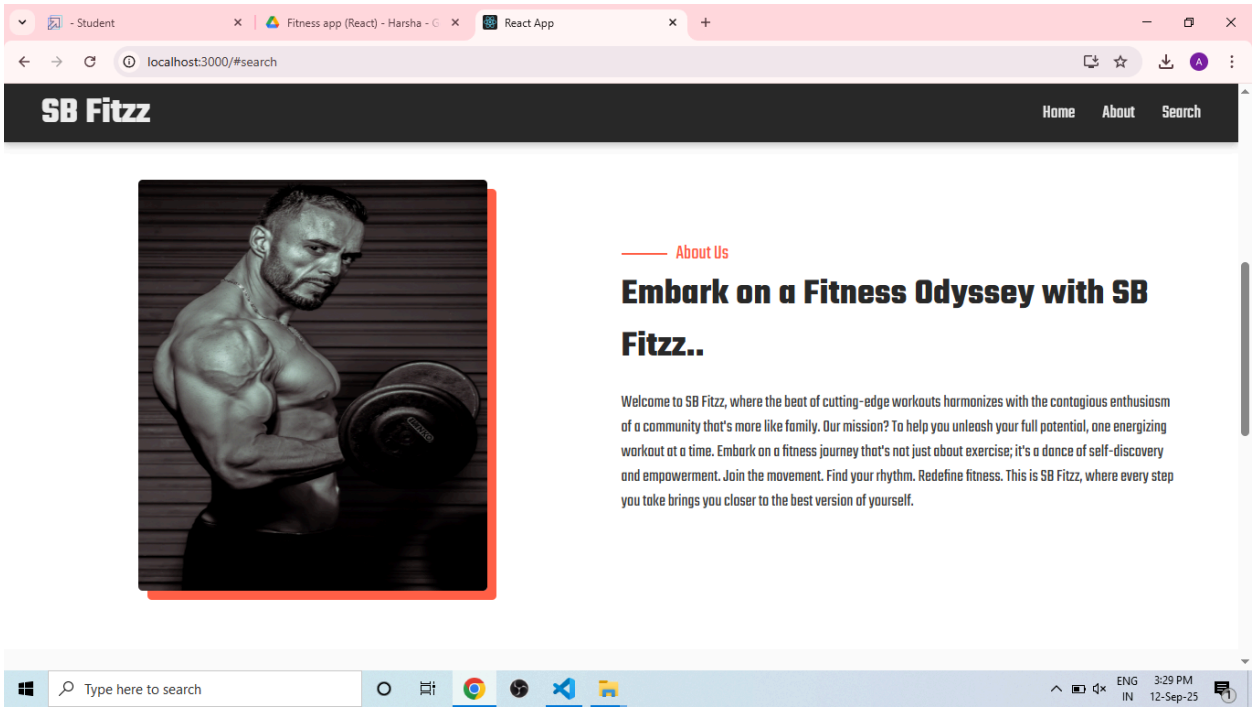
- Manual Testing: Verified workout logging, nutrition entries, goal tracking, and analytics
- Tools: Postman (API testing), Chrome Dev Tools, MongoDB Compass

12. Screenshots

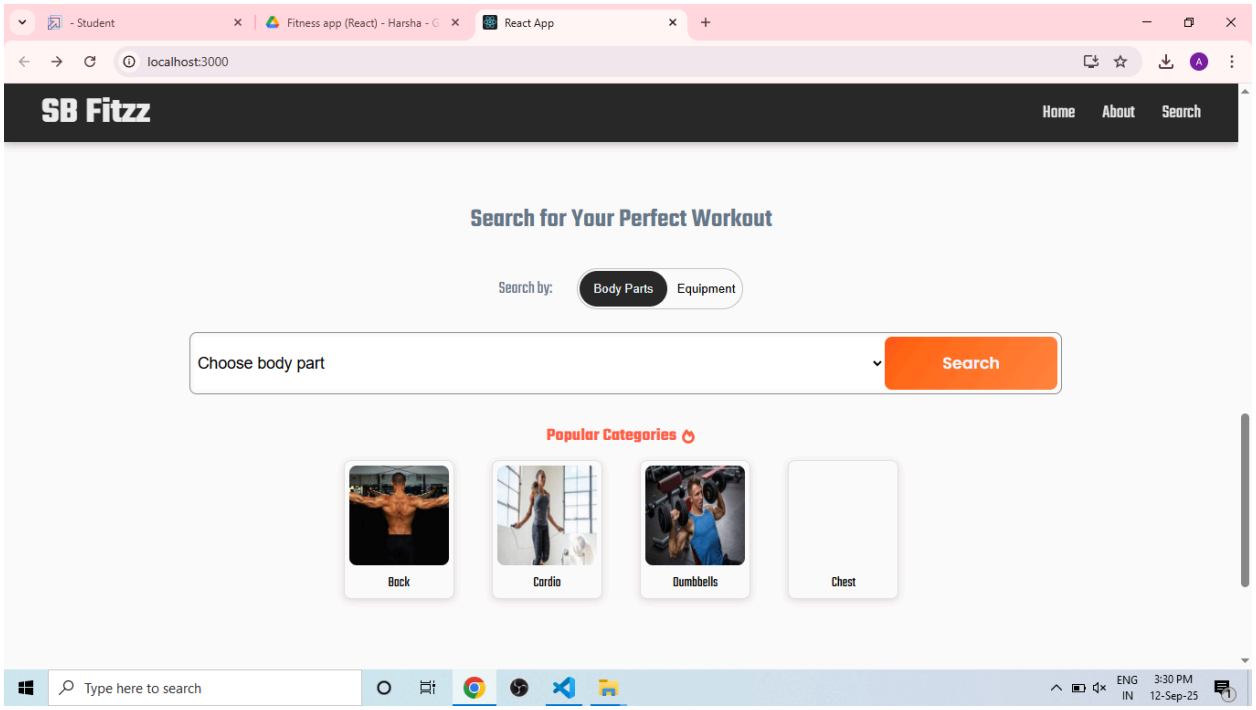
- Dashboard View



- Workout Tracking Page



- Nutrition Log Page



13. Known Issues

- Limited offline support
- No integration with wearable devices (yet)
- Backend needs to be running separately

14. Future Enhancements

- Integration with wearable devices (smartwatches, fitness bands)
- AI-powered fitness recommendations
- Social features (friends, challenges, leaderboards)
- Offline mode with data sync

- Mobile app (React Native)