SCHOOL OF COMPUTATIONAL INTELLIGENCE | MRCET

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III Year B. Tech-II Semester Application Development - II Summary Sheet

Project Title:	FitFusion: Smart Workout, Diet & Motivation App				
Project Code:	22CIAD2A22	**Batch Size:**	03	**Batch:**	2022-26
Domain/Area:	Web Development	**SDG Mapping:**	Good Health and Well-Being		

Abstract:

FitFusion is an AI-powered fitness app offering personalized workout plans, tailored diet recommendations, and daily motivational content based on user data like weight, height, age, fitness goals, and health conditions. Unlike fragmented fitness tools, FitFusion integrates these elements seamlessly for a holistic wellness experience. Using Machine Learning (Linear Regression, LSTM) for fitness predictions, Collaborative Filtering for personalized suggestions, Genetic Algorithms for diet optimization, and NLP for motivational content, the app dynamically adapts to user progress and preferences. Its Smart Progress Dashboard, powered by predictive analytics, provides actionable performance insights, while the interactive frontend (React.js) and robust backend (Python with Django/Flask) ensure a smooth user experience. FitFusion redefines fitness by offering an intelligent, adaptable, and user-centric health platform.

Technical (S/w & H/w) Specifications

Software Specifications

1. IDE: Visual Studio Code
2. Python 3.6 or later
3. Web Framework: Flask
4. Frontend: HTML, CSS, JS
5. Standard Python Libraries

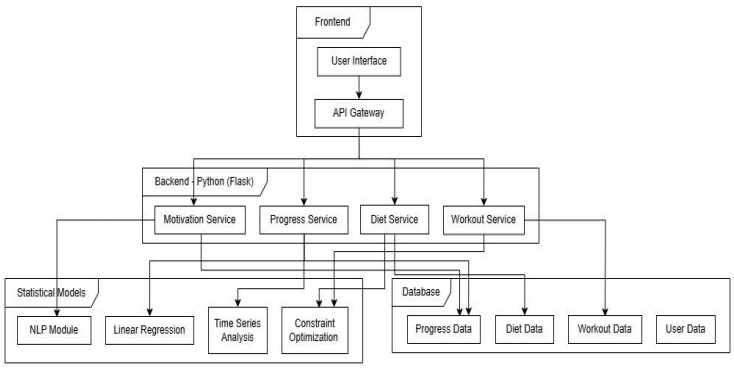
Hardware Specifications

1. Processor: intel i5 or above
2. Memory: 4GB or above
3. Hard Disk: 128GB or above

Module(s) Specifications

Module 1: User Management
Module 2: Workout & Diet Recommendation
Module 3: Smart Progress Dashboard
Module 4: Motivation & Engagement
Module 5: Backend & Cloud Infrastructure

Architecture Diagram



Methodology

- **Requirement Analysis:** Identify user needs, define functionalities, and analyze technical requirements.
- **System Design:** Plan architecture, database schemas, AI models, and UI/UX design.
- **Module Development:** Build frontend (React.js), backend (Django/Flask), integrate AI models, and manage databases.
- **Integration & Testing:** Combine modules, perform system, performance, and security testing.
- **Deployment & Cloud Integration:** Host on AWS/Google Cloud, ensure security and real-time monitoring.
- **Maintenance & Updates:** Monitor performance, fix bugs, and release user-driven updates.

Existing System

1. MyFitnessPal: No real-time adjustments, limited integration.
2. Nike Training Club: Lacks personalized diet and wellness support.
3. Lose It: Focuses only on diet, no fitness or motivation.
4. Headspace: Only mental wellness, no fitness or diet integration.
5. Jefit: Limited to workouts, no diet or motivation.

Proposed System

1. AI-driven, real-time adjustments for fitness, diet, and wellness.
2. Dynamic, personalized fitness and wellness updates.
3. AI-powered, all-in-one fitness and wellness platform.
4. Holistic, personalized health plans with motivation.
5. Integrated platform with predictive fitness and nutrition.

Guide Details

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