

**DBMS Lab Project**

3rd Year CSE(AIML)

**Project Report: Fitness Tracking Web App**

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**Introduction**

This project report documents the development of a Fitness Tracking Web App, created using the Django framework and a MySQL database. The web app is designed to help users track their fitness progress, including workout statistics, calories tracking, and overall fitness-related statistics. It allows users to manually enter their data and monitor their fitness journey over time.

**Project Overview**

The Fitness Tracking Web App is a user-centric platform that empowers individuals to set and achieve their fitness goals. Users can record their daily workouts, track calorie intake and expenditure, and visualize their progress through various statistics.

**Technologies Used**

* Django: The Python web framework used for developing the web app.
* MySQL Database: For storing user data, including workouts, calories, and fitness statistics.
* HTML, CSS, and JavaScript: Used for front-end development.
* Matplotlib: For creating interactive and visually appealing charts and graphs.
* Bootstrap: For responsive and attractive user interface design.
* Git and GitHub: For version control and collaborative development.

**System Architecture**

The system follows a standard three-tier architecture:

* Presentation Tier: The user interface accessible through a web browser.
* Application Tier: Django-based application logic.
* Data Tier: MySQL database for storing user data.

**Features and Functionality**

* User Registration and Authentication

User Registration: Users can create accounts by providing basic information such as username, email, and password.

User Authentication: Secure login and authentication system to protect user data.

* Data Entry and Tracking

Workout Tracking: Users can manually enter their workout sessions, including exercise type, duration, intensity, and date.

Calories Tracking: Users can input their daily calorie intake and expenditure through meals and workouts.

Weight Tracking: The app allows users to log their weight at regular intervals.

* Workout Statistics

Workout History: Users can view a history of their workout sessions, including exercise details and duration.

* Calories Tracking

Calorie Intake: Users can record their daily calorie intake from meals and snacks.

Calorie Expenditure: Tracking of calorie expenditure through recorded workouts.

Calorie Charts: Visual representation of calorie intake and expenditure, helping users maintain a balanced diet.

* Overall Fitness Statistics

Weight Management: Users can track changes in their weight over time, with charts illustrating progress.

BMI Calculation: The app calculates and displays the Body Mass Index (BMI) based on user weight and height.

**Database Design**

The database schema includes the following tables:

* User profile: Stores user account information. Holds user-specific fitness-related statistics, such as weight, BMI, and body fat percentage.
* Module completion: Records workout sessions, including date, exercise type, duration, and intensity.
* Daily data: Tracks calorie intake and expenditure

**Challenges and Future Enhancements**

Third-Party Integrations: Integrating with wearable fitness devices or nutrition databases to automate data input.

Mobile Application: Developing a mobile app version for on-the-go tracking.

Social Features: Adding social features to allow users to share their achievements and connect with others.

Machine Learning: Implementing machine learning models for predictive analysis based on users' historical data.

**Conclusion**

The Fitness Tracking Web App offers a comprehensive solution for individuals to monitor and manage their fitness goals. It provides a user-friendly interface, secure data storage, and valuable insights into workout and calorie tracking. Future enhancements can further enhance its capabilities.

**References**

Django Documentation: https://docs.djangoproject.com/

MySQL Documentation: https://dev.mysql.com/doc/

Bootstrap Documentation: https://getbootstrap.com/docs/

Chart.js Documentation: https://www.chartjs.org/docs/latest/

Django Rest Framework Documentation: https://www.django-rest-framework.org/