

Data Base Management System
[24CSH-204]
Project Report
on
FitZone (Gym Management System)

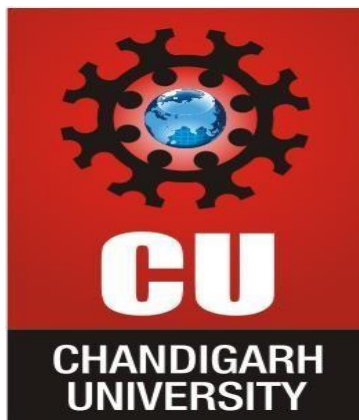
Submitted By:

Students of 24BCS-712 Group A

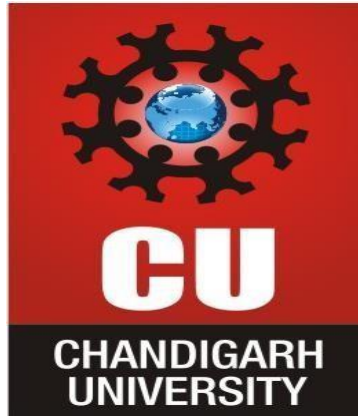
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Online Shopping System

1. Project Overview

Project Title: FitZone – Gym Management System

Domain: Fitness and Membership Management using DBMS

Objective:

The FitZone application aims to simplify gym operations by allowing users to explore gyms, register for memberships, select instructors, and purchase gym-related products. It ensures a centralized database to store all member, gym, and transaction details securely.

This project integrates a database-driven backend using Flask and SQLite, demonstrating how relational databases can efficiently manage real-world business data.

2. Key Features

- **User Authentication:** User registration, login, and secure password hashing.
- **Gym Listings:** Displays all gyms with details, locations, and images.
- **Instructor Selection:** Members can select personal trainers from each gym.
- **Membership Plans:** Users can purchase plans (Monthly, Quarterly, Yearly).
- **Payment Simulation:** Mimics online payment and updates payment status.
- **Product Shop:** Users can buy gym accessories and supplements.
- **Admin Panel:** Admin can view all users, gyms, instructors, and orders.
- **Dark/Light Theme Toggle:** Enhanced UI experience.
- **Offline Support (FitZone v4):** Works completely offline with local images.

After reviewing the cart, users can click on “Checkout” to confirm their order. The order details are saved in the database, the cart is cleared, and a success message is displayed.

3.Database Design

Database Used: SQLite

Tables:

1. **Users** – Member data (id, name, email, password, created_at)
2. **Gyms** – Gym info (id, name, location, description, image_url)
3. **Instructors** – Trainer info (id, name, bio, gym_id, image_url)
4. **Membership_Plans** – Plan data (id, title, duration_days, price, description)
5. **Bookings** – Records of user memberships (user_id, gym_id, plan_id, start_date, end_date, payment_status)
6. **Products** – Gym accessories and supplements
7. **Cart** – Temporary user cart data
8. **Orders & Order_Items** – Records purchases made through the shop

Relationships:

- Each gym has multiple instructors
- Each user can have multiple bookings and orders
- One-to-many relations between user–orders, gym–bookings, instructor–bookings

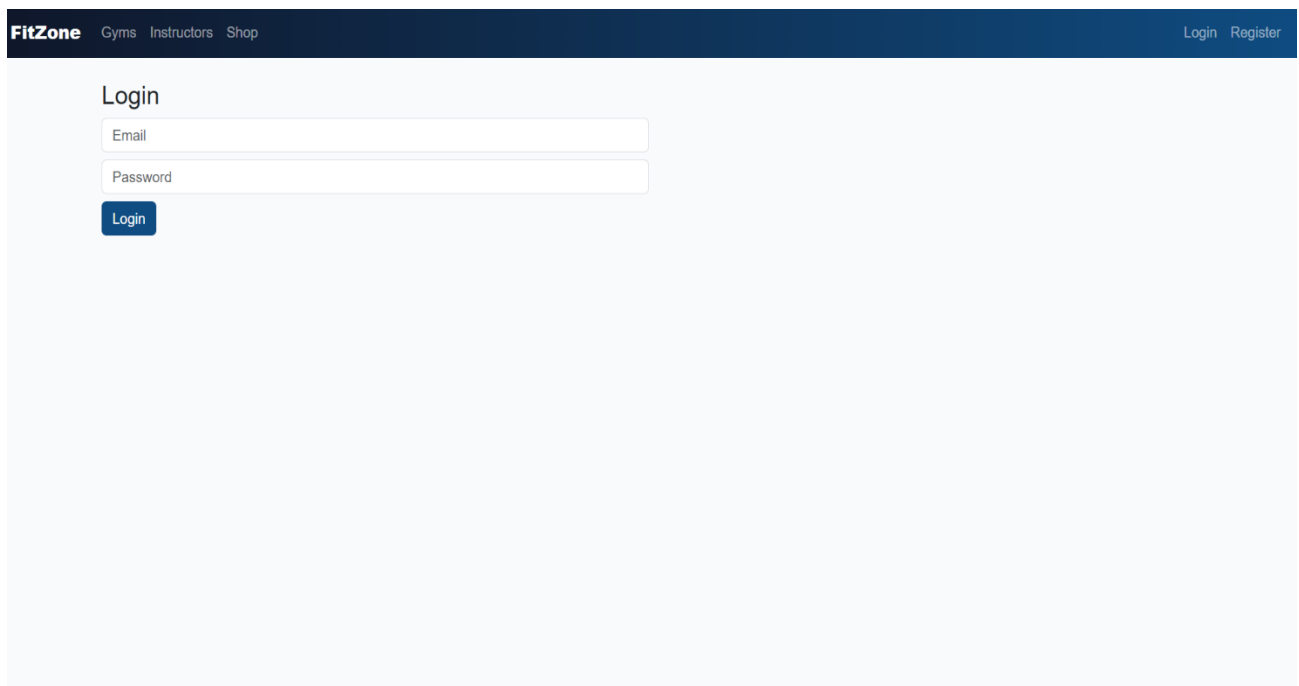
4. Project Workflow

1. **User Registration/Login:** Users can sign up and log in securely.
2. **Gym Selection:** View all gyms and instructors.
3. **Membership Booking:** Select plan, confirm payment, and generate booking.
4. **Trainer Booking:** Choose a personal trainer for specific sessions.
5. **Shop Section:** Purchase fitness products via cart and order system.
6. **Admin Access:** Admin dashboard to manage all data.

5. Technologies Used

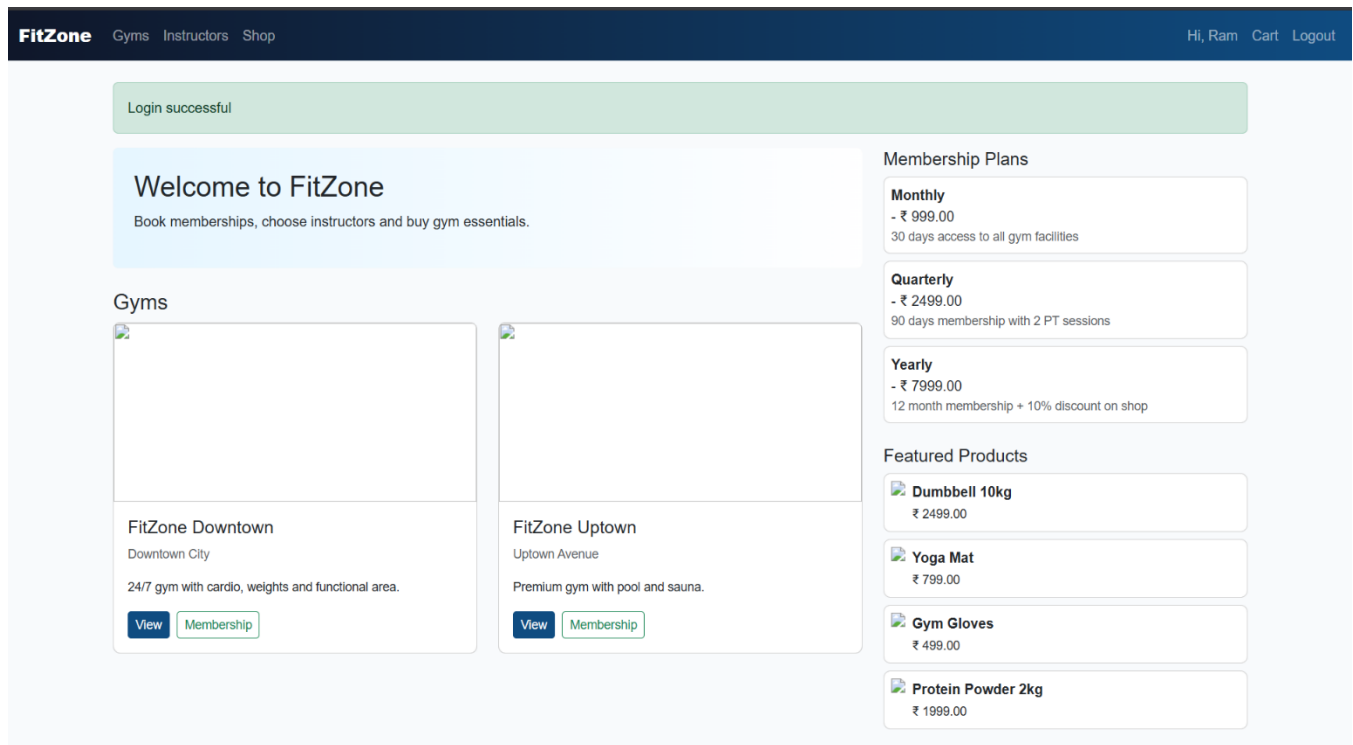
- **Frontend: HTML5, CSS3, Bootstrap 5**
- **Backend: Flask (Python)**
- **Database: SQLite**
- **Libraries: Flask-Bcrypt, Flask-Session**
- **IDE Used: Visual Studio Code**
- **Operating System: Windows**
- **Additional Tools: Unsplash images, FontAwesome icons**

➤ Login page interface



The screenshot displays the login interface for a website named 'FitZone'. The header is a dark blue bar with the 'FitZone' logo on the left and 'Gyms', 'Instructors', and 'Shop' links in the center. On the right side of the header are 'Login' and 'Register' links. The main content area has a light blue background. It features a 'Login' heading, followed by two input fields: 'Email' and 'Password'. Below these fields is a dark blue 'Login' button.

➤ Home page interface



➤ This is the product li

Shop

Categories

- [All](#)
- [Supplements](#)
- [Accessories](#)
- [Equipment](#)

Protein Powder 2kg

Supplements

₹ 1999.00

[View](#) [Add to cart](#)

Gym Gloves

Accessories

₹ 499.00

[View](#) [Add to cart](#)

Yoga Mat

Accessories

₹ 799.00

[View](#) [Add to cart](#)

Dumbbell 10kg

Equipment

₹ 2499.00

[View](#) [Add to cart](#)

➤ Membership Plan Page

FitZone [Gyms](#) [Instructors](#) [Shop](#) [Login](#) [Register](#)

Membership - FitZone Uptown

Select Plan

Monthly - ₹ 999.00

Start Date



dd-mm-yyyy

[Proceed to Pay](#)

➤ Cart and Checkout Page

FitZone [Gyms](#) [Instructors](#) [Shop](#) [Hi, Am](#) [Cart](#) [Logout](#)

Your Cart

Product	Qty	Price	Subtotal	
 Protein Powder 2kg	1	₹ 1999.00	₹ 1999.00	Remove
 Gym Gloves	1	₹ 499.00	₹ 499.00	Remove

Total: ₹ 2498.00

[Checkout](#)

7. Highlights & Learnings

- Designing relational models for multiple entity relationships (User–Gym–Instructor–Plan).
- Implementing authentication, membership logic, and cart management.
- Handling payments and bookings with database updates.
- Creating modern UI/UX with light/dark theme toggle.
- Managing all content with SQLite for seamless integration.
- Understanding offline-first architecture by linking static assets locally.

8. Conclusion

The FitZone Gym Management System successfully demonstrates the power of database-driven web applications. It efficiently handles member data, gym operations, and e-commerce integration in a single platform. The system's modular structure and secure design make it scalable and easy to maintain for real-world use cases.

2. References

1. Flask Official Documentation

2. MySQL Developer Reference Manual

<https://dev.mysql.com/doc/>

Used to design relational tables and learn SQL query structures.

3. GeeksforGeeks – DBMS and PHP Tutorials

<https://www.geeksforgeeks.org/>

4.SQLite3 Documentation

5.Bootstrap

6. Unsplash (for local and hosted gym/product images)

7. W3Schools for HTML/CSS

