

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

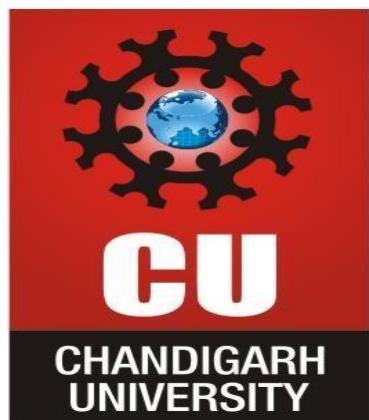
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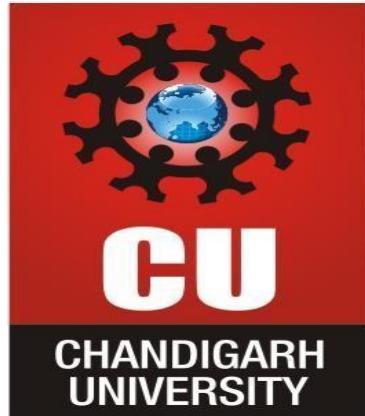
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# Online Shopping System

## 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

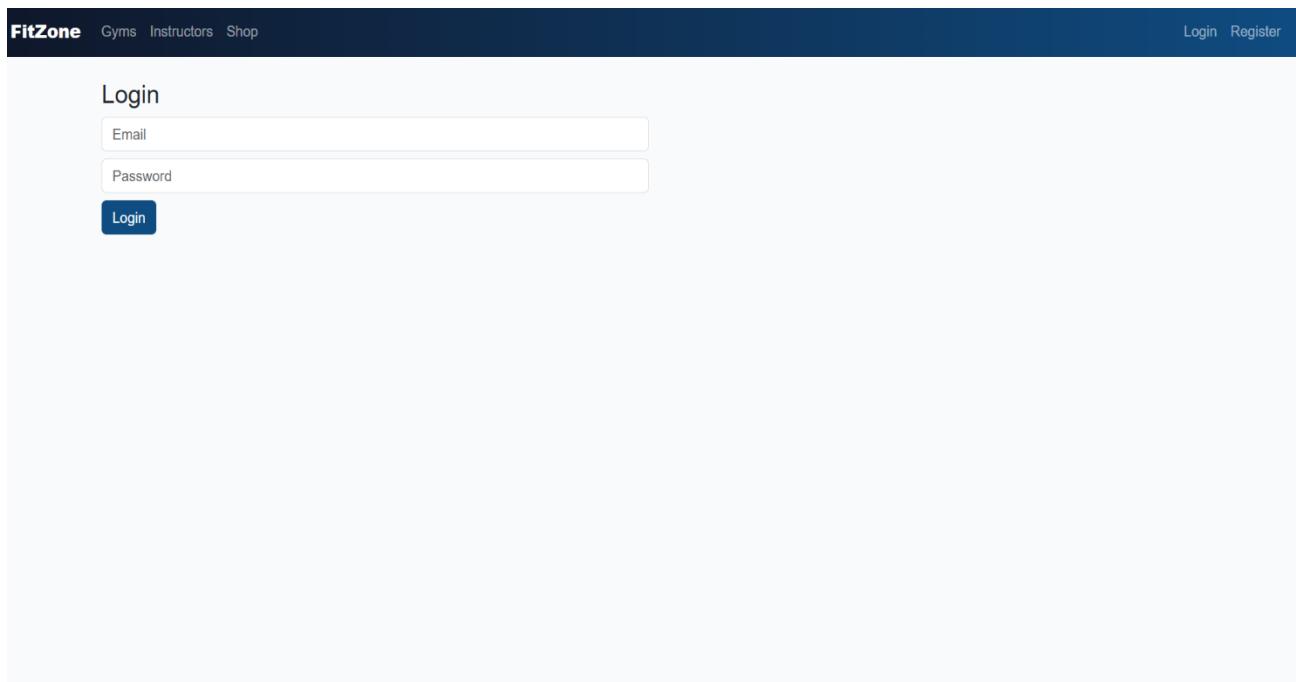
### **4. Project Workflow**

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



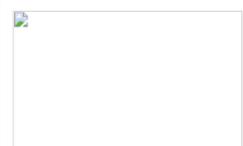
➤ Home page interface

The screenshot shows the FitZone website homepage after a successful login. At the top, there's a dark header bar with the FitZone logo and links for Gyms, Instructors, and Shop. On the right side of the header, it says "Hi, Ram" and has links for Cart and Logout. Below the header, a green banner displays the message "Login successful". The main content area starts with a "Welcome to FitZone" section, which includes a brief description: "Book memberships, choose instructors and buy gym essentials." To the right of this, there's a "Membership Plans" section with three options: "Monthly" (₹ 999.00, 30 days access), "Quarterly" (₹ 2499.00, 90 days membership with 2 PT sessions), and "Yearly" (₹ 7999.00, 12 month membership + 10% discount on shop). Below these is a "Featured Products" section with four items: "Dumbbell 10kg" (₹ 2499.00), "Yoga Mat" (₹ 799.00), "Gym Gloves" (₹ 499.00), and "Protein Powder 2kg" (₹ 1999.00). On the left side, there's a "Gyms" section with two cards: "FitZone Downtown" (Downtown City, 24/7 gym) and "FitZone Uptown" (Uptown Avenue, Premium gym with pool and sauna). Each card has "View" and "Membership" buttons.

➤ This is the product li

## Shop

### Categories

[All](#)[Supplements](#)[Accessories](#)[Equipment](#)**Protein Powder 2kg**

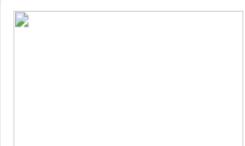
Supplements

₹ 1999.00

[View](#) [Add to cart](#)**Gym Gloves**

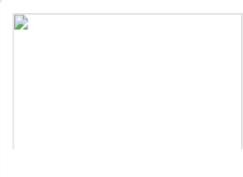
Accessories

₹ 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

The screenshot shows the 'Membership - FitZone Uptown' page. At the top, there's a navigation bar with links for 'FitZone', 'Gyms', 'Instructors', 'Shop', 'Login', and 'Register'. Below the navigation, the page title 'Membership - FitZone Uptown' is displayed. A 'Select Plan' dropdown menu is open, showing 'Monthly - ₹ 999.00'. Below it, a 'Start Date' input field contains 'dd-mm-yyyy' and has a calendar icon to its right. A green 'Proceed to Pay' button is located at the bottom left of the form area.

➤ Cart and Checkout Page

The screenshot shows the 'Your Cart' page. At the top, there's a navigation bar with links for 'FitZone', 'Gyms', 'Instructors', 'Shop', 'Hi Am', 'Cart', and 'Logout'. Below the navigation, the page title 'Your Cart' is displayed. A table lists the items in the cart:

Product	Qty	Price	Subtotal	Action
Protein Powder 2kg	1	₹ 1999.00	₹ 1999.00	<a href="#">Remove</a>
Gym Gloves	1	₹ 499.00	₹ 499.00	<a href="#">Remove</a>

Total: ₹ 2498.00

A green 'Checkout' button is located at the bottom left of the cart area.

## 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

