

**Gym Management System**

PROJECT PROPOSAL



group:3

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# A. What is the system idea in a nutshell?

The proposed project is a **Gym Management System (GMS)** designed to streamline and automate key gym operations. The system allows users to register as members, subscribe to weekly membership plans, and optionally choose personalized fitness services. It also offers an admin panel for managing users, plans, and service subscriptions. The goal is to improve both user experience and operational efficiency by maintaining a well-structured relational database that ensures secure, scalable, and reliable data management.

# 2. What information and services will the system offer to users and administrators?

The Gym Management System (GMS) is built to serve two primary stakeholder groups: Gym Members and Administrators. Each interacts with the system through defined backend components that ensure accurate data storage, relational mapping, and secure service management.

**Stakeholders and Their Backend Information Needs**

**1. Gym Members (Primary Users):**

Gym members are the end-users of the system and the primary source of data. The backend must capture, store, and process a variety of information about each member.

* **Personal Details:** The system records essential user details such as name, contact information, and login credentials. This information supports identity verification and personalized access.
* **Membership Plans:** Each member’s subscription to Normal or Premium plans is stored in the database, linked with start and end dates. The backend automatically calculates expiry, renewals, and payment schedules.
* **Optional Service Selections:** Members may enhance their experience by opting for services like custom workout plans, diet plans, or meal prep. These are linked to their subscriptions in a many-to-many relationship, allowing flexibility and personalization.
* **Payment History:** Every payment transaction is logged with timestamps, subscription details, and payment method. This ensures transparency, enables refunds or adjustments, and provides members with reliable historical records.
* **Backend Automation:** The system automatically updates subscription statuses (active, expired, canceled) and applies billing rules. Members indirectly benefit from this automation since they don’t need to manually monitor renewals or service allocations.

**2. Administrators (Gym Staff):**

Administrators are responsible for overseeing the entire operation of the system and rely heavily on accurate backend data.

* **User Records Access:** The backend allows administrators to search, update, or deactivate member accounts. This ensures that only active members are using gym facilities.
* **Plan Configurations:** Administrators can create, modify, or retire membership plans (e.g., adjusting prices or adding benefits). These updates are immediately reflected in the database and linked to subscriptions.
* **Service Management:** Admins oversee add-on services, ensuring that optional features such as diet or workout plans are correctly stored, priced, and linked to active users.
* **Payment Reporting:** Every financial transaction is stored in a structured table. Admins can query this data to monitor outstanding balances, detect irregularities, and generate financial reports.

**3. Trainers/Nutritionists (Future Stakeholders):**

While not part of the initial system design, trainers and nutritionists represent an important stakeholder group for future scalability.

* **Service-Related Data Access:** Trainers may need to access workout or diet plans assigned to members. This would require a secure backend mechanism linking trainer accounts with user subscriptions and services.
* **Progress Tracking:** In an advanced version, trainers could input progress updates (e.g., workout achievements, dietary adjustments) into the system, enriching the member’s record.
* **Collaboration with Administrators:** Trainers and nutritionists may collaborate with gym staff by suggesting new service packages, which can be integrated into the system for future members.
* **Scalability Role:** Including this stakeholder ensures that the system can evolve from a basic membership management tool into a comprehensive health and fitness management platform.

**Backend Components and Data Services**

1. **User Management Component:**  
   Stores and manages user data, including registration, authentication credentials, and personal details.
2. **Membership Plans Component:**  
   Defines plan details (Normal, Premium), including costs and benefits. This is referenced whenever a subscription is created.
3. **Subscription Component:**  
   Connects users to specific membership plans. Handles active/inactive status, start/end dates, and service mappings.
4. **Service Management Component:**  
   Records optional add-on services (e.g., diet plans, workouts) and links them to users’ subscriptions.
5. **Payment Processing Component:**  
   Stores transactional data for each subscription or service, ensuring an auditable trail of all financial activity.
6. **Reporting and Analytics Component (Admin-focused):**  
   Pulls data from subscriptions and payments to generate operational insights such as revenue, member activity, and service popularity.

What Data Will the Gym System Store?

The system will store two main types of data:

Member Data (about the gym users)

* Full Name
* Contact details (phone, email, address)
* Date of birth & age
* Membership type (weekly, monthly, yearly)
* Payment records (fees paid, due dates)
* Attendance/Check-in history
* Health & fitness details (weight, height, medical notes, goals – optional)

Gym Management Data (about the gym operations)

* Staff details (trainers, receptionists, admin)
* Class schedules (yoga, Zumba, weight training, etc.)
* Equipment details (availability, maintenance records)
* Login and system access records (for staff/admin)

# Where Will the Data Come From?

1. **From Members (Users):**

* When they register online or at the gym reception, they fill out a **registration form** (name, age, contact, membership plan).
* When they log in, check in at the gym, or book a class, new data (attendance, booking) is stored.

1. **From Staff/Admin:**

* Staff enter **payment details**, **membership updates**, and **equipment maintenance** records into the system.

1. **From System Activity:**

* The system itself automatically records things like **login times**, **class bookings**, and **membership expiry reminders**.

**Simple Example**

* If **Yogesh** joins the gym → his details (name, age, contact, payment) are entered into the system.
* When Yogesh **checks in at the gym** → the system adds a record to his attendance history.
* If he books a **Zumba class** → that booking is stored in the schedule database.
* If the **treadmill is under maintenance** → staff update the equipment record in the system.

# 4. What are the main use cases and who are the target users?

Use Cases:

The gym management system will support the following main use cases for both members and administrators:

### Member Use Cases:

* Register a new user account
* Subscribe to a weekly/monthly/annual plan
* Add or remove optional services (personal training, nutrition counselling, etc.)
* View or update personal information in the user dashboard
* Book/cancel fitness classes or personal training sessions
* Track workout history and progress
* Make payments and view billing history
* Provide feedback or rate services
* Connect with trainers via messaging system
* Participate in gym challenges and track progress
* View gym facility schedule and availability
* Receive personalized workout recommendations

### Administrative Use Cases:

* Create and manage membership plans
* Add/edit/remove services and classes
* Manage trainer schedules and assignments
* Process payments and handle billing issues
* Generate reports on membership, revenue, and attendance
* Manage facility maintenance requests
* Handle member complaints and feedback
* Create promotional offers and discounts
* Monitor equipment usage and maintenance
* Manage inventory of supplements and merchandise
* Configure system settings and permissions

## Target Users/Actors

### Primary Users:

* + **Gym Members:** Individuals who use the gym facilities and services
    - Regular members
    - Premium members (with additional services)
  + **Gym Staff:**
    - Front desk personnel
    - Personal trainers
    - Fitness class instructors

### Administrative Users:

* + **Gym Owners:** Oversee all operations, finances, and staff.

## Comparable Systems

When designing this system, it is important to compare with existing gym management software to identify advantages, limitations, and potential improvements.

#### 1. Mindbody (https://www.mindbodyonline.com/)

* **Advantages:** Comprehensive all-in-one solution covering scheduling, payments, and marketing; offers a mobile app for members.
* **Disadvantages:** Expensive subscription fees and can be overly complex for small gyms.
* **Comparison:** Our system will be more affordable and streamlined, focusing only on essential features for small to mid-sized gyms.

#### 2. **Glo fox** (https://www.glofox.com/)

* **Advantages:** Strong focus on class scheduling, trainer management, and user-friendly client app.
* **Disadvantages:** Limited customization options and requires a constant internet connection.
* **Comparison:** Our system will allow more flexible service customization and provide an option for partial offline access.

#### 3. **Zen Planner** (https://zenplanner.com/)

* **Advantages:** Offers powerful reporting tools, attendance tracking, and staff scheduling.
* **Disadvantages:** Steeper learning curve and some issues reported with its mobile app.
* **Comparison:** Our system will provide a simpler, intuitive user interface suitable for both administrators and gym members with minimal training required.