PROJECT REPORT

by

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I. Introduction

GymFlow.PH is a streamlined, web-based management solution designed specifically for local fitness centers in the Philippines. In an era where manual logbooks are becoming obsolete, Gym Flow provides a digital bridge for gym owners and their members.

The primary goal of the project is to simplify the **membership lifecycle**—from initial registration to daily attendance tracking. It addresses the need for financial transparency by displaying membership costs and promoting member consistency through a dedicated "Self-Check-In" portal. By automating attendance logs and membership tier management, Gym Flow reduces administrative overhead and provides members with immediate access to their personal fitness stats.

Technologies Used

The project follows a classic **LAMP-stack inspired** architecture, focusing on high performance and ease of deployment on local servers like XAMPP.

- **Frontend (The View):**
    - **HTML5 & CSS3:** Utilizes modern Flexbox and CSS Grid for a responsive, mobile-first design.
- **JavaScript:** Handles asynchronous API calls (Fetch API) to update the dashboard without reloading the page.
- **Backend (The Controller):**
- **PHP 8.x:** Manages server-side logic, session security, and communication between the frontend and the database.
- **Database (The Model):**

- **MySQL:** Stores relational data across structured tables with optimized constraints to ensure data integrity.
- **Tools:**
- **XAMPP:** Local development environment.
- **MySQL Workbench:** For database modeling and schema management.

Database Design

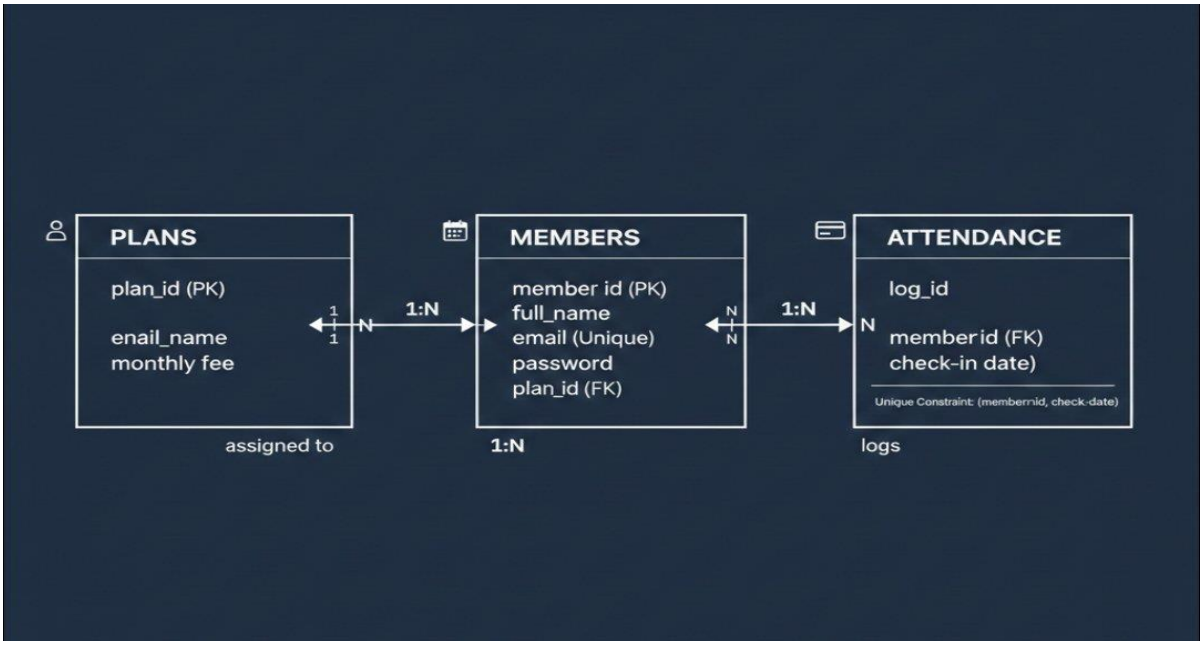
Entities and Relationships

1. **Plans (Membership Tiers):**
    a. **Attributes:** plan_id (PK), plan_name, monthly_fee.
    b. **Relationship:** One-to-Many with **Members**. One plan (e.g., "Student Pass") can be assigned to many different members, but a member can only belong to one plan at a time.

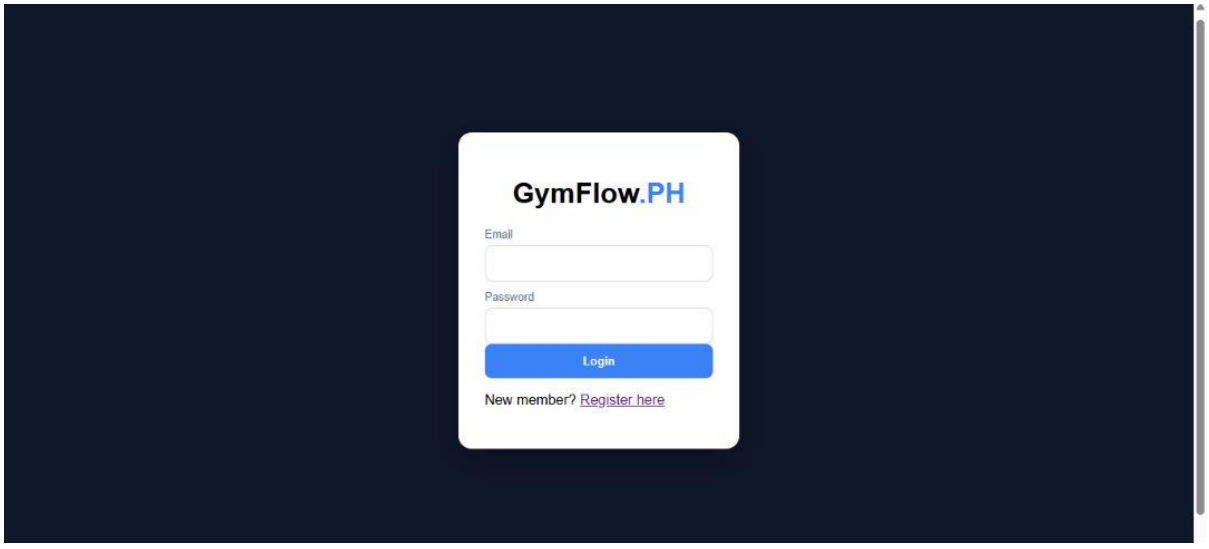
2. **Members (Users):**
    a. **Attributes:** member_id (PK), full_name, email (Unique), password, plan_id (FK).
    b. **Relationship:** The "Heart" of the database. It connects a user to their financial obligations (Plans) and their physical activity (Attendance).

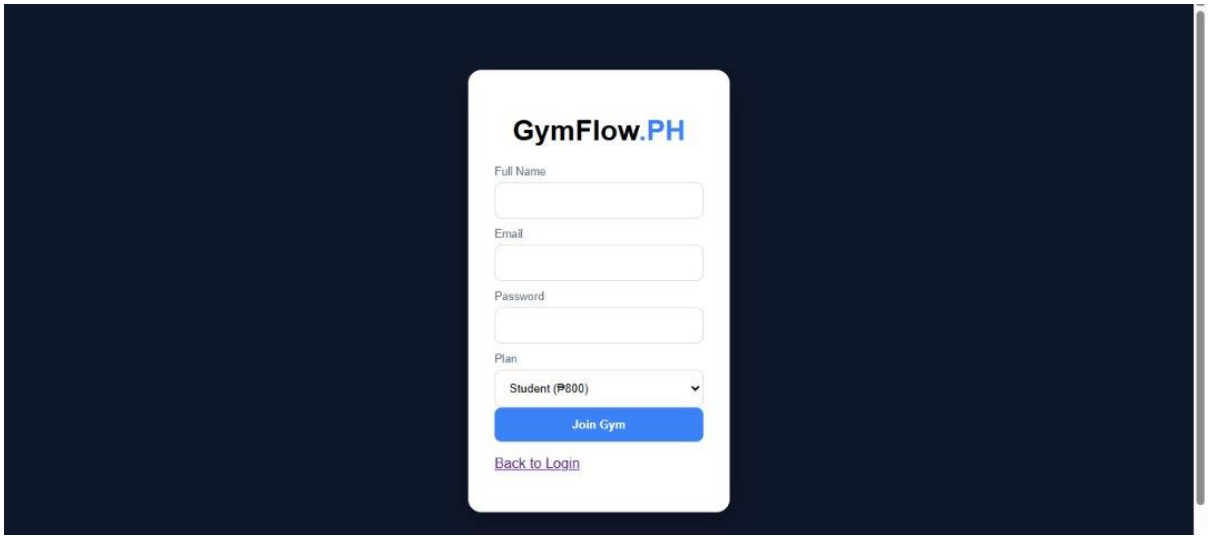
3. **Attendance (Daily Logs):**
    a. **Attributes:** log_id (PK), member_id (FK), check_in_date.
    b. **Relationship:** Many-to-One with **Members**. A single member can have many attendance records (one for every day they visit), but each attendance record belongs to exactly one member.

c. **Unique Constraint:** A composite unique key is applied to (member_id, check_in_date) to ensure a member cannot record two sessions on the same day.



WEB INTERFACE





CHALLENGES AND LEARNING

. Technical Environment & Debugging

- **Hardware Constraints:** Developing on a system with frequent errors meant constant restarts and troubleshooting. This made it difficult to maintain a "flow state" but taught the importance of frequent saving and version control.
- **XAMPP & Port Conflicts:** One major challenge was getting Apache and MySQL to run consistently. Often, other system processes would block ports, requiring deep dives into the BIOS or Task Manager to resolve conflicts.
- **Logic Errors in PHP:** Setting up the "Self Check-In" logic was tricky. Ensuring that the code correctly identifies if a user has *already* checked in for the day required precise SQL queries and session handling.

2. The "Tutorial Trap"

- **Version Mismatch:** Watching YouTube tutorials often led to confusion because many videos use older versions of PHP (like 5.6 or 7). Adapting old code to work with **PHP 8.x** requirements was a significant hurdle.
- **Fragmented Information:** Tutorials often show how to build a login *or* a database, but rarely how to connect them.

Key Learnings

1. Full-Stack Integration

I learned how the "Three Pillars" of web development interact. I now understand how a button click in **HTML/JS** sends a request to **PHP**, which then updates a row in **MySQL**. This "Full Cycle" understanding is much more valuable than just writing code.

2. Database Integrity

Before this project, I didn't realize how important "Unique Keys" were. By adding a unique constraint to the attendance table, I learned how to let the database handle logic (preventing double entries) instead of relying solely on the PHP code.

3. Professional Formatting

Working on the Philippine Peso (₱) integration taught me about **Localization**. Using .toLocaleString('en-PH') showed me how professional apps adapt their data to be user-friendly for a specific target market.

4. Persistence in Troubleshooting

The constant errors on my laptop actually became a "teacher." I learned that 70% of software engineering is not writing code, but **googling the error message** and reading documentation. This project proved that you don't need a perfect computer to build a working system—you just need persistence.