GYM MANAGEMENT SYSTEM

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Gym Management System Documentation

Introduction

The Gym Management System (GMS) is a web-based application designed to streamline gym operations, including managing memberships, trainers, workout schedules, payments, and class bookings. The system ensures efficient handling of gym-related data and provides a user-friendly interface for administrators and users.

ER Diagram

The following ER diagram represents the structure of the database used in the Gym Management System.
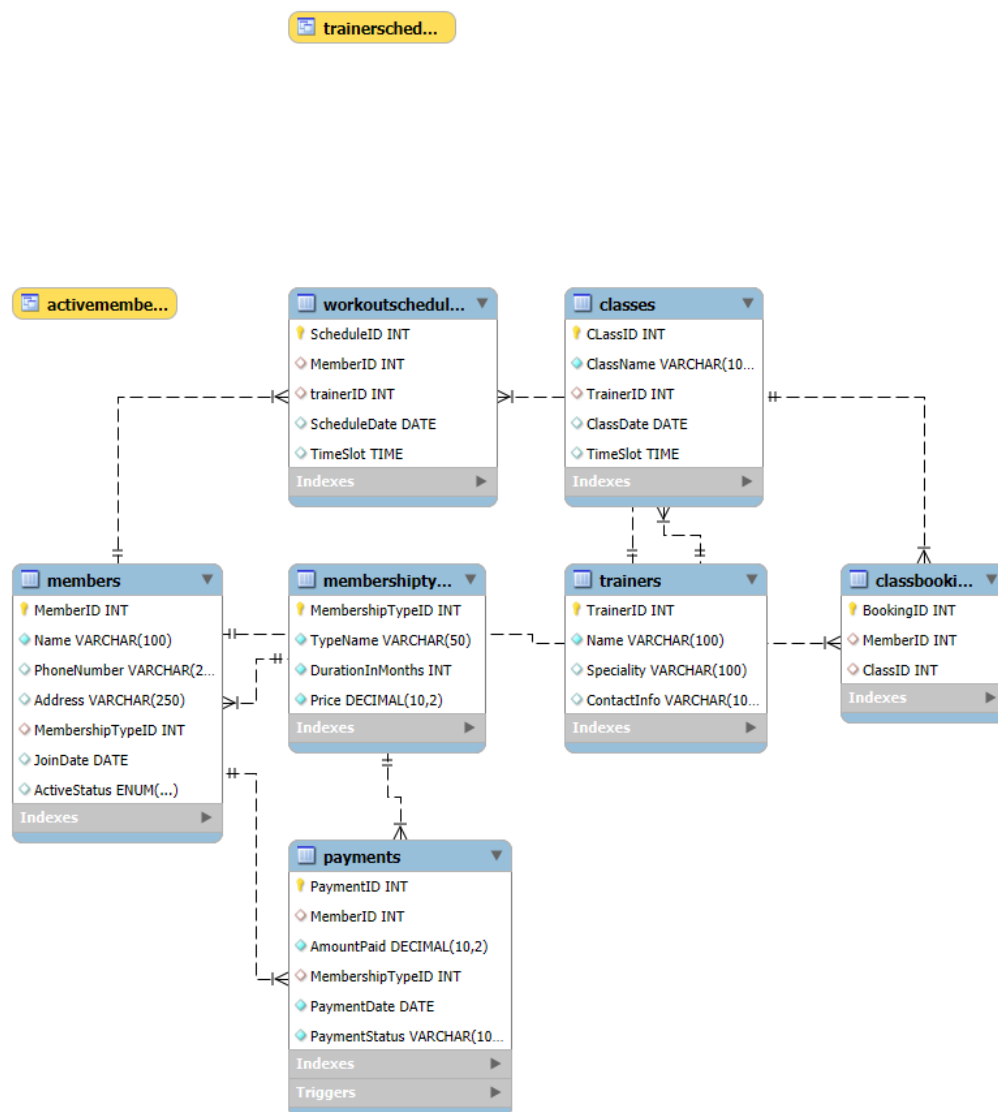
Features

- Membership Management: Add, update, and view member details.

- Trainer Management: Maintain trainer profiles and specialties.

- Workout Scheduling: Assign workout schedules to members with trainers.

- Class Bookings: Allow members to book classes.

- Payment Tracking: Manage membership payments and statuses.

- Reports: Generate summaries of memberships, payments, and schedules.

Technology Stack

The following technologies were used to build the Gym Management System:

- Backend: Node.js with Express.js

- Frontend: HTML, CSS, JavaScript, and EJS (Embedded JavaScript Templates)

- Database: MySQL

- Tools: MySQL Workbench

- Runtime Environment: Node.js

Database Details

The database consists of multiple tables to handle various entities like Members, Trainers, Workout Schedules, Payments, Membership Types, Classes, and Class Bookings. The primary relationships and attributes are depicted in the ER diagram.

System Modules

- Members Module: Manages member details, including adding new members and viewing member information.

- Trainers Module: Tracks trainers' details and their assigned workout schedules.

- Workout Schedules Module: Handles schedules assigned to members and trainers.

- Payments Module: Processes membership payments and maintains payment history.

- Class Booking Module: Facilitates member class bookings and tracks attendance.

Additional Details conclusion

1. **File Structure:** The project follows an organized MVC pattern, separating routes, views, and controllers.

2. 2. **Database Connection:** Configured using environment variables for security.
   3. **Responsive Design:** The frontend is designed to be responsive for better user experience.

Conclusion

The Gym Management System is a robust and comprehensive solution designed to efficiently manage various aspects of gym operations, including member details, payments, trainers, workout schedules, and class bookings. By leveraging modern technologies such as Node.js, Express.js, MySQL, HTML, and CSS, this project ensures smooth interaction between the database and the user interface.

With the inclusion of advanced database management features like triggers, stored procedures, and views, the system guarantees data integrity and reduces manual intervention. Furthermore, the dynamic and user-friendly frontend provides an intuitive experience for users, enabling them to access key functionalities such as viewing active memberships, trainer schedules, and workout schedules effortlessly.

The system not only simplifies gym management but also sets a foundation for future scalability, where additional features like analytics or mobile app integration can be incorporated. It represents a step towards digitizing gym operations and enhancing overall management efficiency.