**Case Study: Gym Membership Management System**

**Objective:**

Develop a menu-based console application to assess your proficiency in Core Java, MySQL, and JDBC. The application will simulate a gym membership management system, allowing users to manage members, trainers, and membership plans.

**Functionalities:**

1. **Member Management:**
   * Add a new member
   * View member details
   * Update member information
   * Delete a member
2. **Trainer Management:**
   * Add a new trainer
   * View trainer details
   * Update trainer information
   * Delete a trainer
3. **Membership Plan Management:**
   * Create a new membership plan
   * View plan details
   * Update plan information
   * Delete a membership plan

**Database Schema:**

* **Member Table:**
  + member\_id (Primary Key)
  + name
  + email
  + phone\_number
  + address
* **Trainer Table:**
  + trainer\_id (Primary Key)
  + name
  + email
  + phone\_number
  + speciality
* **Membership Plan Table:**
  + plan\_id (Primary Key)
  + name
  + duration\_months
  + price\_per\_month

**Requirements:**

* Develop a menu-based console application using Core Java.
* Use JDBC for interactions with the MySQL database.
* Implement menu options for managing members, trainers, and membership plans.
* Handle membership plan expiration and renewal.
* Calculate membership fees based on the selected plan and duration.
* Handle exceptions effectively and provide user-friendly error messages.
* Ensure the application code is clean, well-documented, and follows standard coding conventions.

**Submission:**

* Submit the complete source code along with a README file that provides setup and usage instructions.
* Share your project by uploading it to a public GitHub repository.
* Provide the link to the GitHub repository to the coaches.