**Spring 2024**

**Database Lab**

**Final Term Project**



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| **Project:** | **Gym Management System** |
| **Phase:** | **1** |
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| **Project** | **Gym Management System** |
| **Phase** | **1** |

1. **Description**

The Gym Management System is designed to simplify and optimize gym operations. This system will help gym staff to manage various tasks including registering new members, class schedules, track trainer schedules, monitoring gym equipment, handling member payment and collecting feedback from members. By automating these operations, the Gym Management System can improve service for both staff and members.

The primary goal of this system is to reduce manual effort. When someone wants to join the gym, the system stores his/her information. This includes their contact details and the type of membership they choose. The system tracks their membership status and allows them to book fitness classes.

The system also consists of trainer’s schedules, which ensure that the right trainers are assigned to the right classes. This maintains a structured timetable for all the classes. Gym members can easily book their slots easily by viewing class schedules.

The system keeps track of gym equipment. It monitors the condition and quantity of all the equipment. In case of any equipment being lost the system will update it. On the other hand, the system records the payments of members which they pay for their membership. The system generates reports on payments.

Finally, members can rate their experiences with trainers and classes through feedback features. Due to which the gym management can improve their service. The members can give feedback on whether they are satisfied with the gym or not. The gym’s management can ensure high quality service if members are not satisfied.

In summary, the Gym Management System is designed to handle all activities of gym management system, from member registration to class scheduling, equipment tracking, payment processing, and feedback collection. The main thing it will reduces the administrative workload and provide a better experience for everyone.

1. **Procedure & flow of system**

The flow of system is as follow:

1. **Member registration and management**

* New gym members fills the form with their personal details.
* The system stores this detail into a database and assigns a unique value to the member.
* Members select a membership plan such as basic or premium.

1. **Class scheduling and management**

* Gym administrators create and schedule gym classes.
* Class details consist of class name, duration, and time.
* Gym members view and book these classes online.

1. **Trainer management**

* Trainer’s profiles consist of their specialization and class schedules.
* Professional trainers are available for premium members.
* Junior trainers are available for basic members.

1. **Equipment management**

* The system tracks the condition of equipment.
* The system will update the gym management in case missing of any equipment.

1. **Payments processing**

* The system records the payments of members for membership.
* The system creates the receipt of those members’ payments.

1. **Feedback collection**

* Members give feedback on trainers and classes
* System stores these feedback and administrator review them
* Improvements can be done on feedback

1. **Entities (10 entities)**

* Member
* Trainer
* Membership
* Class
* Equipment
* Attendance
* Payments
* Feedback
* Staff
* Supplier

1. **Attributes**
2. **Member**

* memberID (Int primary key)
* firstName (Varchar)
* lastName (Varchar)
* Dob (Date)
* gender (Varchar)
* contactNumber (Varchar)
* email (Varchar)
* address (Varchar)
* membershipID (Int foreign key)

1. **Membership**

* membershipID (Int, Primary key)
* membershipType (Varchar)
* startDate (Date)
* endDate (Date)
* price (Decimal)

1. **Trainer**

* trainerID (Int, Primary key)
* firstName (Varchar)
* lastName (Varchar)
* specialization (Varchar)
* contactNumber (Varchar)
* email (Varchar)

1. **Class**

* classID (Int, Primary key)
* className (Varchar)
* schedule (Datetime)
* duration (Int)
* trainerID (Int, Foreign key)

1. **Equipment**

* equipmentID (Int, Primary key)
* equipmentName (Varchar)
* quantity (Int)
* condition (Varchar)
* maintenanceSchedule (Date)

1. **Attendance**

* attendanceID (Int, Primary key)
* memberID (Int, Foreign key)
* classID (Int, Foreign key)
* attendanceDate (Date)

1. **Payment**

* paymentID (Int, Primary key)
* memberID (Int, Foreign key)
* amount (Decimal)
* paymentDate (Date)
* paymentMethod (Varchar)

1. **Feedback**

* feedbackID (Int, Primary key)
* memberID (Int, Foreign key)
* trainerID (Int, Foreign key)
* classID (Int, Foreign key)
* rating (Int)

1. **Staff**

* staffID (Int, primary key)
* firstName (Varchar)
* lastName (Varchar)
* Role (Varchar)
* contactNumber (Varchar)
* email (Varchar)

1. **Supplier**

* supplierID (Int, Primary key)
* supplierName (Varchar)
* contactNumber (Varchar)
* supplies (Varchar)

1. **Relationship among entities**
2. **Member to membership**

* One to many relation
* One membership plan can be taken by multiple customers

1. **Member to attendance**

* One to many relation
* Multiple attendance records consist of one member

1. **Member to payment**

* One to many relation
* Many payments can be made by one member.

1. **Member to feedback**

* One to many relation
* One member can give multiple feedback.

1. **Trainer to class**

* One to many relation
* Many classes can be conducted by one trainer

1. **Trainer to feedback**

* One to many relation
* One trainer can receive a lot of feedback

1. **Class to attendance**

* One to many
* One class has many attendance entries.

1. **Supplier to equipment**

* One to many
* One supplier can deliver a lot of equipment.