جامعة أم القرى
UMM AL-QURA UNIVERSITY

GYM Database

Group Members	Students ID	section
Rose Khalid Sheariya	445002125	3
Dana Khalid	445000524	3
Norah Hatim Al-sallumi	445003731	3

Supervised By:

Dr. Amjad Gamlo

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Introduction

In today's fast-paced world, fitness and wellness have become paramount, leading to an increased demand for effective management of gym facilities. A gym database serves as a crucial tool for managing various aspects of a fitness center, including member information, class schedules, equipment inventory, and financial transactions. By implementing a robust database system, gym owners can streamline operations, enhance customer service, and make informed decisions based on data analytics. This project aims to design and develop a comprehensive gym database that not only meets the operational needs of the facility but also provides insights into member engagement and fitness trends.

Description of the organisation

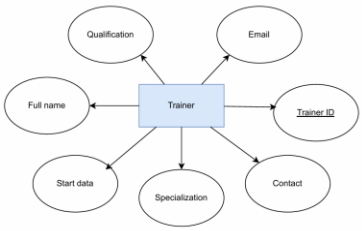
GYM database description:

- The gym is organized into various sections
- Each section has a *unique* name, *unique* number and a Section ID
- Each section is managed by a specific trainer, so we need a trainer ID
- Each section may have *several* locations
- Every section in the gym needs a Trainer
- Each trainer may have Full Name, Trainer ID, Specialization, Contact Number, Email, Qualifications
- We store details for each member
- Each member has a *unique* member ID
- Member details include Full Name, Gender, Birth Date, Address, Membership, Start Date, Personal Trainer ID
- Each member can *enroll* in multiple classes
- Each class may have *unique* class IDs, Name, Schedule, Trainer ID, Capacity
- We keep track of each member's attendance
- Attendance records include the date and time of each class attended, class ID, Member ID

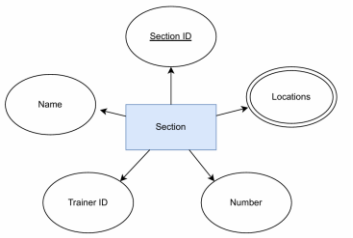
Entities and Attributes

According to the description, we can identify five entities with their attributes:

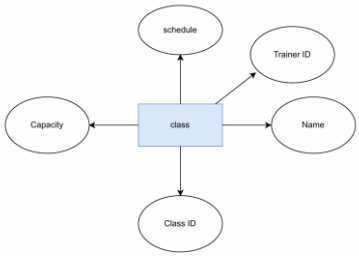
1. **Trainer** with attributes Trainer ID, Full Name, Specialization, Start Date, Contact, Email, Qualification
   Trainer ID is a primary key attribute



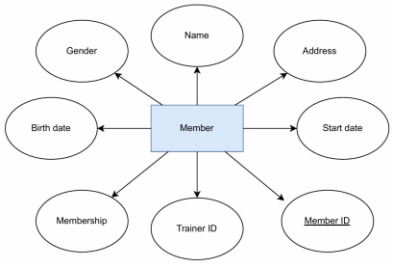
2. **Section** with attributes Section ID, Name, Trainer ID (Foreign Key)
   Section ID is a primary key attribute



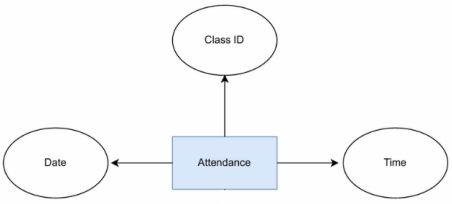
3. **Class** with attributes Class ID, Name, Schedule, Capacity, Trainer ID (Foreign Key)
   Class ID is a primary key attribute



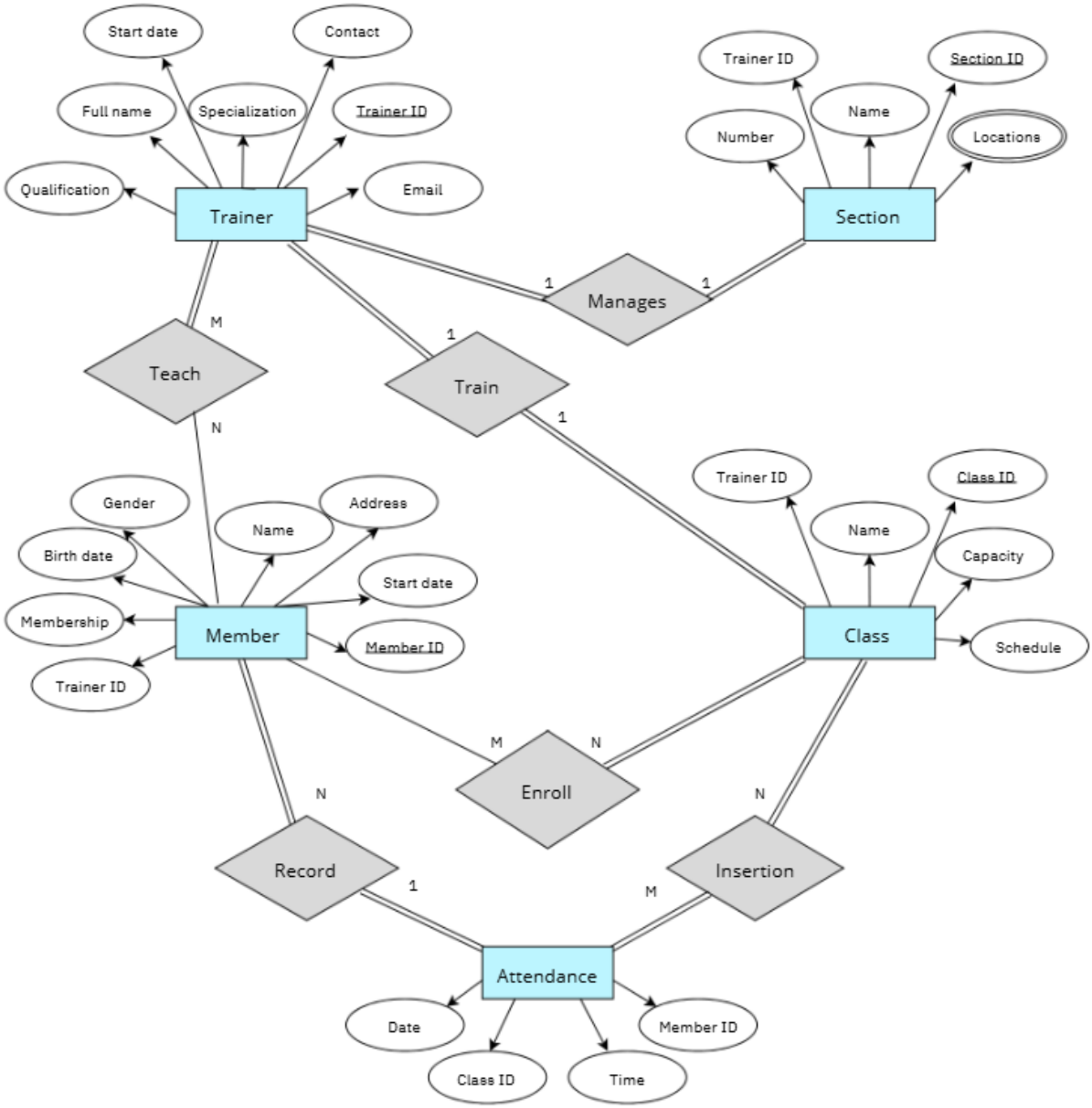
4. **Member** with attributes Member ID, Name, Section ID (Foreign Key), Start Date, Birth Date, Gender, Address, Membership, Trainer ID (Foreign Key)
   Member ID is a primary key attribute



5. **Attendance** with attributes Member ID (Foreign Key), Class ID (Foreign Key), Date, Time



Entity Relationship Diagram (ERD)



Relationships

1. Trainer - Section
Relation: A Trainer manages a single Section.
Cardinality: One Trainer to one Section (1:1).

2. Trainer - Member
Relation: Trainers can have multiple Members to teach.
Cardinality: Multiple Trainers to Many Members(M:N).

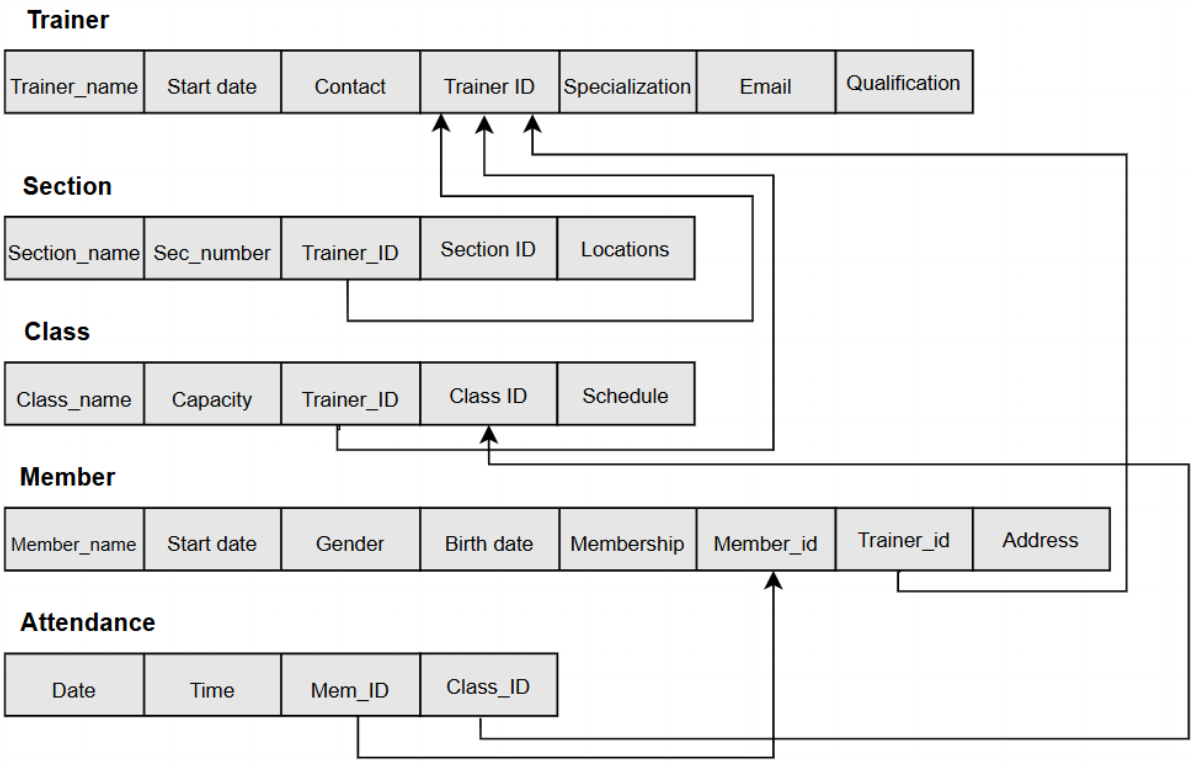
3. Member - Class
Relation: Every member can join more than one Class.
Cardinality: Many members to many classes (M:N).

4. Trainer - Class
Relation: A Trainer teaches one Class.
Cardinality: One Trainer to one Class (1:1).

5. Class - Attendance
Relation: Every Class can have multiple Attendance records.
Cardinality: Many Classes to Many Attendance records (M:N).

6. Member - Attendance
Relation: All the Members should have one Attendance record for different Classes.
Cardinality: Many Members to one Attendance record (N:1).

GYM database schema design



Conclusion

In conclusion, the development of a gym database is essential for modern fitness centers striving for efficiency and customer satisfaction. By centralizing data management, the database enables gym owners to track memberships, monitor attendance, and optimize resource allocation effectively. The insights gained from the database can drive strategic decisions, improve member retention, and enhance the overall gym experience. As the fitness industry continues to evolve, investing in a well-structured database will be a key factor in maintaining competitiveness and ensuring long-term success.