

**ERD Conceptual Design**  
**COMP 3005 - Project Version 2**

**GitHub Repository Link:** <https://github.com/SaadSheikh02/FitnessCentreProgramProject>

**YouTube Link to Project demo video:** <https://youtu.be/qBTgvR2aavQ>

**Entities:**

**Profile:**

Any user with login information will have an entry in the profile table. So members, trainers, and administration staff will all also have profile entries. Profiles store the basic information that any sort of account needs, like names, usernames, passwords, etc.

**Member:**

Users registering a new account from the program itself will always be of member type. These types of users will have all the information regarding their health, goals, and deadlines to achieve these goals.

**Trainer:**

Trainers are users that deal in a more managerial role in classes. They could be assigned to any class by an admin user as long as they are available in the time the class is hosted. Trainers may manage their times of availability as well as view any member's profile.

**Admin:**

Admin staff users can add, cancel, and view all the bookings of rooms as well as classes available. In addition, they can view all the equipment in any room, as well as update their statuses if any of them need maintenance. They could also view bills billed to the members.

**Classes:**

Classes are entities where trainers can be assigned to members for the purpose of completing an event. They can be split into 2 types; Individual training sessions and group training sessions. The main difference is that individual training sessions only host 1 member, while group training sessions can host a variable number of members.

**Rooms:**

Rooms are areas where bookings can happen. Rooms can be booked for classes as well as any sort of event in general like birthdays.

**Equipment:**

Multiple pieces of equipment can be found in each room. Each equipment has its own id that can be tracked, as well as their status. Admins can update these statuses if the equipment needs maintenance.

Date\_Trainer\_Available:

Entries are ranges of time that dictate times of availability for a trainer. Classes can only be assigned to trainers when the date requested is within these ranges for the specified trainer.

Date\_Trainer\_Unavailable:

Entries are singular dates and times that offer exceptions to the available ranges of time. If a class happens on these times, even if they were in times of availability, trainers could not be assigned to these classes.

Bills:

Everytime a member joins a class, whether it be for individual or group training, they will be billed. These bills can then be viewed by admin members.

**Relationships:** (LEGEND: **CARDINALITY**, **PARTICIPATION TYPES**)

Member is\_a Profile:

1 member account may only have 1 profile

1 profile can be made for 1 member

All members have a profile

Some profiles are for members

Trainer is\_a Profile:

1 trainer account may only have 1 profile

1 profile can be made for 1 trainer

All trainers have a profile

Some profiles are for trainers

Admin is\_a Profile:

1 admin account may only have 1 profile

1 profile can be made for 1 admin

All admin have a profile

Some profiles are for admin

Member booking Classes:

Each member may book multiple classes

A class may only be booked by 1 member

Some members may have booked classes  
Not all classes are booked by members

Classes booked\_in Rooms:

Each class can only be hosted in 1 room  
Each room can have N classes hosted in it  
Not all class need room bookings  
Not all rooms have classes booked in them

Rooms have equipment:

Each room can have N amount of equipment  
Each piece of equipment can only be in 1 room  
Not all rooms have equipment in them  
All equipment is hosted in some room

Trainer schedules Dates\_Trainer\_Available:

Each trainer can have multiple times of availability  
Each entry for times of availability is only linked to 1 trainer  
Not all trainers will have times of availability  
All times of availability are attributed to a trainer

Trainer schedules Dates\_Trainer\_Unavailable:

Each trainer can have multiple times of unavailability  
Each entry for times of unavailability is only linked to 1 trainer  
Not all trainers will have times of unavailability  
All times of unavailability are attributed to a trainer

Admin Tracks Bills:

Each admin can view multiple bills  
Each bill can be tracked by multiple admins  
All admins can track bills  
All bills can be tracked by admins