Requirement	Assumption	Representation in ER Model	Representation in Database Schema
Members should be able to register and manage their profiles, establish personal fitness goals (you can determine suitable fitness goals such as weight and time, and members will set the values), and input health metrics.	**N/A**	**Member Entity:** Attributes include: Registration ID(PK),Name,Email, Phone Password,Weight, Time,Bone Density,Fat percentage, Exercise routines,Health statistics,Fitness Accomplishments, Schedule	**members table:** Attributes include: RegisterationID(PK), Name,Email,Phone Password,Weight, Time,Bone Density,Fat percentage, Exercise routines,Health statistics,Fitness Accomplishments, Schedule
Members can schedule, reschedule, or cancel personal **training sessions with certified Trainers. Trainers should have the ability to manage their schedules and view member profiles. Trainer Functions**	**N/A**	**Trainer Entity:** Attributes include: TrainerID(PK) Name(FK),Email, Password,Schedule	**Trainer table:** Attributes include: TrainerID(PK) Name(FK),Email, Password,Schedule
Administrative Staff should be equipped with features to overlook admin tasks.	N/A	**Administrative staff Entity:** Attributes include: AdminID(PK) Name,Email, Duty,	**Administrative staff Entity:** Attributes include: AdminID(PK) Name,Email, Duty,
process payments for membership fees, personal training sessions,	N/A	**Payment Entity:** Attributes include: BillingID(PK), RegistrationID(FK), Amount,payment date,services,status.	**Payment Entity:** Attributes include: BillingID(PK), RegistrationID(FK), Amount,payment date,services,status.

and other services.			
Equipment Maintenance Monitoring which is a part of administrative functions	N/A	**Equipment Entity:** Attributes include: equipmentID(PK), Equipment type,last maintenance date,maintenance due	**Equipment Entity:** Attributes include: equipmentID(PK), Equipment type,last maintenance date,maintenance due
Room Booking Management which is a part of administrative functions	N/A	**Room Entity:** Attributes include: RoomNumber(PK), Capacity,availability status	**Room Entity:** Attributes include: RoomNumber(PK), Capacity,availability status,ID(FK),Time
Members should be able to register for group fitness classes.	N/A	**Fitness Classes Entity:** Attributes include: ID(PK),Name(PK),Time,Date	**Fitness Classes Entity:** Attributes include: ID(PK),Name(PK),Time,Date, TrainerID(FK)
Members can schedule, reschedule, or cancel personal training sessions with certified trainers.	Not all members schedule personal training sessions and not all trainers are personal trainers; some can only be teaching fitness classes. One trainer can be training N members at a time but a member is trained only by one trainer at a time.	**Trains is a N:1 relationship.** b/w member and trainer and it has the **following attributes** date,time,duration	**Trains table** it has the **following attributes** registration ID(FK),trainerID(FK) date,time,duration
Members should be able to register for group fitness classes.	Not all members join a fitness class but a fitness class always has members. A fitness class can have N members and a member can join M different classes.	**Joins is a M:N relationship.** b/w member and fitness class.	Joins table is a M:N relationship b/w member and fitness class It has the **following attributes:** ID(FK), registration ID(FK).
A trainer leads a fitness class	A fitness class is only taught by one trainer but trainer	**Teaches is a N:1 relationship.** b/w and fitness class.	

	can teach N classes at a time. All fitness classes are taught by a trainer but not all trainers teach a fitness class.		
Room booking management for classes	A fitness class can book only one room but a particular room can be booked by N fitness classes . All fitness classes have a room but not all rooms are booked by fitness classes.	**Booked is a N:1 relationship b/w** room and fitness classes. It's attribute is time.	N/A
Administrative Staff should be equipped with features oversee billing, and process payments for membership fees, personal training sessions, and other services.	All members make a payment and all payments are played by members.Since a member is paying one payment and a payment is paid by one member it is a one to one relation.	**Billing is a 1:1 relationship b/w** a member and a payment.	N/A