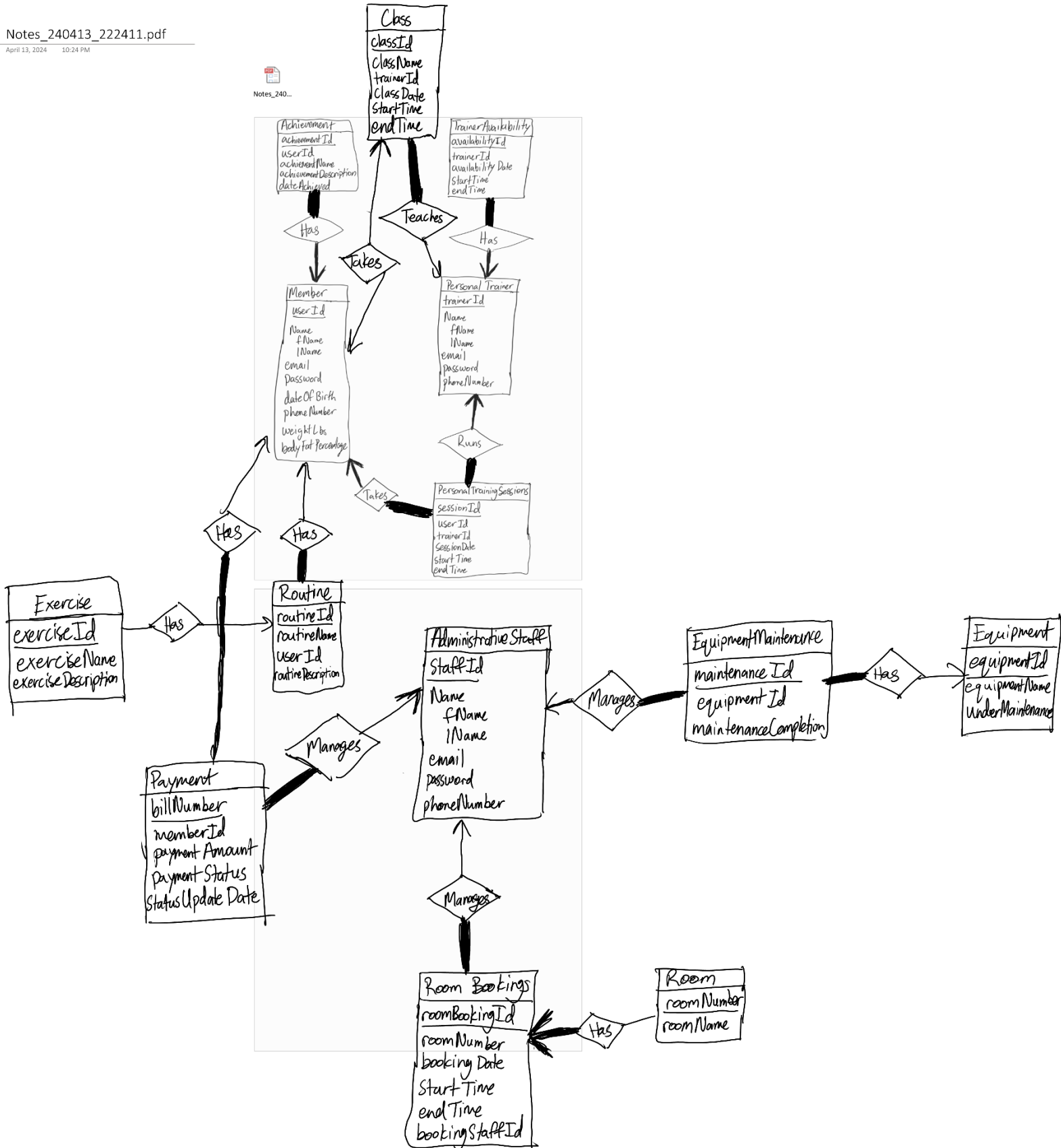# Project Report

Conceptual Design

The assumptions made in the ER diagram are the following:

- A member can have many achievements, but each achievement is associated with a member. Also it is not necessary for each member to have achievement(s).
- A trainer can have multiple availability, but each availability is associated with a trainer. Also it is not necessary for each trainer to have availability.
- A personal trainer can teach many classes, but each class is taught by exactly 1 personal trainer. It is also not necessary for each personal trainer to teach a class.
- A personal trainer can run many personal training sessions, but each session is ran by exactly 1 personal trainer. It is also not necessary for each personal trainer to have a session. This session must also be associated with a member.
- A routine consists of multiple exercises. There may be exercises that are not associated with any routines, and there may be some routines that do not have any exercises. The routine is associated with exactly one member, and a member can have many routines.
- All payment is managed by administrative staff, we may have administrative staff that do not have any payment management associated with them in the system however. Also each payment is associated with exactly one member.
- All equipment maintenance is also managed by administrative staff, and we may have administrative staff that do not mention equipment maintenance. The equipment maintenance also has exactly 1 equipment associated with it, but not each equipment necessarily has an associated equipment maintenance.
- All room bookings are also managed by administrative staff. However not all administrative staff necessarily have a room booking associated with them. A room can have many bookings, but each room booking will be associated with only 1 room.

Class
- classId
- className
- trainerId
- Class Date
- Start Time
- end Time

Achievement
- achievementId
- userId
- achievementName
- achievementDescription
- dateAchieved

Trainer Availability
- availabilityId
- trainerId
- availability Date
- StartTime
- endTime

Has

Teaches

Takes

Has

Member
- userId
- Name
- fName
- lName
- email
- Password
- dateOfBirth
- phoneNumber
- WeightLbs
- body Fat Percentage

Personal Trainer
- trainerId
- Name
- fName
- lName
- email
- password
- phoneNumber

Runs

Takes

Personal Training Sessions
- sessionId
- userId
- trainerId
- SessionDate
- start Time
- end Time

Exercise
- exerciseId
- exerciseName
- exerciseDescription

Has

Routine
- routineId
- routineName
- userId
- routineDescription

Has

Has

Manages

Administrative Staff
- StaffId
- Name
- fName
- lName
- email
- password
- phoneNumber

Manages

Equipment Maintenance
- maintenanceId
- equipmentId
- maintenanceCompletion

Has

Equipment
- equipmentId
- equipmentName
- UnderMaintenance

Payment
- billNumber
- memberId
- payment Amount
- Payment Status
- StatusUpdate Date

Manages

Room Bookings
- roomBookingId
- roomNumber
- booking Date
- Start Time
- endTime
- bookingStaffId

Has

Room
- roomNumber
- roomName

Reduction to Relation Schemas

Member

userId	fName	lName	email	password	date Of Birth	phoneNumber	weightLbs	bodyFatPercentage

Personal Trainer

trainerId	fName	lName	email	password	phoneNumber

Personal Training Session

sessionId	sessionDate	startTime	endTime	trainerId	userId

Administrative Staff

staffId	fName	lName	email	password	phoneNumber

Equipment

equipmentId	equipmentName	underMaintenance

Equipment Maintenance

maintenanceId	equipmentId	maintenance CompletionDate

Room

roomNumber	roomName

Room Bookings

roomBookingId	roomNumber	bookingDate	startTime	endTime	bookingStaffId

Exercise

exerciseId	exerciseName	exerciseDescription

Routine

routineId	routineName	routineDescription	userId

Routine Exercise Assignment

routineExerciseId	routineId	exerciseId	numSets

Payment

billNumber	memberId	paymentAmount	paymentStatus	statusUpdateDate

Achievement

achievementId	userId	achievementName	achievementDescription	dateAchieved

Trainer Availability

availabilityId	trainerId	availabilityDate	startTime	endTime

Class

classId	className	trainerId	classDate	startTime	endTime

Member Takes Class

userId	classId