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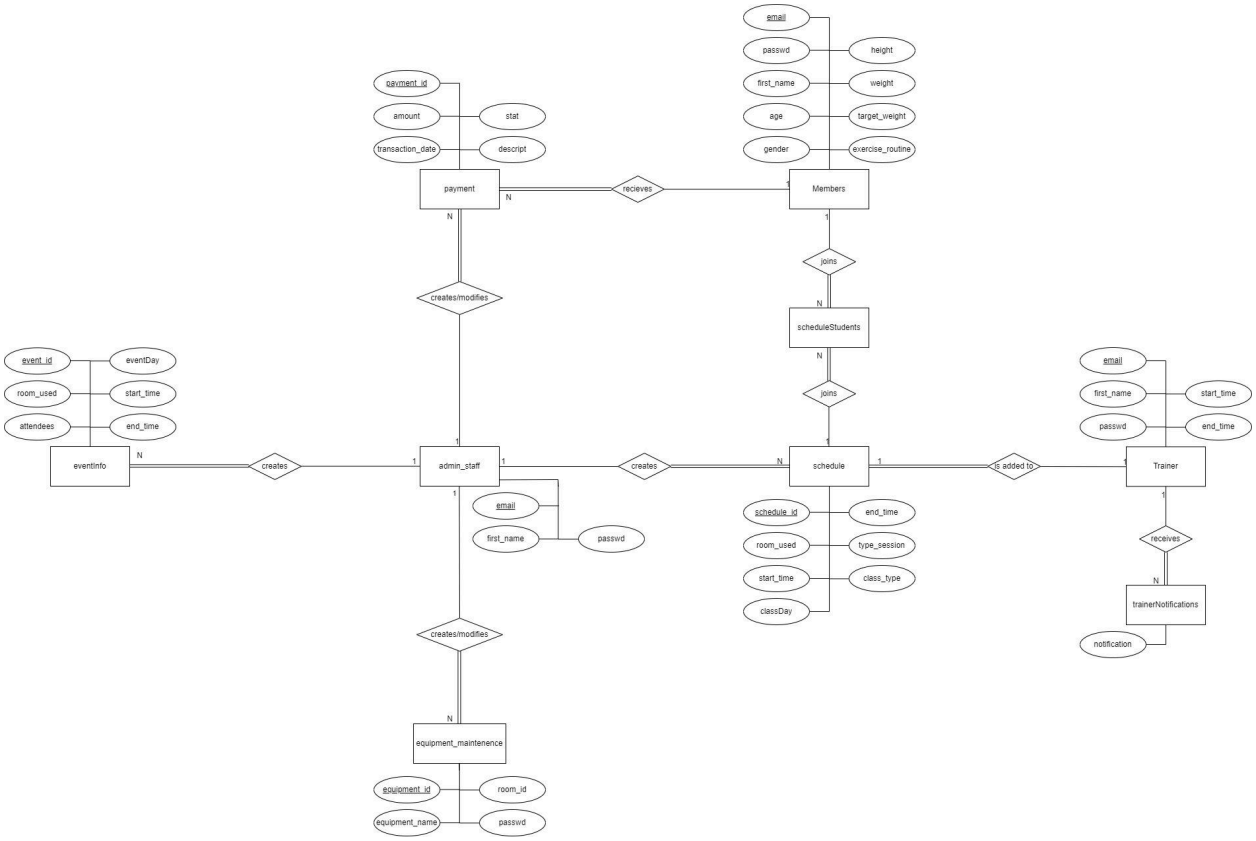
COMP3005
Project Version 2
Group 73

Final Project V2 Report

ER Model



2.1 Conceptual Design

Requirement	Assumptions	Implementation	Representation in ER Model
Member:	-	-	-
User registration	Email is used as primary key as the same email shouldn't be able to sign up twice	addMember() takes in all required information to make a new entry into the members table and inserts it into the table.	Members Entity: Attributes include - Email (PK) - Passwd - First_name - Age - Gender - Height - Weight - Target_weight - Exercise_routine
Profile Management (Updating personal information, fitness goals, health metrics)	N/A	updateMemberInformation() runs "UPDATE VALUE" query to members table to update the member's information	(See previous requirement)
Dashboard Display (Displaying exercise routines, fitness achievements, health statistics)	N/A	printDashboard() runs SELECT statement and returns the member's information from the members table	(See previous requirement)
Schedule Management (Scheduling personal training sessions or group fitness classes. The system must ensure that the trainer is available)	- Members cannot explicitly create schedules themselves, they can only join schedules made by the admin. - If a member enrolls into a personal training session, they have the ability to	joinClass() runs insert query into scheduleStudents. This is a table used to keep track of all the classes the student's enrolled into. checkTrainerAvailability() and rescheduleClass() are used for when a member reschedules a class. This checks to make sure the rescheduling still works	scheduleStudents entity: Attributes include - Schedule_id (FK) - Member_email (FK) Members to scheduleStudents partial to total, one to many participation - Members do not need to be enrolled in any classes - Every scheduleStudents

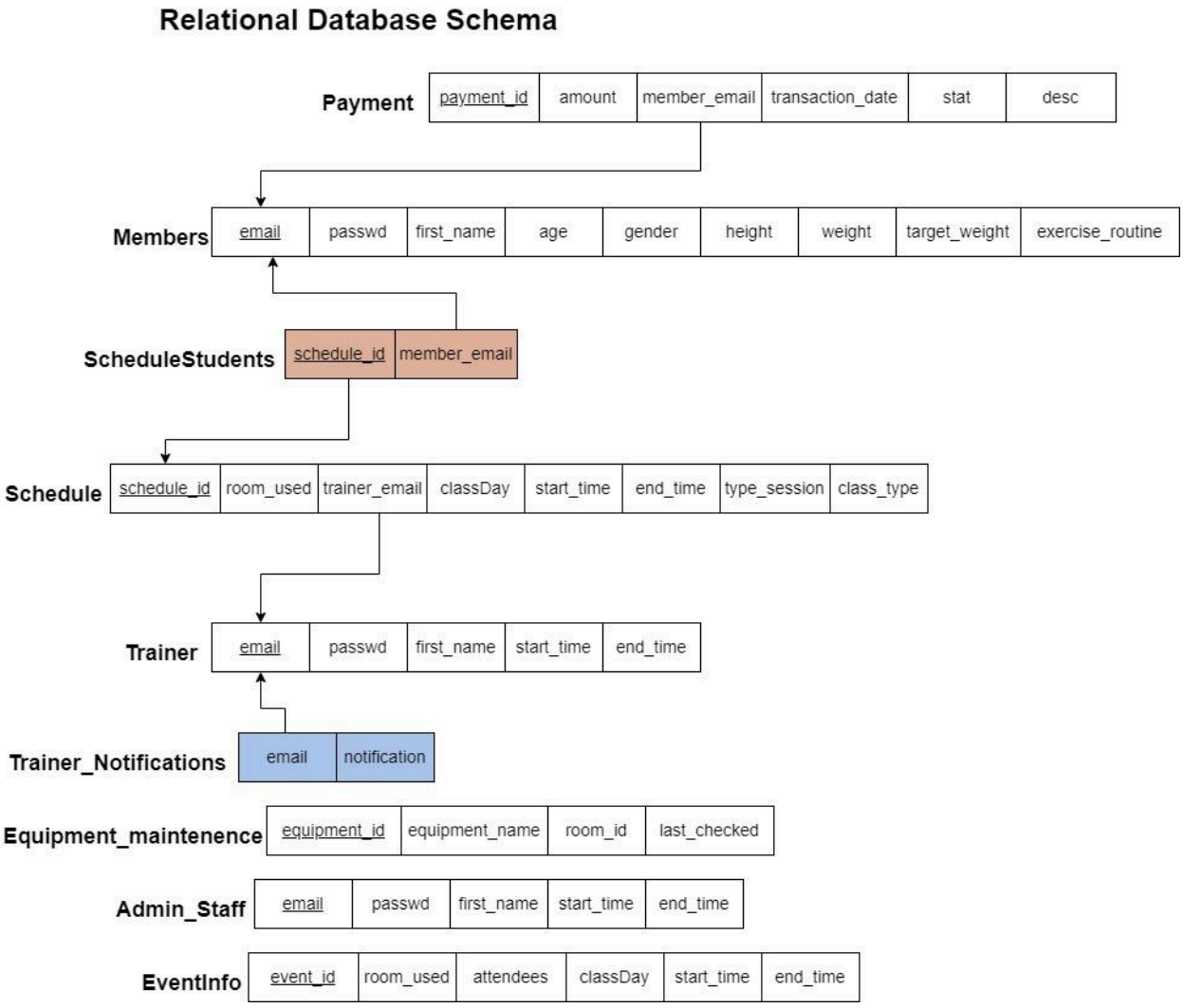
	reschedule that session. - Members cannot reschedule group sessions	for the trainer CancelClass() runs a “DELETE FROM” statement to scheduleStudents	entry must have one associated member - scheduleStudents will have one Member_email FK from members - scheduleStudents will have one schedule_id FK from schedule
Trainer:	**-**	**-**	**-**
Schedule Management (Trainer can set the time for which they are available.)	Trainers do not make their own schedules. They can only set their availability and then admin creates their schedule If a trainer is already scheduled for a class and they try changing their availability in a way that overlaps a class, their availability change will be denied	setAvailability() updates the start_time and end_time of the trainer	Trainer entity: Attributes include - Email (PK) - Passwd - First_name - Start_time - End_time
Member Profile Viewing (Search by Member’s name)	N/A	getMember() function runs SELECT statement from members table	
Admin Staff:	**-**	**-**	Admin_staff entity: Attributes include - Email (PK) - Passwd - First_name
Room Booking Management	N/A	roomBooking() function checks to make sure	eventInfo entity: Attributes include

		the desired room booking doesn't overlap with other schedules then inserts into eventInfo table staffCancelRoomBooking() deletes a room booking modifyRoomBooking() changes an event's start and end time and checks to make sure the new time doesn't collide with other schedules	- Event_id (PK) - room_used - Attendees - eventDay - Start_time - End_time Admin_staff to eventInfo partial to total, one to many participation - Admin_staff do not need to create any events - Every event can only be scheduled by an admin - Admins can create multiple events
Equipment Maintenance Monitoring	N/A	equipmentMaintenenceMonitoring() allows a staff to update the last_checked date of the equipment to the curr ent day	equipment_maintenence entity: Attributes include - equipment_id (PK) - equipment_name - room_id - last_checked Admin_staff to equipment_maintenence partial to total, one to many participation - Admin_staff do not need to create/modify equipment - Equipment must be monitored by an admin - Admin can create/modify multiple pieces of equipment
Class Schedule Updating	N/A	classScheduling() creates classes assigned to trainers that members can join.	Schedule entity: Attributes include - schedule_id(PK) - room_used

		This function checks to make sure the trainer is available and the schedule doesn't overlap with anything else rescheduleClass() are used for when a staff member reschedules a class. This also checks to make sure the rescheduling still works for the trainer staffCancelClass() deletes a session from the schedule table and deletes all scheduleStudent entries associated with the class.	- Trainer_email (FK) - classDay - Start_time - End_time - Type_session - Class_type Admin_staff to Schedule partial to total, one to many participation - Admin_staff do not need to create/modify sessions - Sessions must be created by an admin - Admin can create/modify multiple sessions
Billing and Payment Processing	Admin staff will have to bill all members manually.	createPayment() inserts into the payment table with the filled in information changePaymentStatus() changes the stat property of the payment	Payment entity: Attributes include - payment_id(PK) - amount - Member_email (FK) - transaction_date - Stat - Descript Admin_staff to payment partial to total, one to many participation - Admin_staff do not need to create/modify payments - Payments must be created by an admin - Admin can create/modify multiple payments Member to payment partial to total, one to many participation

			- Members do not need to receive payments - Payments must be directed to a member - A member can receive multiple payments

2.2 Reduction to Relation Schemas



2.3 DDL File
File found under SQL folder in the project GitHub as DDL.sql

2.4 DML File
File found under SQL folder in the project GitHub as DML.sql

2.5 Implementation
See GitHub

2.6 Bonus Features:

- Implemented a web application using Dash in Python
- Implemented a built in BMI calculator that shows the member whether or not they are overweight.
- Implemented a notification system that notifies the trainer when students join or drop their classes, and when their classes are rescheduled.
- Implemented payment system on the member's end - they can see upcoming payments and complete them instead of the admin handling every aspect.
- Implemented filter for the payments - Staff can filter payments by a specific member

2.7 GitHub Repository
https://github.com/Lujain23/COMP3005_FinalProject