

COMP3005 - Final Project: Contributions

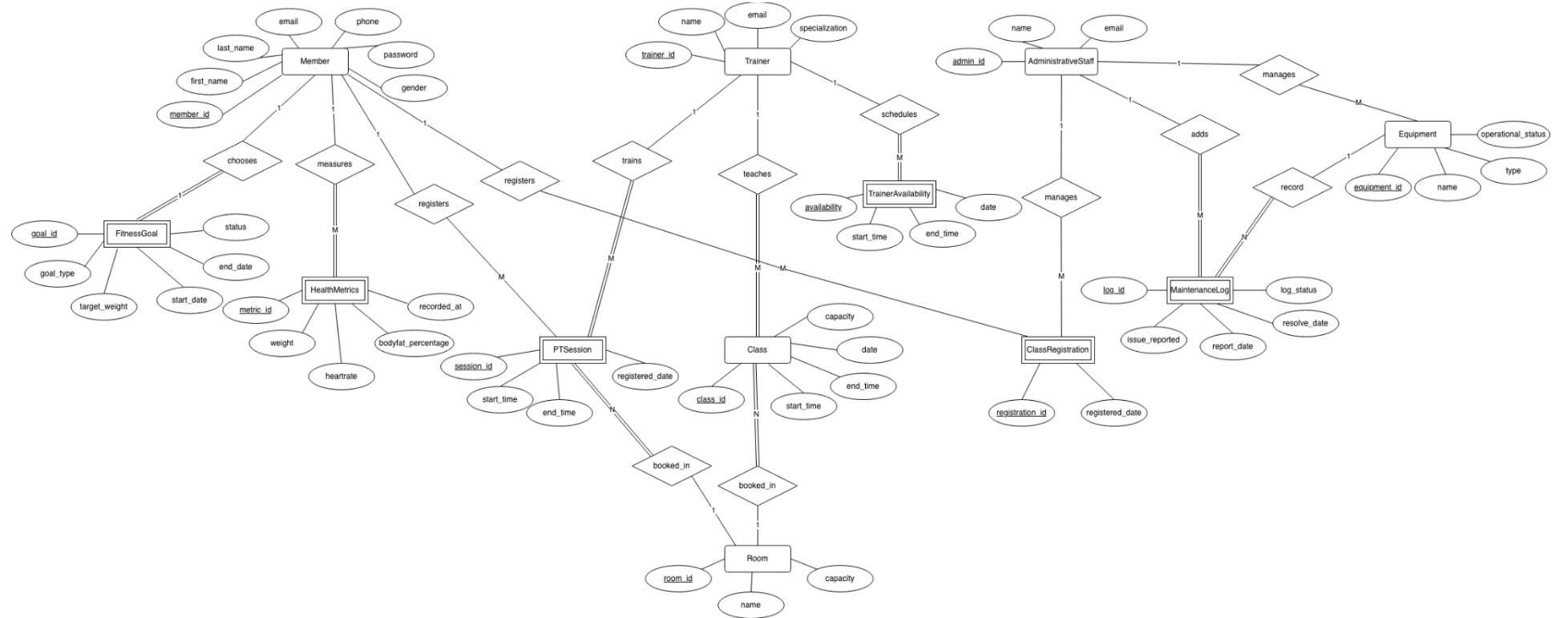
Neelaksh Gupta

- Completed the DDL.sql and DML.sql code
- Completed the Member and Trainer database functions
- Completed the database normalization (explained why our diagram is already normalized)

Celina Yang

- Completed the ER model
- Completed the relational mapping
- Completed the Admin database functions

Dennis Chen



Entities in ER Model	Relationships in ER Model
<p>1. Member Attributes: member_id(PK), first_name, last_name, email(UNIQUE), phone, password, gender</p> <p>Dashboard – view Indexing – member email, this can be used to login in, and for lookup with admin or trainor View → viewing all the classes you are taking/going to take from the members point of view</p>	<ul style="list-style-type: none"> - 1 Member has many FitnessGoals (1-M) - 1 Member has many HealthMetrics (1-M) - 1 Member has many ClassRegistrations (1-M) - 1 Member an register for many PTSessions (1-M)
<p>2. Trainer Attributes: trainer_id (PK), name, email (UNIQUE), specialization</p>	<ul style="list-style-type: none"> - 1 Trainer teaches many Classes (1-M) - 1 Trainer teaches N PTSessions (1-M) - 1 Trainer has many Availability Spots (1-M)
<p>3. Administrative Staff Attributes: admin_id (PK), name, email (UNIQUE)</p>	
<p>4. Room Attributes: room_id (PK), name, capacity</p>	<ul style="list-style-type: none"> - 1 Room hosts many Classes (1-M) - 1 Room hosts many PTSessions (1-M) - 1 Room contains many Equipment (1-M)
<p>5. Class Attributes: class_id (PK), name, trainer_id (FK → trainer), room_id (FK → room), start_time, end_time, date, capacity</p> <p>Trigger Class conflict: a trainer cannot teach two classes at the same time Room conflict: a trainer cannot host two classes at the same time</p>	<ul style="list-style-type: none"> - Each Class has many ClassRegistrations (M-M) - Each Class has 1 Trainer (M-1) - Each Class is in 1 Room (M-1)
<p>6. FitnessGoal Attributes: goal_id (PK), member_id (FK → member), goal_type, target_weight, start_date, end_date, status</p>	<ul style="list-style-type: none"> - Each FitnessGoal belongs to 1 Member (M-1)
<p>7. HealthMetric Attributes: metric_id (PK), member_id (FK → member), weight, heartrate, body_fat_percentage, recorded_at</p>	<ul style="list-style-type: none"> - Each HealthMetric belongs to 1 Member (M-1)
<p>8. ClassRegistration Attributes: registration_id (PK), member_id (FK → member), class_id (FK → class), registered_date</p> <p>View → view all the classes as admin</p>	

<p>9. PTSession Attributes: session_id (PK), member_id (FK → member), room_id (FK → room), trainer_id (FK → trainer), start_time, end_time, date, registered_date</p> <p>Trigger-trainer-overbooking: prevent overbooking a trainer Trigger-room-overbooking: prevent overbooking a room at the same time and day</p>	<ul style="list-style-type: none"> - Each PTSession has 1 Trainer (M-1) - Each PTSession has 1 Member (M-1) - Each PTSession is in 1 Room (M-1)
<p>10. TrainerAvailability Attributes: availability (PK), trainer_id(FK → trainer), start_time, end_time, date</p>	
<p>11. Equipment Attributes: equipment_id (PK), room_id (FK → room), name, type, operational_status</p>	<ul style="list-style-type: none"> - Each Equipment is located in 1 room (M-1)
<p>12: MaintenanceLog Attributes: log_id (PK), equipment_id (FK → equipment), issue_reported, report_date, resolve_date, log_status</p>	<ul style="list-style-type: none"> - Each MaintenanceLog is attached to 1 Equipment (M-1)

Application Operations

Members

1. User Registration: Create a new member with unique email and basic profile info
2. Profile Management: Update personal details, fitness goals (e.g., weight target), and input new health metrics (e.g., weight, heart rate)
3. Health History: Log multiple metric entries; do not overwrite. Must support time-stamped entries
4. Dashboard: Show latest health stats, active goals, past class count, upcoming sessions
5. PT Session Scheduling: Book or reschedule training with a trainer, validating availability and room conflicts
6. Group Class Registration: Register for scheduled classes if capacity permits

Trainers

7. Set Availability: Define time windows when available for sessions or classes. Prevent overlap
8. Schedule View: See assigned PT sessions and classes
9. Member Lookup: Search by name (case-insensitive) and view current goal and last metric. No editing rights

Administrative Staff

10. Room Booking: Assign rooms for sessions or classes. Prevent double-booking
11. Equipment Maintenance: Log issues, track repair status, associate with room/equipment
12. Class Management: Define new classes, assign trainers/rooms/time, update schedules

