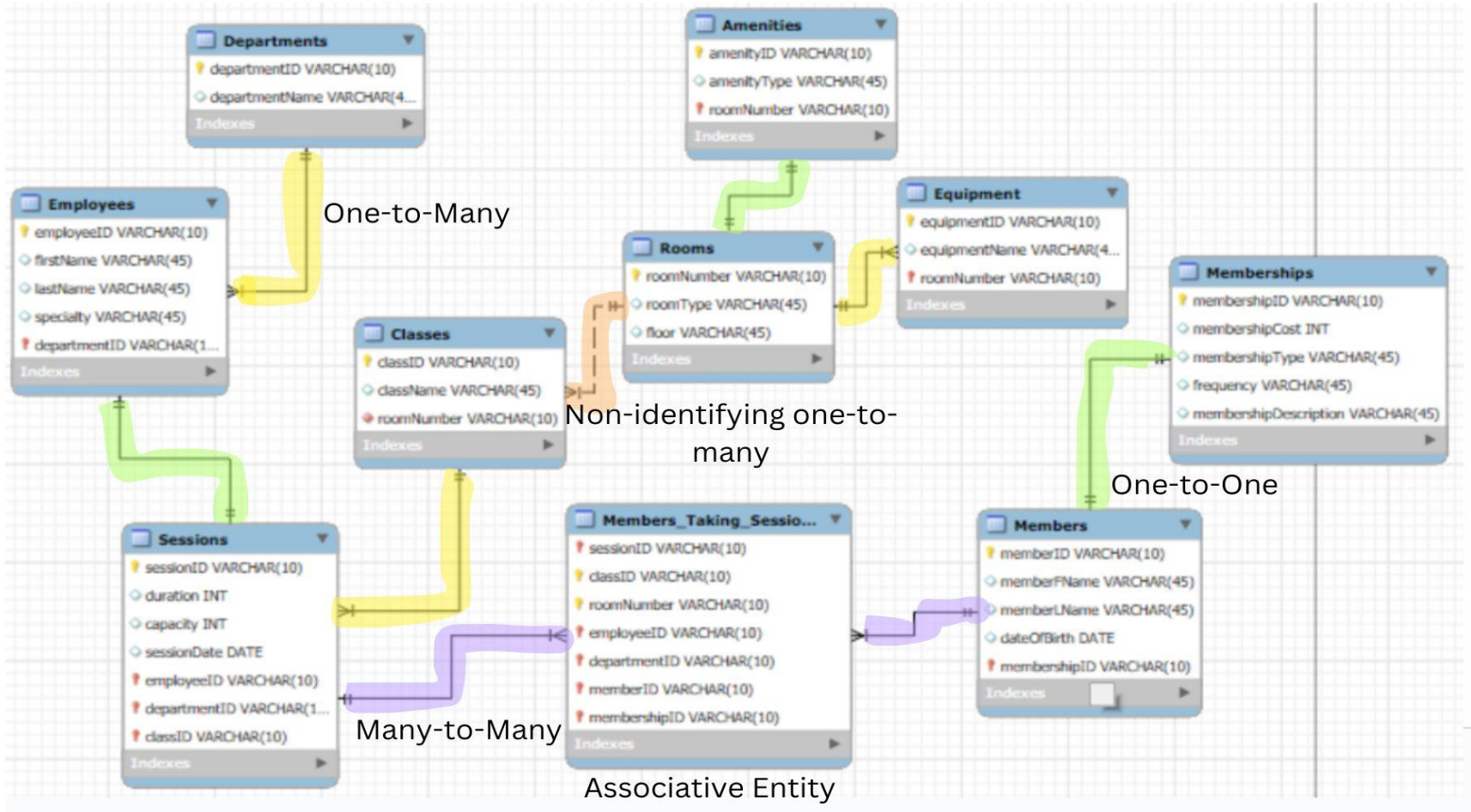# Gym Data Model

Lindsay, Arti, Anish, Jonathan, Omar
Group 4

Purpose of Data Model

- Organize the most important aspects of a gym
- Manage inventory for what's necessary for client use
- Keep track of members and their activity in the gym
- Analyze the frequency of membership use to help with pricing
- Keep track of popular classes, sessions, etc.

Data Model Breakdown

Departments
- departmentID VARCHAR(10)
- departmentName VARCHAR(4...
- Indexes

Amenities
- amenityID VARCHAR(10)
- amenityType VARCHAR(45)
- roomNumber VARCHAR(10)
- Indexes

Employees
- employeeID VARCHAR(10)
- firstName VARCHAR(45)
- lastName VARCHAR(45)
- specialty VARCHAR(45)
- departmentID VARCHAR(1...
- Indexes

One-to-Many

Equipment
- equipmentID VARCHAR(10)
- equipmentName VARCHAR(4...
- roomNumber VARCHAR(10)
- Indexes

Rooms
- roomNumber VARCHAR(10)
- roomType VARCHAR(45)
- floor VARCHAR(45)
- Indexes

Memberships
- membershipID VARCHAR(10)
- membershipCost INT
- membershipType VARCHAR(45)
- frequency VARCHAR(45)
- membershipDescription VARCHAR(45)
- Indexes

Classes
- classID VARCHAR(10)
- className VARCHAR(45)
- roomNumber VARCHAR(10)
- Indexes

Non-identifying one-to-many

One-to-One

Sessions
- sessionID VARCHAR(10)
- duration INT
- capacity INT
- sessionDate DATE
- employeeID VARCHAR(10)
- departmentID VARCHAR(1...
- classID VARCHAR(10)
- Indexes

Members_Taking_Sessio...
- sessionID VARCHAR(10)
- classID VARCHAR(10)
- roomNumber VARCHAR(10)
- employeeID VARCHAR(10)
- departmentID VARCHAR(10)
- memberID VARCHAR(10)
- membershipID VARCHAR(10)
- Indexes

Members
- memberID VARCHAR(10)
- memberFName VARCHAR(45)
- memberLName VARCHAR(45)
- dateOfBirth DATE
- membershipID VARCHAR(10)
- Indexes

Many-to-Many

Associative Entity

Query #1

Answers the Question: Which classes are the most popular?

```
1       #The number of members taking a specific class, finding which class is most popular
2 •     SELECT className, COUNT(DISTINCT(memberID)) AS "Number of members taking class"
3       FROM Classes
4       JOIN Sessions ON Classes.classID = Sessions.classID
5       JOIN Members_Taking_Sessions ON Sessions.sessionID = Members_Taking_Sessions.sessionID
6       GROUP BY className
7       ORDER BY COUNT(DISTINCT(memberID)) DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

className	Number of members taking class
CrossFit	3
Spin Class	3
Basketball	2
Spin	2
Weightlifting	2
Strength Training	1
Yoga and Stretch	1
Zumba	1

Query #2

Answers the Question: What classes are longer than the average session duration, and how many of those classes are offered?

```
21      #The number of classes that are above the average class duration
22  •   SELECT COUNT(duration) AS "Number of sessions over average", className, AVG(duration) AS "Average session duration"
23      (SELECT AVG(duration) FROM Sessions) AS "Average duration of all sessions"
24      FROM Sessions
25      JOIN Classes ON Sessions.classID = Classes.classID
26      WHERE duration > (SELECT AVG(duration) FROM Sessions)
27      GROUP BY className;
```

Result Grid | 🔢 | ➡ Filter Rows: [   ] | Export: 🖫 | Wrap Cell Content: ⬚A

Number of sessions over average	className	Averge session duration	Average duration of all sessions
1	Spin Class	50.0000	40.7692
1	Strength Training	60.0000	40.7692
3	CrossFit	61.6667	40.7692
1	Basketball	50.0000	40.7692
1	Zumba	45.0000	40.7692

Query #3

Answers the Question: Which members are not taking any classes?

```sql
1    #Finds which members are not taking any classes
2 •  SELECT memberFName, memberLName
3    FROM Members
4    WHERE NOT EXISTS (SELECT memberID FROM Members_Taking_Sessions WHERE Members.memberID = Members_Taking_Sessions.memberID)
5    ORDER BY memberLName;
```

esult Grid | 🔢 | ↔ Filter Rows: [   ] | Export: 🔡 | Wrap Cell Content: ‡A

memberFName	memberLName
Marin	Amori
Cathie	Baudet
Christen	Bille
Barbabas	Claris
Gerard	Francklyn
Kendricks	Hallwell
Adelaide	Highman
Yehudit	Jevons
Karmen	Lared
Brion	Muneely
Gabriel	Sevior
Jacob	White
Nicolette	Willcock
Gran	Zupone