**1️⃣ Entity: Gymnasium**

**Attributes:**

* Gym\_ID *(Primary Key)*
* Name
* Address
* Phone\_Number

**Description:**  
Each gymnasium represents a physical location of the gym chain.

**2️⃣ Entity: Member**

**Attributes:**

* Member\_ID *(Primary Key)*
* Last\_Name
* First\_Name
* Address
* Date\_of\_Birth
* Gender
* Gym\_ID *(Foreign Key → Gymnasium)*

**Description:**  
Members register in **one gymnasium**. Each member’s ID is unique across all gyms.

**3️⃣ Entity: Coach**

**Attributes:**

* Coach\_ID *(Primary Key)*
* Last\_Name
* First\_Name
* Age
* Specialty

**Description:**  
Coaches can work in one or multiple sessions and are responsible for training members.

**4️⃣ Entity: Session**

**Attributes:**

* Session\_ID *(Primary Key)*
* Sport\_Type
* Schedule
* Max\_Members = 20
* Gym\_ID *(Foreign Key → Gymnasium)*

**Description:**  
Each gym offers multiple sessions. A session is a scheduled class of a specific sport and can host up to 20 members.

**5️⃣ Relationship: Registration**

**Between:** Member ↔ Session  
**Cardinality:**

* A Member **can register** for multiple sessions.
* A Session **can have** up to 20 Members.  
  **Type:** Many-to-Many

🟢 This relationship will create a junction table:  
**Registration(Member\_ID, Session\_ID, Registration\_Date)**

**6️⃣ Relationship: Leads**

**Between:** Coach ↔ Session  
**Cardinality:**

* A Session **is led by** 1 or 2 Coaches.
* A Coach **can lead** multiple Sessions.  
  **Type:** Many-to-Many

🟢 This relationship will create another junction table:  
**Leads(Coach\_ID, Session\_ID)**

**7️⃣ Relationship: Owns**

**Between:** Gymnasium ↔ Session  
**Cardinality:**

* A Gymnasium **offers** multiple Sessions.
* A Session **belongs to** one Gymnasium.  
  **Type:** One-to-Many

**🧩 Summary of Relationships**

| **Relationship** | **Entities** | **Type** | **Cardinality** |
| --- | --- | --- | --- |
| Owns | Gymnasium – Session | 1 → N | One gym has many sessions |
| Registers | Member – Session | M ↔ N | A member can attend many sessions, and each session has many members |
| Leads | Coach – Session | M ↔ N | A coach can lead many sessions, and each session has up to two coaches |
| Belongs\_To | Member – Gymnasium | N → 1 | A member belongs to one gym |

**🗺️ Visual ERD (Text Form)**

[Gymnasium]───<offers>───<[Session]>───<led\_by>───<[Coach]>

│ │

│ │

<has> <attended\_by>

│ │

[Member]──────────────────────┘