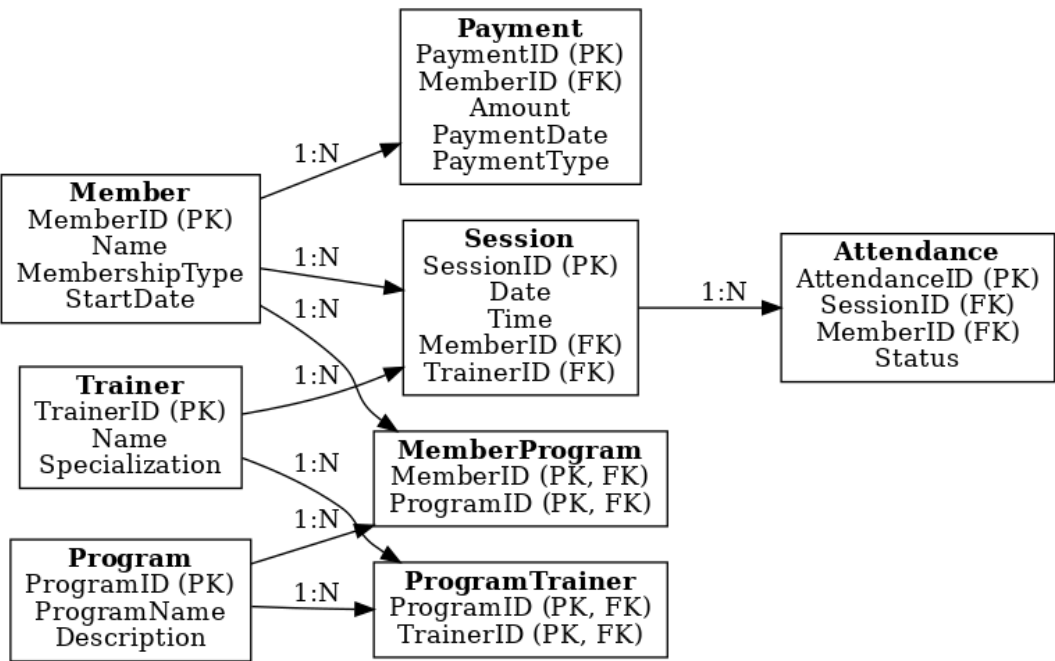


# Entity-Relationship (ER) Diagram Workshop

## Problem A: City Fitness Club Management

FlexiFit Gym wants a database to manage its members, trainers, and fitness programs.

### ER Diagram:



### 1. Entity List

Entity	Attributes
Member	MemberID (PK), Name, MembershipType, StartDate
Program	ProgramID (PK), ProgramName, Description
Trainer	TrainerID (PK), Name, Specialization
Session	SessionID (PK), Date, Time, MemberID (FK), TrainerID (FK)
Attendance	AttendanceID (PK), SessionID (FK), MemberID (FK), Status
Payment	PaymentID (PK), MemberID (FK), Amount, PaymentDate, PaymentType
MemberProgram	MemberID (PK, FK), ProgramID (PK, FK)
ProgramTrainer	ProgramID (PK, FK), TrainerID (PK, FK)

### 2. Primary Keys (PKs)

- MemberID (Member)
- ProgramID (Program)
- TrainerID (Trainer)
- SessionID (Session)
- AttendanceID (Attendance)
- PaymentID (Payment)
- MemberID + ProgramID (MemberProgram, composite PK)
- ProgramID + TrainerID (ProgramTrainer, composite PK)

### 3. Relationships Documentation

- Member ↔ Program → M:N (through MemberProgram)
- Program ↔ Trainer → M:N (through ProgramTrainer)
- Member → Session → 1:N
- Trainer → Session → 1:N
- Session → Attendance → 1:N
- Member → Payment → 1:N

### 4. Assumptions

- Each member must have a valid membership before joining programs.
- A program must exist before assigning trainers to it.
- Personal training sessions are separate from regular program attendance.
- Payments can be for either membership fees or sessions.
- Attendance is only recorded for scheduled sessions.

**Note:** This PDF includes both the ER diagram and supporting documentation.