

**Person(id, first\_name, last\_name)**

- Attribute constraints
  - first\_name NOT NULL
  - last\_name NOT NULL

**Member(id, street\_address1, street\_address2, city, zip, member\_type, relation\_to)**

- Attribute constraints
  - street\_address1 NOT NULL
  - city NOT NULL
  - zip NOT NULL
  - member\_type NOT NULL
- Domain constraints
  - member\_type  $\in \{\text{Undergrad\_Student}, \text{Grad\_Student}, \text{Faculty}, \text{Staff}, \text{Alumni}, \text{Family}\}$
- Inclusion dependencies
  - Member[id]  $\subseteq$  Person[id]
- Other constraints
  - If member\_type = ‘Family’, relation\_to NOT NULL

**Employee(id, designation)**

- Attribute constraints
  - designation NOT NULL
- Domain constraints
  - designation  $\in \{\text{Trainer}, \text{Desk\_Emp}\}$
- Inclusion dependencies
  - Employee[id]  $\subseteq$  Person[id]

**EmployeeShift(shift\_id, emp\_id, work\_day, start\_time, end\_time)**

- Attribute constraints
  - emp\_id NOT NULL
  - work\_day NOT NULL
  - start\_time NOT NULL
  - end\_time NOT NULL
- Domain constraints
  - work\_day  $\in \{\text{Mon}, \text{Tue}, \text{Wed}, \text{Thu}, \text{Fri}, \text{Sat}, \text{Sun}\}$
- Inclusion dependencies
  - EmployeeShift[emp\_id]  $\subseteq$  Employee[id]

**PaymentInfo(member\_id, payment\_ref)**

- Attribute constraints
  - payment\_ref NOT NULL
- Inclusion dependencies
  - PaymentInfo[member\_id]  $\subseteq$  Member[id]

### **Room(id, name, max\_capacity)**

- Attribute constraints
  - name NOT NULL
  - max\_capacity NOT NULL
- Domain constraints
  - name  $\in \{\text{Front\_Desk}', \text{Cardio}', \text{Weight}', \text{Pool}', \text{Yoga}', \text{Basketball\_Court}', \text{Other}'\}$

### **Equipment(id, name, room\_id, in\_use, in\_use\_by)**

- Attribute constraints
  - name NOT NULL
  - room\_id NOT NULL
  - in\_use NOT NULL
- Inclusion dependencies
  - Equipment[room\_id]  $\subseteq$  Room[id]
  - Equipment[in\_use\_by]  $\subseteq$  Member[id]
- Other constraints
  - If in\_use = TRUE, in\_use\_by NOT NULL

### **EntryLog(person\_id, entry\_time)**

- Inclusion dependencies
  - EntryLog[person\_id]  $\subseteq$  Person[id]

### **EmployeeExitLog(emp\_id, entry\_time)**

- Inclusion dependencies
  - EmployeeExitLog[emp\_id]  $\subseteq$  Employee[id]

### **LocationLog(person\_id, room\_id, entry\_time)**

- Inclusion dependencies
  - LocationLog[person\_id]  $\subseteq$  Person[id]
  - LocationLog[room\_id]  $\subseteq$  Room[id]

### **Event(id, name, room\_id, max\_capacity, start\_time, end\_time)**

- Attribute constraints
  - name NOT NULL
  - room\_id NOT NULL
  - max\_capacity NOT NULL
  - start\_time NOT NULL
  - end\_time NOT NULL
- Inclusion dependencies
  - Event[room\_id]  $\subseteq$  Room[id]
- Other constraints
  - The event's maximum capacity must not exceed the associated Room[max\_capacity]

### **EventEnrollment(event\_id, member\_id)**

- Inclusion dependencies
  - $\text{EventEnrollment[event\_id]} \subseteq \text{Event[id]}$
  - $\text{EventEnrollment[member\_id]} \subseteq \text{Member[id]}$
- Other constraints
  - The number of members enrolled in an event must not exceed  $\text{Event[max\_capacity]}$