

# SOEN 342 Project

## Section II

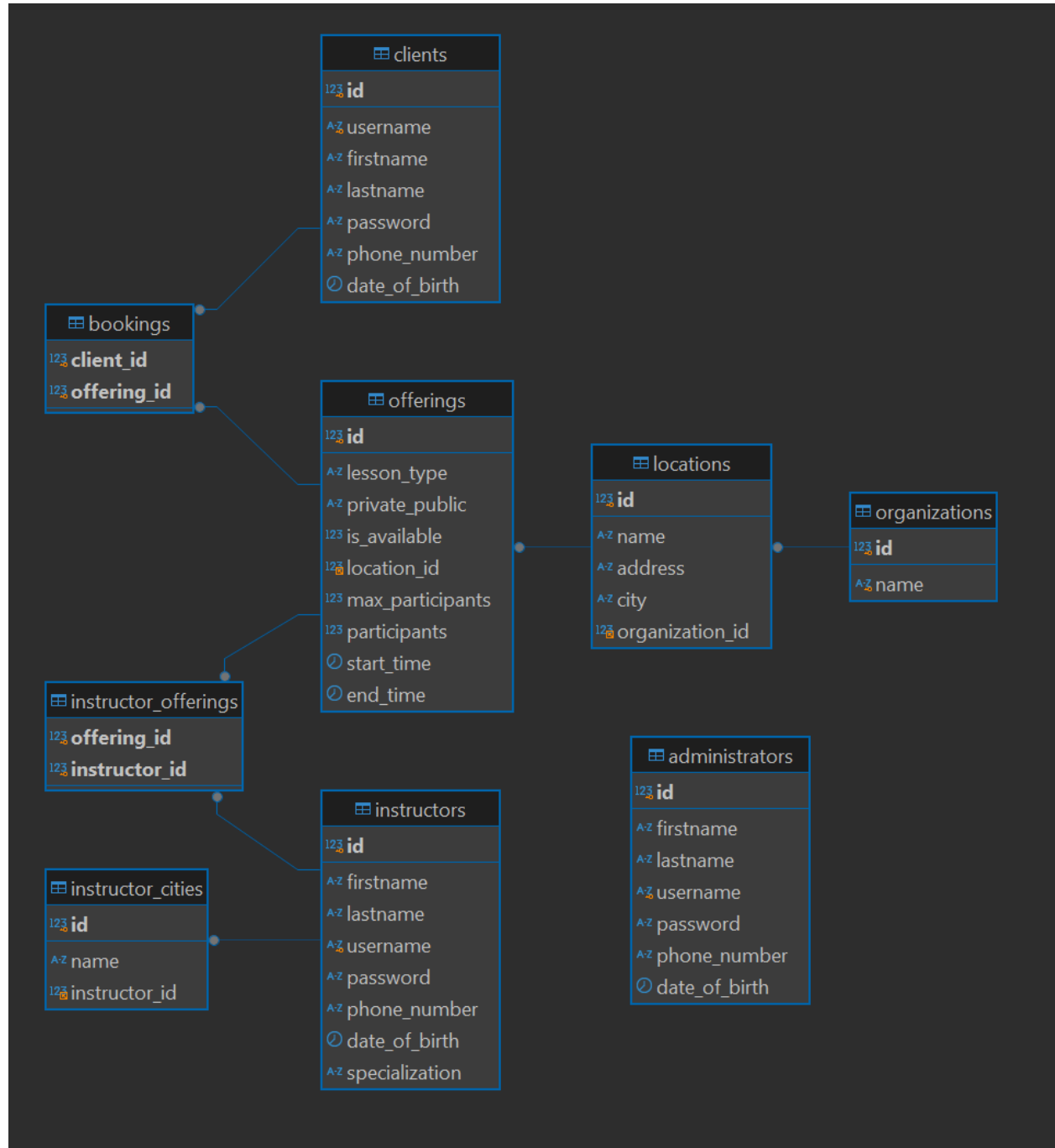
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Iteration #4

# Relational Database Model



# OCL Expressions

**1. “Offerings are unique. In other words, multiple offerings on the same day and time slot must be offered at a different location.”**

context Offering

inv UniqueOfferingsAtSameTime:

```
self.startTime.dayOfYear() <> otherOffering.startTime.dayOfYear() or  
self.startTime <> otherOffering.startTime or  
self.locationId <> otherOffering.locationId implies  
Offering.allInstances()->forAll(otherOffering |  
  self <> otherOffering implies  
    (self.startTime <> otherOffering.startTime or  
     self.endTime <> otherOffering.endTime or  
     self.locationId <> otherOffering.locationId))
```

**2. “Any client who is underage must necessarily be accompanied by an adult who acts as their guardian.”**

context Client

inv UnderageClientHasGuardian:

```
self.isAdult() = false implies  
  self.guardian->notEmpty() and  
  self.guardian->forAll(g | g.isAdult())
```

**3. “The city associated with an offering must be one the city’s that the instructor has indicated in their availabilities.”**

context Offering

inv CityInInstructorAvailability:

```
self.city <> "" and  
self.instructor.availabilities->includes(self.city)
```

**4. “A client does not have multiple bookings on the same day and time slot.” (for simplicity we consider only identical day and time slots, even though in reality a booking on Monday 3pm – 4pm and another also on Monday 3:30pm – 4:30pm should not be acceptable.)**

context Client

inv NoMultipleBookingsOnSameDayAndTimeSlot:

```
self.bookings->forAll(b1, b2 |  
  b1 <> b2 implies  
    (b1.offering.startTime.dayOfYear() <> b2.offering.startTime.dayOfYear() or  
     b1.offering.startTime <> b2.offering.startTime))
```