

OCL Specifications

1- **Requirement:** Multiple offerings on the same day and time slot must be in different locations.

context Offering

inv UniqueOfferings:

Offering.allInstances()->forAll(o1, o2 |

o1 <> o2 implies

(o1.schedule <> o2.schedule or o1.location <> o2.location))

2- **Requirement:** Clients under 18 years old must have an associated guardian.

context Client

inv UnderageMustHaveGuardian:

self.age < 18 implies self.guardian->notEmpty()

3- **Requirement:** An instructor can only be assigned to offerings in cities they have indicated availability.

context Offering

inv InstructorLocationRestriction:

self.instructor.availableCities->includes(self.location.city)

4- **Requirement:** A client cannot have multiple bookings that overlap in time.

context Client

inv NoOverlappingBookings:

self.bookings->forAll(b1, b2 |

b1 <> b2 implies b1.offering.schedule->excludesAll(b2.offering.schedule))

5- **Requirement:** A booking can only be created for an offering that is marked as available.

context Booking

pre OfferingMustBeAvailable:

self.offering.status = 'available'

6- **Requirement:** Each instructor must have a unique phone number.

context Instructor

inv UniqueInstructor:

Instructor.allInstances()->forAll(i1, i2 |

i1 <> i2 implies i1.phoneNumber <> i2.phoneNumber)

7- **Requirement:** An offering can only be assigned to a location that exists in the system.

context Offering

inv ValidLocation:

Location.allInstances()->includes(self.location)

8- **Requirement:** A booking can only be canceled if the booking date and time are in the future.

context Booking

pre CancelOnlyFutureBookings:

self.offering.schedule.startTime > DateTime::now()