

SOEN 342 Project

Section II

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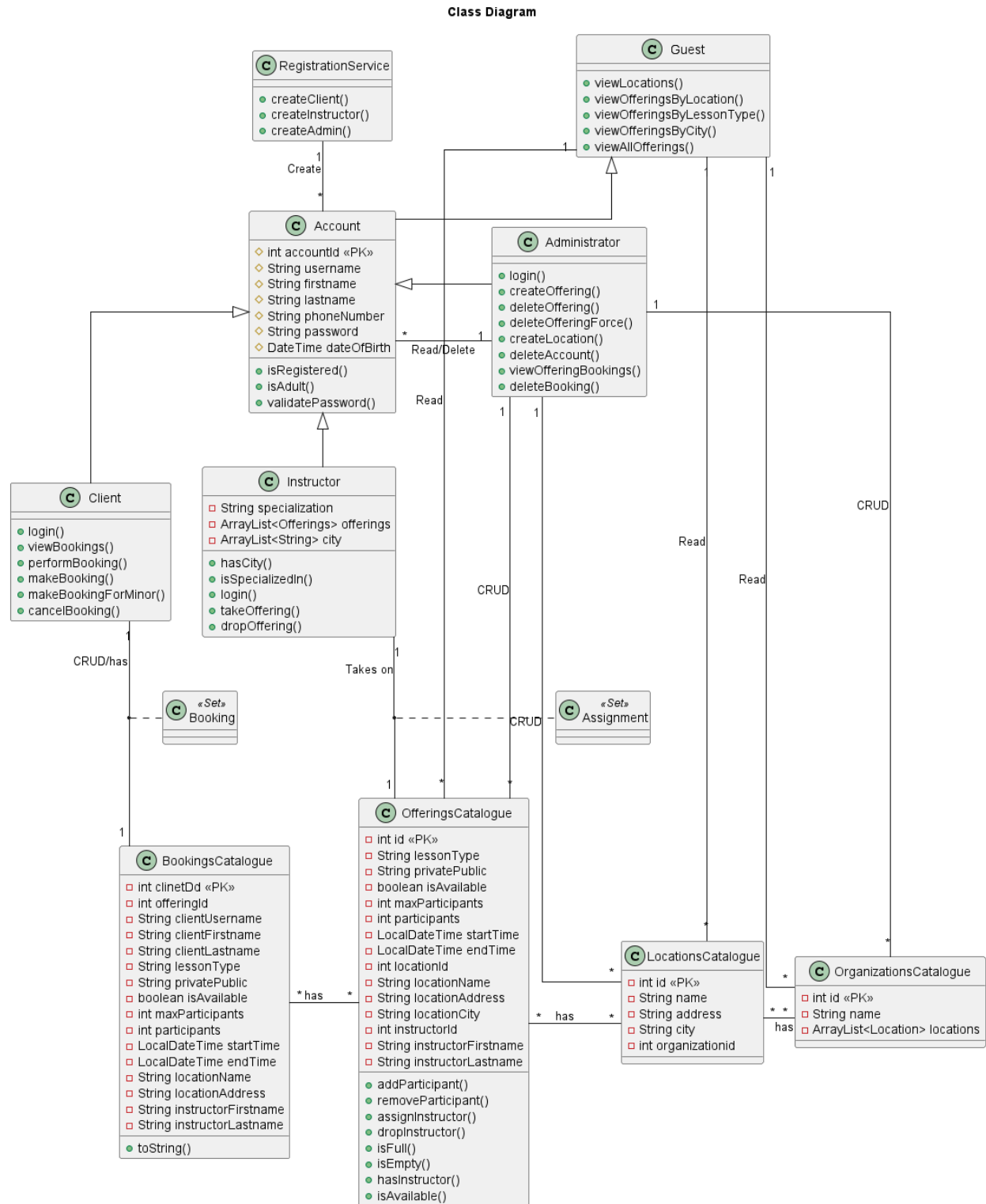
Team #33

Iteration #3

Use Case 2:

Process Bookings

UML Class Diagram



Domain Model and Package Diagram

UML Interaction Diagrams

System Sequence Diagrams

System Operations

System
viewLocations() viewOfferingsByLocation() viewOfferingsByLessonType() viewOfferingsByCity() viewAllOfferings() isRegistered() isAdult() validatePassword() hasCity() isSpecializedIn() login() takeOffering() dropOffering() addParticipant() removeParticipant() assignInstructor() dropInstructor() isFull() isEmpty() hasInstructor() isAvailable() viewBookings() performBooking() makeBooking() makeBookingForMinor() cancelBooking() createOffering() deleteOffering() deleteOfferingForce() createLocation() deleteAccount() viewOfferingBookings() deleteBooking() createClient() createInstructor() createAdmin() toString()

Note: This is the updated System Operations table (Update from Use Case #1).

Operation Contracts

Note: These are the updated operation contracts (Update from Use Case #1).

Contract CO1: viewLocations

Operation: viewLocations()

Cross References: Use Case: Get available offerings

Preconditions:

- The specified location exists and is active in the system

Postconditions:

- A list of all active locations is retrieved and displayed to the user.
- Only locations that are open and available for offerings are included.

Contract CO2: viewOfferingsByLocation

Operation: viewOfferingsByLocation(location: Location object)

Cross References: Use Case: View Offerings by Location

Preconditions:

- The specified location exists and is active in the system.

Postconditions:

- A list of offerings available at the specified location is retrieved.
- Only offerings with available time slots are included.
- Offerings that are fully booked are excluded.

Contract CO3: viewOfferingsByLessonType

Operation: viewOfferingsByLessonType(lessonType: String)

Cross References: Use Case: View Offerings by Lesson Type

Preconditions:

- The specified lesson type is available in the system.
- Bookings of the specified lesson type exists

Postconditions:

- A list of offerings for the specified lesson type is retrieved.
- Only offerings with available time slots are included.
- Offerings that are fully booked are excluded.

Contract CO4: viewOfferingsByCity

Operation: viewOfferingsByCity(cityName: String)

Cross References: Use Case: View Offerings by City

Preconditions:

- Bookings exists that are in the specified City

Postconditions:

- A list of offerings for the specified city is appears for the user
- Only offerings with available time slots are included.
- Offerings that are fully booked are excluded.

Contract CO5: viewAllOfferings

Operation: viewAllOfferings()

Cross References: Use case: User wants to view all offerings

Preconditions:

- There exists one or many available offerings

Postconditions:

- A list of all available offerings is displayed to the user

Contract CO6: isRegistered

Operation: isRegistered()

Cross References: Use case: To check if an account is registered

Preconditions:

- Account must exist in the DB.

Postconditions:

- Return True or False if the account is or is not registered.

Contract CO7: isAdult

Operation: isAdult()

Cross References: Use case: To check if an account is over 18 years old.

Preconditions:

- The account exists in the DB.

Postconditions:

- Returns true or false if the account holder is or is not over 18 years of age.

Contract CO8: validatePassword

Operation: validatePassword(password: String)

Cross References: Use case: To validate password when logging into an account.

Preconditions:

- The account exists in the DB.

Postconditions:

- Returns true or false if the password matches or does not match the account password in questions.

Contract CO9: hasCity

Operation: hasCity(city: String)

Cross References: Use case: Check if the instructor is registered to a specific city.

Preconditions:

- Instructor account is registered

Postconditions:

- Return true or false if the city matches or does not match the city the instructor has registered on their account.

Contract CO10: isSpecializedIn

Operation: isSpecializedIn(specialization: String)

Cross References: Use case: Check if an instructor has a specific specialization.

Preconditions:

- Instructor account exists in the system.

Postconditions:

- Returns true or false if the specialization matches or does not match the specialization registered on the instructor's account.

Contract CO11: login

Operation: Login()

Cross References: Use Case: User logs into the system.

Preconditions:

- The username and password must match a registered account in the system.

Postconditions:

- If credentials are valid, the user is logged into the system and a session is created.
- If credentials are invalid, the login attempt fails, and no session is created.

Contract CO12: takeOffering

Operation: takeOffering(offering: Offering object)

Cross References: Use Case: User enrolls in a selected offering.

Preconditions:

- The instructor is registered and logged into the system.
- The offering exists and has available slots.

Postconditions:

- The instructor is enrolled in the offering, reducing available slots by one.
- If the offering is full, it is marked as unavailable

Contract CO13: dropOffering

Operation: dropOffering(offering: Offering object)

Cross References: Use Case: User drops a previously taken offering.

Preconditions:

- The instructor is registered and logged into the system.
- The instructor has the offering in question.

Postconditions:

- The instructor is removed from the offering, increasing available slots by one.
- If the offering has open slots, it is marked as available.

Contract CO14: addParticipant

Operation: addParticipant()

Cross References: Use case: Update participant count in given offering.

Preconditions:

- Offering already exists.

Postconditions:

- Offering's participant count is update by +1.

DOUBLE CHECK FROM HERE DOWN

Contract CO15: removeParticipant

Operation: removeParticipant()

Cross References: Use case: Remove a participant from a specific offering.

Preconditions:

- The participant is enrolled in the specified offering.

Postconditions:

- The participant is removed from the offering, increasing available slots by one.

Contract CO16: assignInstructor

Operation: assignInstructor()

Cross References: Use case: Assign an instructor to an offering.

Preconditions:

- The instructor and offering both exist in the system.

Postconditions:

- The instructor is assigned to the offering, making it available for public enrollment.

Contract CO17: dropInstructor

Operation: dropInstructor()

Cross References: Use case: Remove an instructor from an offering.

Preconditions:

- The instructor is currently assigned to the specified offering.

Postconditions:

- The instructor is removed from the offering, which may affect the offering's availability.

Contract CO18: isFull

Operation: isFull()

Cross References: Use case: Check if an offering is fully booked.

Preconditions:

- The offering exists in the system.

Postconditions:

- Returns true if the offering has no available slots; false otherwise.

Contract CO19: isEmpty

Operation: isEmpty()

Cross References: Use case: Check if an offering has no participants.

Preconditions:

- The offering exists in the system.

Postconditions:

- Returns true if the offering has no participants; false otherwise.

Contract CO20: hasInstructor

Operation: hasInstructor()

Cross References: Use case: Check if an instructor is assigned to an offering.

Preconditions:

- The offering exists in the system.

Postconditions:

- Returns true if the offering has an assigned instructor; false otherwise.

Contract CO21: isAvailable

Operation: isAvailable()

Cross References: Use case: Check if an offering is available for enrollment.

Preconditions:

- The offering exists in the system.

Postconditions:

- Returns true if the offering has available slots and is open for enrollment; false otherwise.

Contract CO22: viewBookings

Operation: viewBookings()

Cross References: Use case: View all bookings for a client.

Preconditions:

- The client exists in the system.

Postconditions:

- A list of all current bookings for the client is displayed.

Contract CO23: performBooking

Operation: performBooking()

Cross References: Use case: Book a client for a specific offering.

Preconditions:

- The client and offering exist in the system.
- The offering has available slots.

Postconditions:

- The client is added to the offering, reducing available slots by one.

Contract CO24: makeBooking

Operation: makeBooking()

Cross References: Use case: Client books a specific offering.

Preconditions:

- The client and offering exist in the system.
- The offering has available slots.

Postconditions:

- The client is added to the offering, reducing available slots by one.

Contract CO25: makeBookingForMinor

Operation: makeBookingForMinor()

Cross References: Use case: Book an offering for a minor client with a guardian.

Preconditions:

- The minor client, guardian, and offering exist in the system.
- The offering has available slots.

Postconditions:

- The minor client is booked for the offering, with the guardian's authorization recorded.

Contract CO26: cancelBooking

Operation: cancelBooking()

Cross References: Use case: Cancel an existing booking.

Preconditions:

- The booking exists in the system.

Postconditions:

- The booking is canceled, and the associated offering's available slots increase by one.

Contract CO27: createOffering

Operation: createOffering()

Cross References: Use case: Admin creates a new offering.

Preconditions:

- The admin is logged into the system.

Postconditions:

- A new offering is added to the system with available slots.

Contract CO28: deleteOffering

Operation: deleteOffering()

Cross References: Use case: Admin deletes an offering.

Preconditions:

- The offering exists in the system.

Postconditions:

- The offering is removed from the system if it has no active participants.

Contract CO29: deleteOfferingForce

Operation: deleteOfferingForce()

Cross References: Use case: Admin forcefully deletes an offering.

Preconditions:

- The offering exists in the system.

Postconditions:

- The offering is removed from the system, regardless of active participants

Contract CO30: createLocation

Operation: createLocation()

Cross References: Use case: Admin creates a new location.

Preconditions:

- The admin is logged into the system.

Postconditions:

- A new location is added to the system and is available for offerings.

Contract CO31: deleteAccount

Operation: deleteAccount()

Cross References: Use case: Admin deletes a client account.

Preconditions:

- The account exists in the system.

Postconditions:

- The account is removed from the system, and associated bookings are canceled.

Contract CO32: viewOfferingBookings

Operation: viewOfferingBookings()

Cross References: Use case: View bookings for a specific offering.

Preconditions:

- The offering exists in the system.

Postconditions:

- A list of all current bookings for the offering is displayed.

Contract CO33: deleteBooking

Operation: deleteBooking()

Cross References: Use case: Admin deletes a specific booking.

Preconditions:

- The booking exists in the system.

Postconditions:

- The booking is removed, and the associated offering's available slots increase by one.

Contract CO34: createClient

Operation: createClient()

Cross References: Use case: Admin or user creates a new client account.

Preconditions:

- The client information is valid.

Postconditions:

- A new client account is created in the system.

Contract CO35: createInstructor

Operation: createInstructor()

Cross References: Use case: Admin creates a new instructor account.

Preconditions:

- The instructor information is valid.

Postconditions:

- A new instructor account is created in the system.

Contract CO36: createAdmin

Operation: createAdmin()

Cross References: Use case: Super admin creates a new admin account.

Preconditions:

- The admin information entered is valid.

Postconditions:

- A new admin account is created in the system and info is stored in DB.

Contract CO37: toString

Operation: toString()

Cross References: Use case: General object string representation.

Preconditions:

- The object exists.

Postconditions:

- A string representation of the object is returned, detailing its attributes.