SOEN 342 Project

Section II

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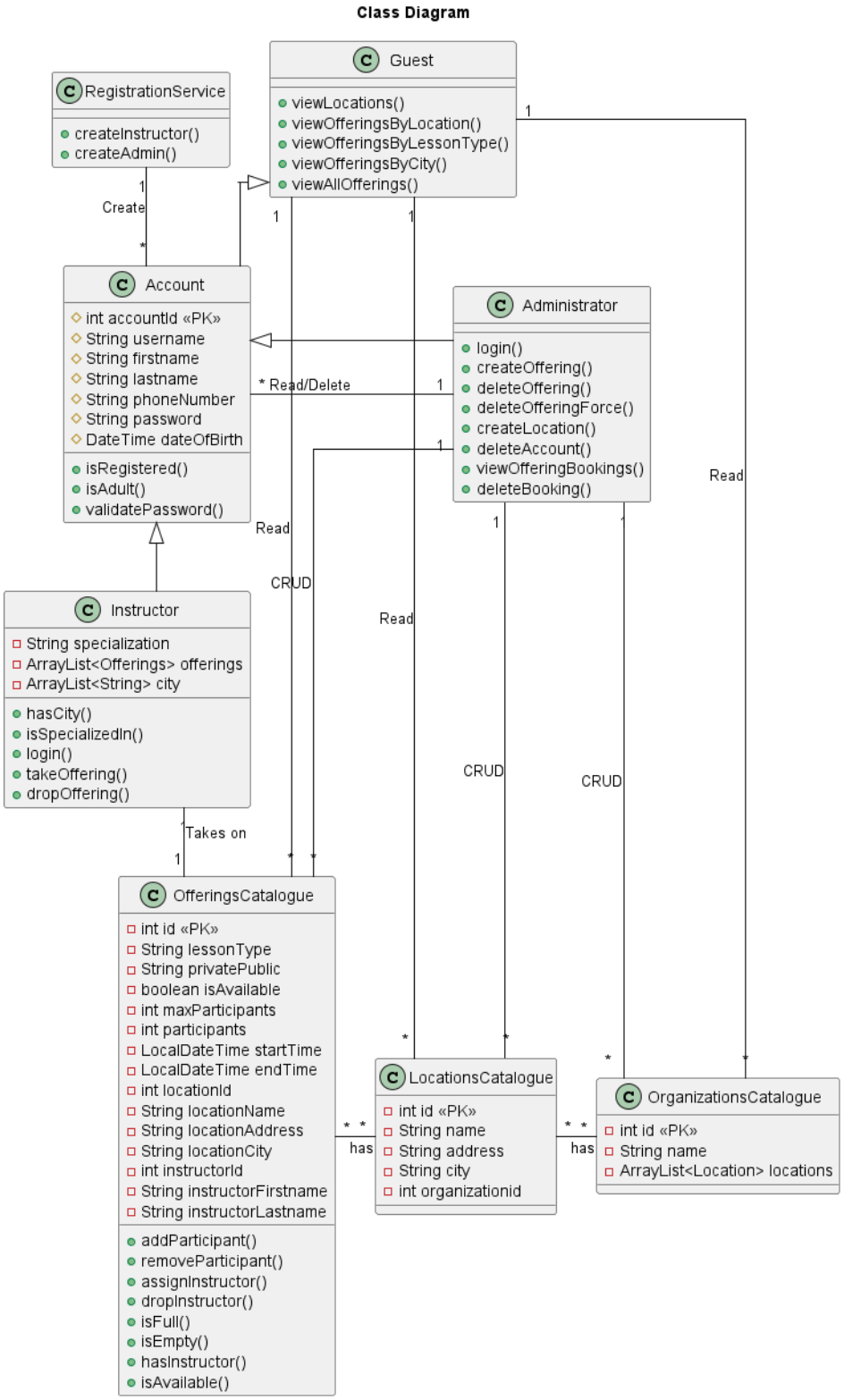
Iteration #2

Use Case 1:

Process Offerings

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(city: String) isSpecializedIn() login() takeOffering() dropOffering() addParticipant() removeParticipant() assignInstructor() dropInstructor() isFull() isEmpty() hasInstructor() isAvailable() createOffering() createLocation() deleteAccount() createInstructor() toString()

Operation Contracts

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.

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: 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 CO23: 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 CO24: 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 CO25: createInstructor
Operation: createInstructor()
Cross References: Use case: Admin creates a new instructor account.

Preconditions:

- The instructor information entered is valid.

Postconditions:

- A new instructor account is created in the system.

Contract CO26: 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 CO27: 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.