# Operation Contracts

**1- Contract:** registerInstructor

**Operation Name**: registerInstructor(name, phone, specialization, and available cities)

**Description**: Registers a new instructor with their details in the **database**(name, phone, specialization, and available cities).

- **Preconditions**:
    - The instructor's details (name, phone, specialization, cities) must be provided.
    - The instructor does not already exist in the **Database**.
- **Postconditions**:
    - A new Instructor entry is created in the **Database** with the provided details.
    - The system confirms successful registration to the instructor.

**2- Contract:** addOffering

**Operation Name**: addOffering(location, schedule, lesson)

**Description**: Adds a new lesson offering to the system for a specified location, schedule, and lesson type.

- **Preconditions**:
    - Logged into the system as an administrator.
    - The location and schedule must be valid.
    - No other offering is scheduled at the specified location and time.
- **Postconditions**:
    - A new Offering entry is created in the **Database** with the specified location, schedule, and type.
    - The system updates the status of the offering to "available."
    - Confirmation is sent to the administrator that the offering has been added successfully.

**3- Contract:** makeBooking

**Operation Name**: makeBooking(offering)

**Description**: Books an available lesson offering for a client.

- **Preconditions**:
    - The client is logged into the system.
    - The selected offering is marked as "available" in the **Database**.
    - If the client is underage, they must have a guardian associated with their account.
- **Postconditions**:
    - A new Booking entry is created in the **Database** for the client and the selected offering.
    - The offering's status is updated to "booked" in the **Database**.
    - Confirmation is sent to the client that the booking was successful.

**4- Contract:** cancelBooking

**Operation Name**: cancelBooking(booking)

**Description**: Cancels an existing booking for a client.

- **Preconditions**:
    - The client is logged into the system.
    - The booking exists in the **Database**.
    - The booking has not yet occurred (i.e., the booking date/time is in the future).
- **Postconditions**:
    - The Booking entry is removed or marked as "canceled" in the **Database**.
    - The associated offering's status is updated to "available" in the **Database**.
    - Confirmation is sent to the client that the cancellation was successful.

**5- Contract:** viewAvailableLessons

**Operation Name**: viewAvailableLessons()

**Description**: Allows an instructor or client to view a list of all available lessons.

- **Preconditions**:
    - The instructor or client is logged into the system.
- **Postconditions**:
    - The system retrieves all offerings marked as "available" from the **Database**.
    - The list of available lessons is displayed to the instructor or client.

**6- Contract:** deleteAccount

**Operation Name**: deleteAccount()

**Description**: Deletes an instructor or client account from the system.

- **Preconditions**:
    - The administrator is logged into the system.
    - The account to be deleted exists in the **Database**.
- **Postconditions**:
    - The Account entry is removed from the **Database**.
    - All associated data (e.g., bookings for clients, offerings for instructors) are removed or marked as "inactive" in the databases.
    - Confirmation is sent to the administrator that the account was deleted.

**7- Contract:** takeOffering

**Operation Name**: takeOffering(offering)

**Description**: Assigns an instructor to a specific lesson offering, making it available to the public.

- **Preconditions**:
    - The instructor is registered and available in the chosen location.
    - The offering exists in the **Database** and is currently unassigned.
- **Postconditions**:
    - The selected offering is updated with the instructor’s ID in the **Database**.
    - The offering is marked as "available" for clients to book.
    - Confirmation is sent to the instructor that they have been assigned to the offering.