

# System Operations and Contracts.

## System Operations Overview

Organization Management Package contains operations as follows:

- addLocation(locationDetails)
- addRoom(locationID,roomInfo)
- deleteRoom(roomID)
- updateLocation(locationID,updateInfo)

Scheduling and Offerings Package contains operations as follows:

- addSchedule(roomID,timeSlotInfo)
- updateSchedule(scheduleID, updateScheduleInfo)
- addOffering(lessonID,offeringType,scheduleID)
- deleteOffering(offeringID)
- instructorAssignment(offeringId, instructorId)

User Management Package contains operations as follows:

- registerClient(clientInfo)
- registerInstructor(instructorInfo)
- assignLegalGuardian(clientID,legalGuardianID)
- deletePerson(userID)
- login(userLoginInfo)
- logout(userID)

Booking Management Package contains operations as follows:

- createBooking(clientID, OfferingID)
- cancelBooking(bookingId)
- viewBookings(clientId)

## Main System Operations Contracts

1. Operation addLocation
  - a. Preconditions
    - i. Only the Administrator has read/write access to the Locations
    - ii. location Details have to be valid
  - b. postconditions
    - i. A new Location is added to the system, and is associated with an organization
    - ii. the system has the new location available for scheduling
2. Operation addSchedule
  - a. Preconditions
    - i. roomID must exist, and be available for the timeSlot period
    - ii. timeSlotInfo must be valid
  - b. Postconditions
    - i. a schedule is created, and linked to a specific room
    - ii. One or more TimeSlot entries are created and associated with the Schedule.

- iii. the room is marked as unavailable during the times of the newly created schedule
- 3. Operation addOffering
  - a. Preconditions
    - i. lessonID must be valid
    - ii. scheduleID should be associated with a valid schedule for a room
    - iii. offeringType has to be private, or group
  - b. Postconditions
    - i. an offering is added, and is linked to a schedule
    - ii. private offerings are only available to 1 client
    - iii. group offerings is available to multiple clients
- 4. Operation registerInstructor
  - a. Preconditions
    - i. instructor must provide valid information
    - ii. availability for a city, and timeslot must not have conflict
  - b. Postconditions
    - i. new instructor is registered in the system as a person
    - ii. the instructor is associated with offerings that match their specialization, and availability
    - iii. The instructor becomes available for scheduling and assignment to Offerings.
- 5. Operation makeBooking
  - a. Preconditions:
    - i. The client must be registered in the system and actively logged in.
    - ii. The offeringId must correspond to an available Offering.
    - iii. For private offerings, the offering must not already be booked.
    - iv. The client's age must be valid or associated with a LegalGuardian if not meeting age requirement.
  - b. Postconditions:
    - i. A Booking is created for the client and linked to the Offering.
    - ii. The offering is marked as "Unavailable" for that time slot if it's private.
    - iii. The booking details are available only to the client, instructor, and administrator for privacy reasons.
- 6. Operation cancelBooking
  - a. Preconditions:
    - i. The bookingId must exist and belong to the client or the client's guardian in the database.
    - ii. The booking must not be within a restricted cancellation period (e.g., 24 hours before the session).
  - b. Postconditions:
    - i. The Booking is deleted from the system.
    - ii. The Offering becomes available again for other clients mainly for private offerings
    - iii. The system records the cancellation of the booking

