

System Operation: registerClient(name, age)

Contract: registerClient (name: String, age: Integer)

Preconditions: None

Postconditions:

- A Client instance c was created. (instance creation)
- c.name was set to name. (attribute modification)
- c.age was set to age. (attribute modification)

System Operation: bookLesson(client, lessonId)

Contract: bookLesson (client: Client, lessonId: LessonID)

Preconditions:

- The client is registered in the system.
- The lesson with lessonId is available.

Postconditions:

- A Booking instance b was created. (instance creation)
- b was associated with the Client. (association formed)
- b was associated with the Lesson. (association formed)
- The lesson's availability was updated to not available. (attribute modification)

System Operation: cancelBooking(client, bookingId)

Contract: cancelBooking (client: Client, bookingId: BookingID)

Preconditions:

- The booking exists and belongs to the client.

Postconditions:

- The Booking instance b was deleted. (instance deletion)
- The Lesson associated with b was set to available. (attribute modification)

System Operation: registerGuardian(guardianName, minorName, minorAge)

Contract: registerAsGuardian (guardianName: String, minorName: String, minorAge: Integer)

Preconditions: None

Postconditions:

- A Guardian instance g was created. (instance creation)
- g.name was set to guardianName. (attribute modification)
- g.child was set to minorName. (association formed)

System Operation: makeBookingForMinor(guardian, minor, lessonId)

Contract: makeBookingForMinor (guardian: Guardian, minor: Client, lessonId: LessonID)

Preconditions:

- The guardian and minor are registered in the system.
- The lesson with lessonId is available.

Postconditions:

- A Booking instance b was created. (instance creation)
- b was associated with the Guardian and the minor. (association formed)
- b was associated with the Lesson. (association formed)
- The lesson's availability was updated to not available. (attribute modification)

System Operation: registerInstructor(name, specialization, cities)

Contract: registerInstructor (name: String, specialization: String, cities: List<String>)

Preconditions: None**Postconditions:**

- An Instructor instance i was created. (instance creation)
- i.name was set to name. (attribute modification)
- i.specialization was set to specialization. (attribute modification)
- i.cities was set to the list of cities cities. (attribute modification)

System Operation: takeLessonOffering(instructor, lessonId)

Contract: assignInstructorToLesson (instructor: Instructor, lessonId: LessonID)

Preconditions:

- The instructor is registered.
- The lesson is available and not yet assigned to an instructor.

Postconditions:

- The Instructor was associated with the Lesson. (association formed)
- The lesson's instructor was updated to the Instructor. (attribute modification)

System Operation: manageLessons(lessonId, action)

Contract: manageLessons (lessonId: LessonID, action: String)

Preconditions:

- The lesson exists.

Postconditions:

- The Lesson was either created, modified, or deleted based on the action. (instance creation, modification, or deletion)

System Event: An administrator views system records.

- **System Operation:** viewRecords()
- **Contract:** viewRecords ()

Preconditions: None

Postconditions:

- The system displayed the requested records to the administrator. (data retrieval)

System Operation: deleteAccount(accountId)

Contract: deleteAccount (accountId: ID)

Preconditions:

- The account exists in the system.

Postconditions:

- The Client or Instructor instance was deleted. (instance deletion)