

# Chapter 1

## Taxi Management System

(Caller, Called)

### 1.1 Request Management, Data Access Utilities

insertRequest()	
null reservations	
updateReservationList	

### 1.2 Reservation Management, Data Access Utilities

insertReservation(passengerId, origin, destination, date, time)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
Formally valid arguments	An entry containing the reservation data is inserted into the database.
updateReservationList(...)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
Formally valid arguments	An entry containing the reservation data is inserted into the database for each reservation? What is this method for?.

### 1.3 Taxi Management, Data Access Utilities Management

updateQueues	
<i>Input</i>	<i>Effect</i>
a null parameter	A NullPointerException is raised.
an array containing some null values	exception
array of queues, with some queues containing null values	A NullPointerException is raised.
valid arguments	ok

updateLocation	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
valid	inserted in DB

updateTaxiStatus	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
valid	inserted in DB

### 1.4 Taxi Management, Location Management

isLocationInsideCity(location)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
A location whose coordinates are invalid	An InvalidLocationException is raised.
A location outside the city	Returns false.
A location inside the city	Returns true

getZone(location)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
A location whose coordinates are invalid	An InvalidLocationException is raised.
A location outside the city	An InvalidLocationException is raised.
A location inside the city	The id of the zone to which the location belongs.

## 1.5 Reservation Management, Location Management

getZone(location)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
A location whose coordinates are invalid	An InvalidLocationException is raised.
A location outside the city	An InvalidLocationException is raised.
A location inside the city	The id of the zone to which the location belongs.

  

checkTaxiDriverLocation(currentLocation, meetingPoint)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
A currentLocation whose coordinates are invalid	An InvalidLocationException is raised.
A meetingPoint whose coordinates are invalid	An InvalidLocationException is raised.
A currentLocation outside the city	Returns false.
A meetingPoint outside the city	An InvalidLocationException is raised.
Both currentLocation and meetingPoint inside the city, but not within 50m (?) from one another	Returns false.
Both currentLocation and meetingPoint inside the city, within 50m (?) from one another	Returns false.

## 1.6 Reservation Management, Request Management

requestTaxi(passengerId, passengerLocation, destination)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
A passengerId not correctly formatted	An InvalidArgumentFormatException is raised.
A passengerLocation whose coordinates are invalid	An InvalidLocationException is raised.
A destination whose coordinates are invalid	An InvalidLocationException is raised.
invalid values (?)	error
A passengerLocation outside the city	A passengerId not correctly formatted
A valid set of parameters	A new request is created and handled; refer to the RASD for the specific outcomes of this operation.

## 1.7 Request Management, Taxi Management

existsAvailableTaxiDriver(request, zone)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullArgumentException is raised.
An inexistent zone	An InvalidArgumentValueException is raised.
A zone with invalid fields	An InvalidArgumentValueException is raised.
A valid set of parameters	true if a taxi driver is available to serve the request, false otherwise

  

getETA(taxiDriver, passengerLocation)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullArgumentException is raised.
A passengerLocation whose coordinates are invalid	An InvalidLocationException is raised.
An inexistent taxi driver	An InvalidArgumentValueException is raised.
A valid taxiDriver and passengerLocation	Returns the estimated time of the arrival of the taxi to the location.

  

taxiDriverDroppedRequest(taxiId)	
<i>Input</i>	<i>Effect</i>
An invalid taxiId	An InvalidArgumentValueException is raised.
A valid taxiId	If the taxi driver is allowed to drop the request (check RASD conditions), it will return true, notify the passenger that his request has been dropped and update the database accordingly; otherwise it will return false.

  

sendCurrentLocation(taxiId, location)	
<i>Input</i>	<i>Effect</i>
A null location	A NullArgumentException is raised.
A location whose coordinates are invalid	An InvalidLocationException is raised.
An invalid taxiId	An InvalidArgumentValueException is raised.
taxiId is valid, location is inside city	Location is set as the new position of the taxi, the taxi is moved into the new zone, its status is set as available and the modification is written in the database.
taxiId is valid, location is outside city	Location is set as the new position of the taxi, the taxi is moved into the out-of-city queue, its status is set as outside-city and the modification is written in the database.



## Chapter 2

# System Administration

### 2.1 Zone Management, Data Access Utilities

insertZones(Zone[] zones)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
An empty array	An InvalidArgumentValueException is raised.
An array containing some null values	A NullPointerException is raised.
An array of non-null, but invalid zones	An InvalidArgumentValueException is raised.
An array of valid, but already existing zones	An InvalidArgumentValueException is raised.
A non-empty array of valid and not existing zones	The zones are inserted in the database.

insertZoneZone zone	
<i>Input</i>	<i>Effect</i>
A NullPointerException is raised.	
An invalid zone	An InvalidArgumentValueException is raised.
A valid, but already existent zone	An InvalidArgumentValueException is raised.
A valid and not existing zone	The zone is inserted in the database.

updateZones(Zone[] zones)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
An empty array	An InvalidArgumentValueException is raised.
An array containing some null values	A NullPointerException is raised.
An array of non-null, but invalid or inexistent zones	An InvalidArgumentValueException is raised.
A non-empty array of valid, existing zones	The data associated with the specified zones is updated in the

asda

## 2.2 API Permission Management, Data Access Utilities

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## 2.3 Taxi Driver Management

### 2.3.1 Data Access Utilities

insertTaxiDrivers(TaxiDriver[] tds)	
<i>Input</i>	<i>Effect</i>
A null parameter	A <code>NullArgumentException</code> is raised.
An empty array	An <code>InvalidArgumentValueException</code> is raised.
An array containing some null values	A <code>NullArgumentException</code> is raised.
An array of valid, but already existing taxi drivers	An <code>InvalidArgumentValueException</code> is raised.
A non-empty array of valid and not existing taxi drivers	The taxi drivers are inserted in the database.
insertTaxiDriver(TaxiDriver td)	
<i>Input</i>	<i>Effect</i>
A null parameter	A <code>NullArgumentException</code> is raised.
An invalid taxi driver	An <code>InvalidArgumentValueException</code> is raised.
A valid, but already existent taxi driver	An <code>InvalidArgumentValueException</code> is raised.
A valid and not existing taxi driver	The taxi driver is inserted in the database.
(?) updateTaxiDriver(TaxiDriver td)	
<i>Input</i>	<i>Effect</i>
A <code>NullArgumentException</code> is raised.	
An inexistent taxi driver	An <code>InvalidArgumentValueException</code> is raised.
A taxi driver with some null or empty fields	An <code>InvalidArgumentValueException</code> is raised.
A valid taxi driver	The data associated with the specified taxi driver is updated in the database.



## Chapter 3

# Account Management

3.1 Passenger Registration, Data Access Utilities

3.2 Login, Data Access Utilities

3.3 Password Retrieval, Data Access Utilities

3.4 Settings Management, Data Access Utilities



## Chapter 4

# Component-Component Integration

### 4.1 Remote Services Interface, Taxi Management System

requestTaxi(passengerId, passengerLocation, destination)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
A passengerId not correctly formatted	An InvalidArgumentFormatException is raised.
A passengerLocation whose coordinates are invalid	An InvalidLocationException is raised.
A destination whose coordinates are invalid	An InvalidLocationException is raised.
invalid values (?)	error
A passengerLocation outside the city	A passengerId not correctly formatted
A valid set of parameters	A new request is created and handled; refer to the RASD for the specific outcomes of this operation.

  

endRide(taxiId, currentLocation)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
invalid taxiId	error
non existing taxiId	error
non existing currLOc	error

  

endRide(taxiId, currentLocation)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullPointerException is raised.
invalid taxiId	error
non existing taxiId	error
invalid currLoc	
non existing currLOc	

## 4.2 Remote Services Interface, Account Management

(?)insertPassenger	
<i>Input</i>	<i>Effect</i>
(?)updatePassenger	
<i>Input</i>	<i>Effect</i>
(?)deletePassenger	
<i>Input</i>	<i>Effect</i>

## 4.3 Remote Services Interface, System Administration

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checkPassword(adminId, password)	
<i>Input</i>	<i>Effect</i>
null	
invalid	
non-existing adminId	
verifyPermission(appId, operation)	
<i>Input</i>	<i>Effect</i>
A null parameter	
invalid	
non existing appId	
operation not existing(???)	
permission not given to appId for the operation	
permission granted	
sendData(data)	
<i>Input</i>	<i>Effect</i>
invalid format	
null	
wrong data	
insertZones	
invalid format	
null	
wrong data	
askZoneList(adminId)	
<i>Input</i>	<i>Effect</i>
An invalid adminId	An InvalidSecurityLevelException is raised.
A valid adminId	Returns the zones that are stored in the database.
updateZones(Zone[] zones)	
<i>Input</i>	<i>Effect</i>
A null parameter	A NullArgumentException is raised.
An empty array	An InvalidArgumentValueException is raised.
An array containing some null values	A NullArgumentException is raised.
An array of non-null, but invalid or inexistent zones	An InvalidArgumentValueException is raised.
A non-empty array of valid, existing zones	The data associated with the specified zones is updated in the database.
insert,	
<i>Input</i>	<i>Effect</i>
invalid format	