

Project Description

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This project is a travel assistant application which can be used by a frequent flyer to book and manage their flights. Users will be able to book flights based on arrival time & destination, setup their baggage plans (with additional costs), and manage their flights as well. Management features would include viewing the itinerary of their flight and cancellation of said flight. Users will also have the option to book a rental car from the destination airport. Users will be able to choose from several different vehicle. All payments would be handled through the in-house system.

System Requirements

1 is highest, 3 is lowest

Identifier	Priority	Requirement
REQ1	1a	The system shall allow an administrator to create flights for the user to select from.
REQ2	1b	The system shall allow an administrator to create planes that can be assigned to flights.
REQ3	1c	The system shall allow users to book flights (view arrival and destination).
REQ4	1d	The system shall allow users to setup their baggage plan for their flight.
REQ5	1e	The system shall allow users to cancel their flight.
REQ6	1f	The system shall allow users to view the itinerary of their flight.
REQ7	2a	The system should have a login feature where users are able to create/login to their user accounts.
REQ8	2b	The system shall allow users to pay for the flight using our application.
REQ9	2c	The system shall allow the user to logout of the application.
REQ10	3a	The system shall allow users to utilize a car rental service at their airport destination.
REQ11	3b	The system shall display various types of vehicles to rent (with rates).
REQ12	3c	The system shall allow users to book their car rental.
REQ13	3d	The system shall allow users to pay for car rentals using our application.
REQ14	3e	The system shall allow users to view their booked car rentals.

User Stories

Person = 1 pts, 1 Hour = 2 pts, Meeting = 3 pts

Identifier	User Story	Size
ST-1	As an administrator of the system, I will be able to create flights for a user to select from.	3 pt(s)
ST-2	As an administrator of the system, I will be able to create planes to be assigned to specific flights.	3 pt(s)
ST-3	As a user, I will be able to book flights that I am interested in based on arrival/destination.	3 pt(s)
ST-4	As a user, I will be able to choose my baggage plan for my booked flight.	3 pt(s)
ST-5	As a user, I will be able to cancel my booked flight.	3 pt(s)
ST-6	As a user, I will be able to find and view the itinerary of my booked flight.	4 pt(s)
ST-7	As a prospective client, I will be able to create a user account to access the services.	4 pt(s)
ST-8	As a user, I will be able to pay for my booked flight.	3 pt(s)
ST-9	As a user, I should be able to log out of the system.	2 pt(s)
ST-10	As a user, I will be able to utilize the rental car service at my destination airport	3 pt(s)
ST-11	As a user, I will be able to view the vehicles available for rental with rates included.	4 pt(s)
ST-12	As a user, I will be able to rent a vehicle based on type and make.	6 pt(s)
ST-13	As a user, I will be able to pay for the vehicle rental.	3 pt(s)
ST-14	As a user, I will be able to view my vehicle rentals.	2 pt(s)

Use Cases

Use Case UC-1:	Flight Booking		
Related Requirements:	REQ3, REQ4		
Initiating Actor:	A Customer		
Actor's Goal:	To successfully book a flight		
Participating Actors:	Flight, Airplane, User, Booking, UserController		
Preconditions:	There must be a user, a flight, a rental system, and an airplane		
Postconditions:	The user should have a booked trip saved in a trip list with automatic seating assigned		
Flow of Events for Main Success Scenario	X	X	
<-	1.	The user is presented with flight options to choose from	
->	2.	The user is able to select a flight	
<-	3.	The user is presented with baggage options to choose from	
->	4.	The user is able to select a baggage plan	
<-	5.	The user is notified that their flight has been successfully booked	

Use Case UC-2:	Car Booking		
Related Requirements:	REQ10, REQ11, REQ12		
Initiating Actor:	A Customer		
Actor's Goal:	To successfully book a rental car		
Participating Actors:	User, RentalSystem, UserController		
Preconditions:	There must be a user and a rental system		
Postconditions:	The user should have a rental car assigned		
Flow of Events for Main Success Scenario	X	X	
<-	1.	The user is presented with rental car options	
->	2.	The user is able to select a car by make and model	
<-	3.	The user is notified that their car has been rented and set aside for them	

Use Case UC-3:	Payment	
Related Requirements:	REQ8, REQ13	
Initiating Actor:	A User	
Actor's Goal:	To make payment for trips/rental car	
Participating Actors:	UserController, User, Payment	
Preconditions:	To have a user who has booked a flight (car rental optional)	
Postconditions:	User has added payment details to pay for services available	
Flow of Events for Main Success Scenario	X	X
<-	1.	The user is presented with input fields for payment details
->	2.	The user inputs required information
<-	3.	The user is notified that their payment method is valid and has been confirmed

Use Case UC-4:	Create User	
Related Requirements:	REQ7	
Initiating Actor:	A Customer	
Actor's Goal:	To successfully create a user account	
Participating Actors:	UserController, User	
Preconditions:	Application is running	
Postconditions:	The user has created an account which they can use to login	
Flow of Events for Main Success Scenario	X	X
<-	1.	The user is presented with proper fields to enter their details
->	2.	The user inputs their user name, password, and confirms their details
<-	3.	(If a user name exists, user must choose different username)
<-	4.	(If a password is invalid, user must choose different password)
->	5.	The user inputs a valid user name and password and confirms details
<-	6.	The user is notified of a successful account creation and an account is generated with the input information

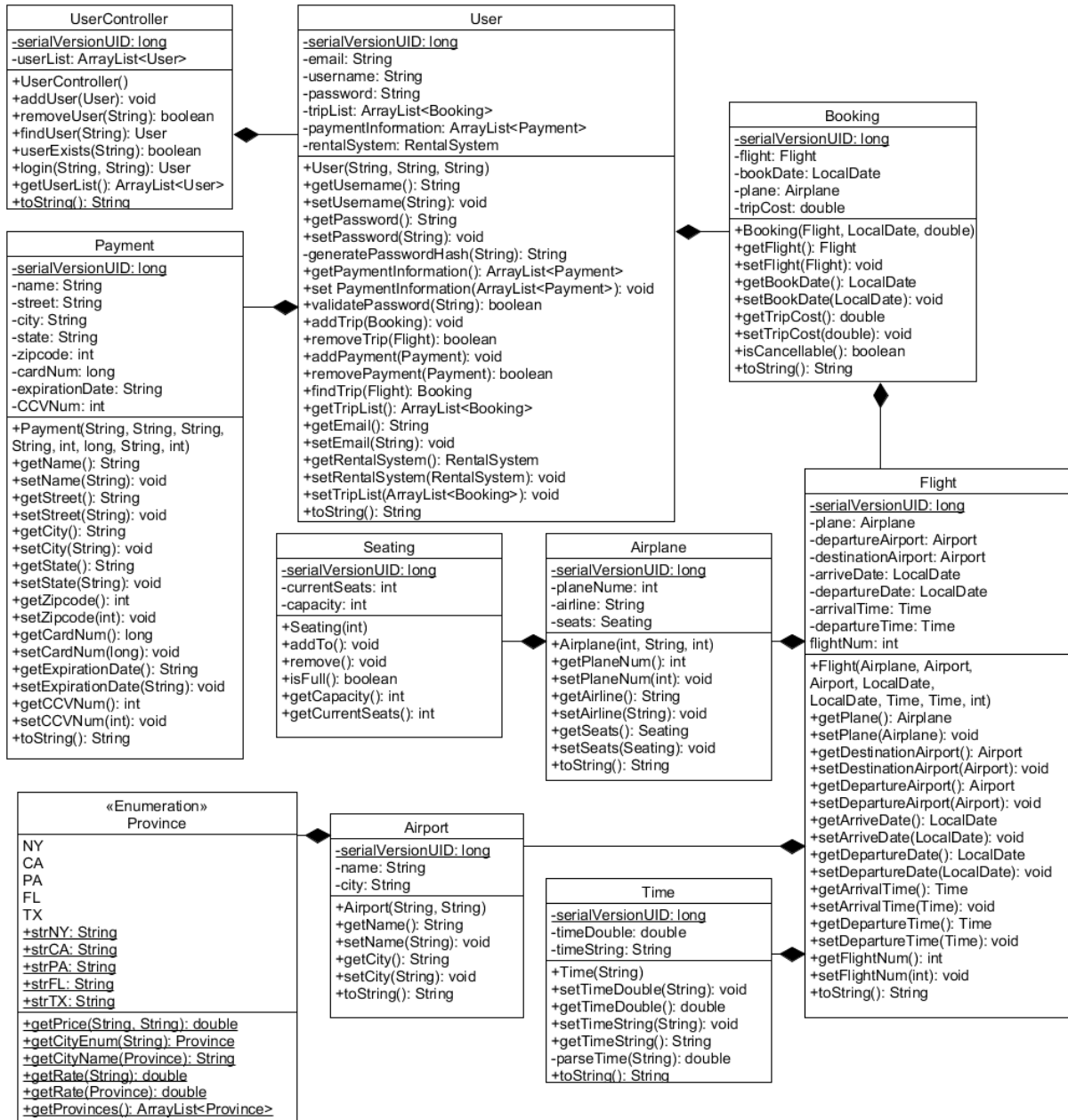
Use Case UC-5:	Login/Logout	
Related Requirements:	REQ7, REQ9	
Initiating Actor:	A Customer	
Actor's Goal:	To login to the APZ application	
Participating Actors:	UserController, User	
Preconditions:	Application is running and has loaded a list of saved created users	
Postconditions:	User has successfully logged into the application and can access internal services	
Flow of Events for Main Success Scenario	X	X
<-	1.	The user is presented with an input for user, password, and an action button
->	2.	The user inputs their details in proper fields and action with the button
<-	3.	The user is notified of their successful action and brought to the main application page
Flow of Events for Extensions (Alternate Scenarios)	X	X
<-	1.	The user is presented with the option to logout of the application
->	2.	The user selects the option to logout
<-	3.	The user is notified of their successful action and brought to the application's login screen

Use Case UC-6:	Cancel Trip	
Related Requirements:	REQ3, REQ5	
Initiating Actor:	A Customer	
Actor's Goal:	To cancel a booked trip	
Participating Actors:	UserController, User, Booking	
Preconditions:	To have a user who has booked a trip (flight)	
Postconditions:	The user is notified that their trip has been cancelled	
Flow of Events for Main Success Scenario	X	X
<-	1.	The user is presented with options to cancel a trip based on a generated list
->	2.	The user selects one of the trips to cancel and confirms their cancellation
<-	3.	The user is notified that their trip is cancelled and it is removed from their list of trips

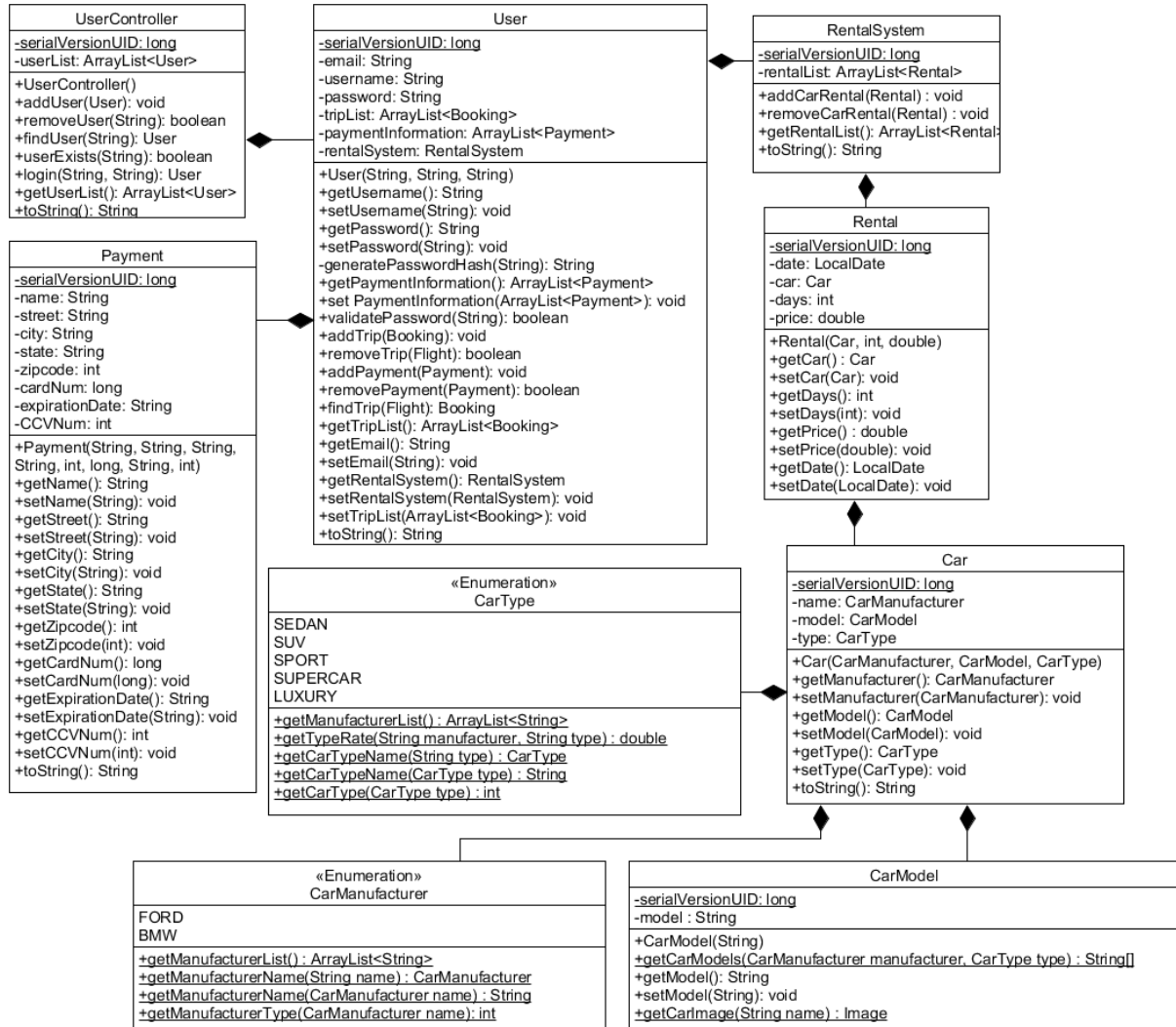
Use Case UC-7:	View Itinerary	
Related Requirements:	REQ3, REQ6	
Initiating Actor:	A Customer	
Actor's Goal:	To view details of a booked trip	
Participating Actors:	UserController, User, Booking, Flight, Airplane, Seating, Payment	
Preconditions:	To have a user who has booked a trip and has made payment	
Postconditions:	User is presented with a page with details of their scheduled trips	
Flow of Events for Main Success Scenario	X	X
<-	1.	The user is presented with a list of their trips to view
->	2.	The user selects a trip from the list to generate a detailed itinerary
<-	3.	A detailed itinerary is presented to the user to view

Use Case UC-8:	Display Car Rental	
Related Requirements:	REQ12, REQ14	
Initiating Actor:	A Customer	
Actor's Goal:	To view a booked car rental	
Participating Actors:	UserController, User, RentalSystem, Booking	
Preconditions:	To have a user who has booked a trip and a rental car	
Postconditions:	User is presented with a list of car rentals that they have made	
Flow of Events for Main Success Scenario	X	X
<-	1.	The user is presented with a list of car rentals that they have made, including the date booked and the cost of each rental

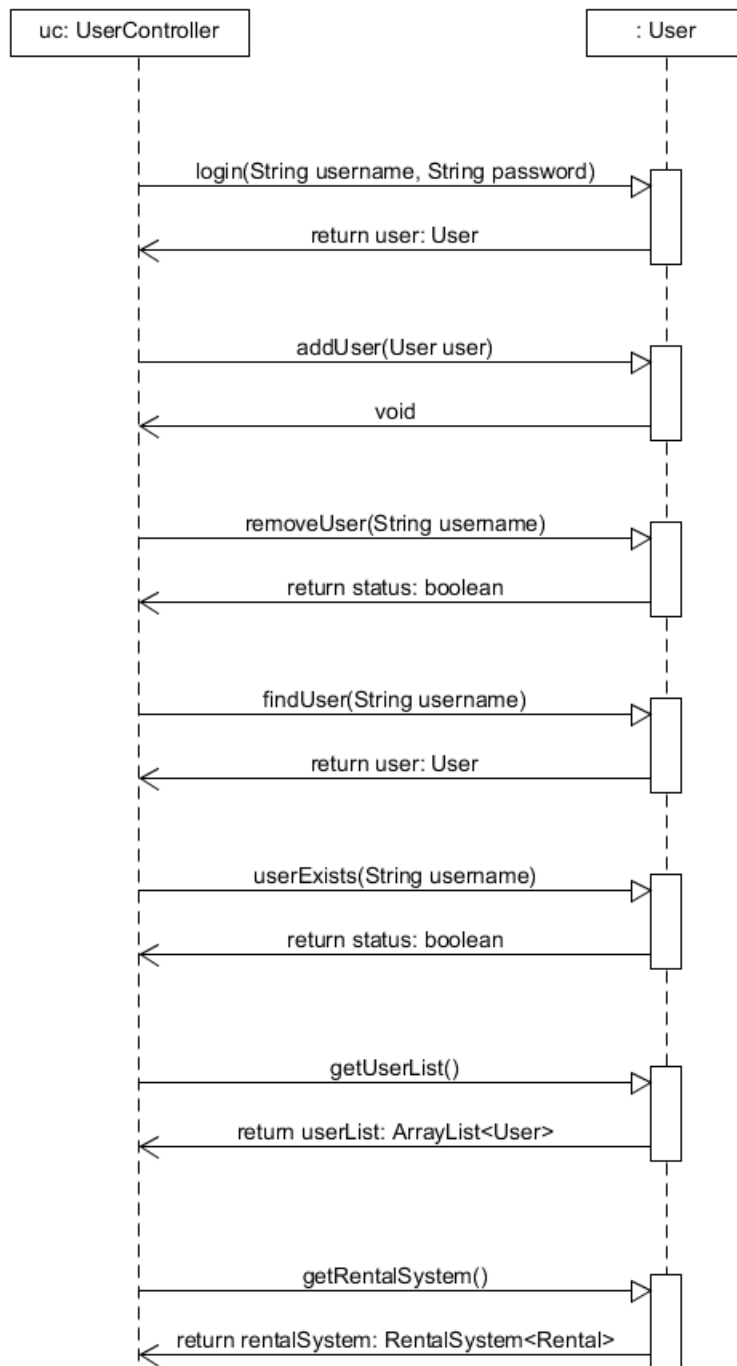
Flight Booking UML Class Diagrams



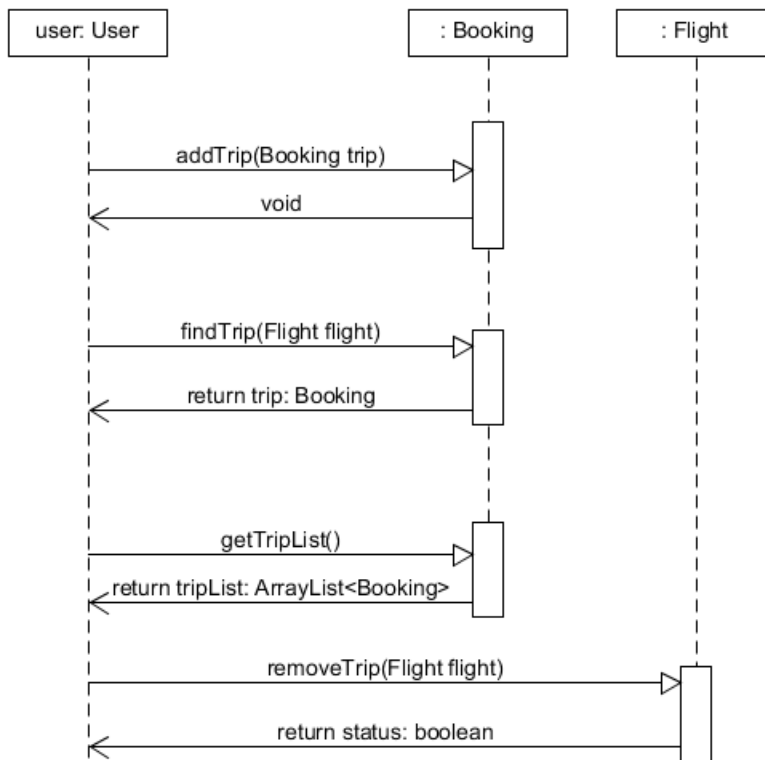
Car Booking UML Class Diagrams



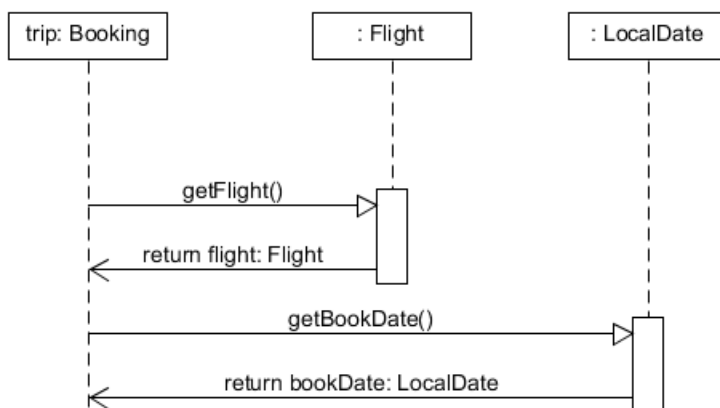
UserController UML Sequence Diagram



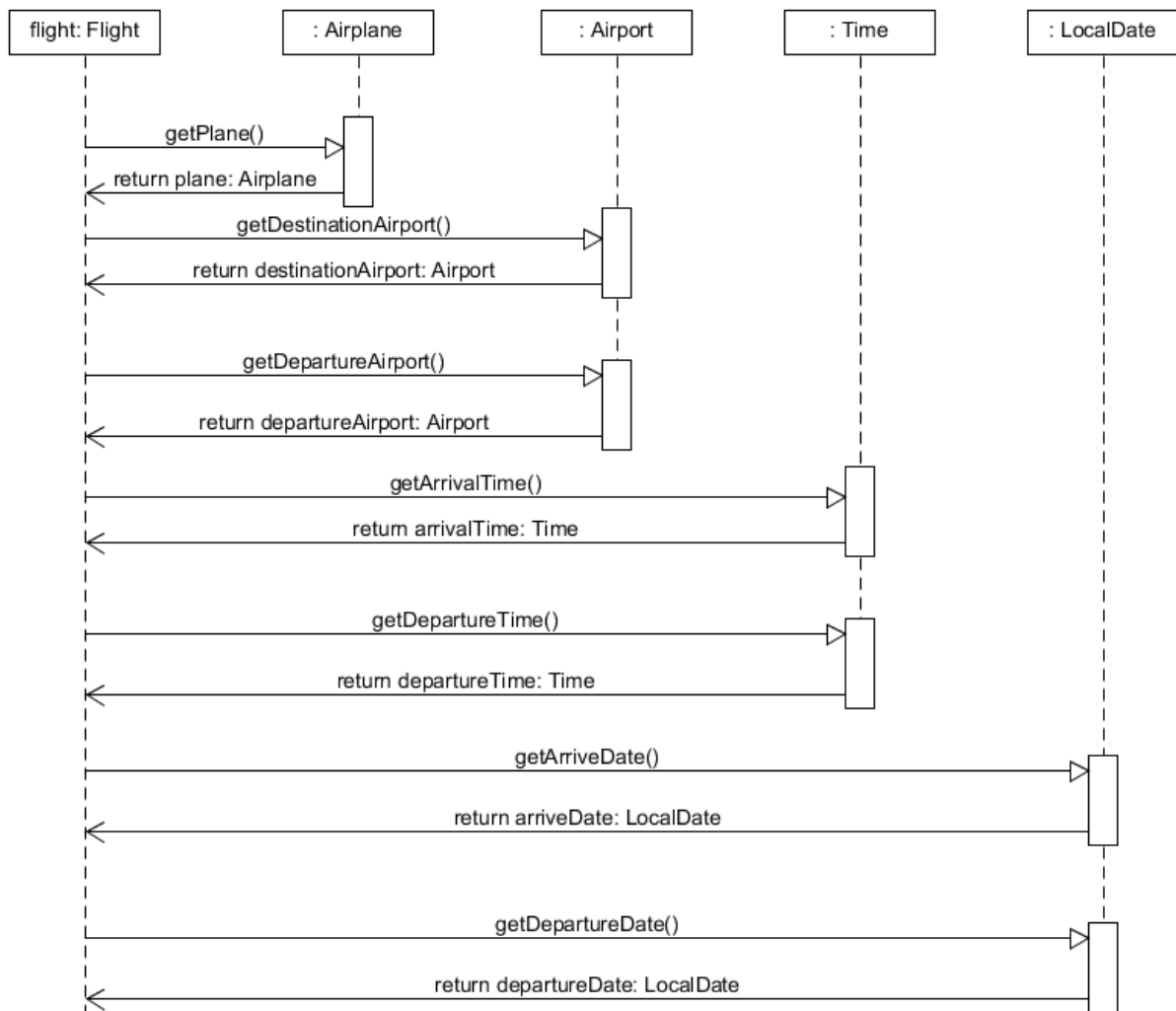
User UML Sequence Diagram



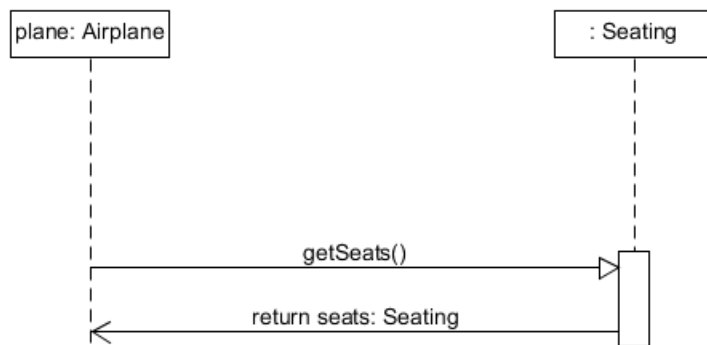
Booking UML Sequence Diagram



Flight UML Sequence Diagram



Airplane UML Sequence Diagram



Rental System UML Sequence Diagram

