

Trip Planning Procedure

Use Case Document

Version History

Date	Version	Description	Authors
12/09/2018	1.0	Artifact creation	Gabriel Rebello
12/09/2018	1.1	Use case diagram added	João Victor Davim
12/09/2018	1.2	Use cases UC1-UC6 descriptions added	Gabriel Rebello
13/09/2018	1.3	Use case diagram updated and use cases finished.	Gabriel Rebello
25/11/2018	1.4	Use cases updated.	Bernardo Cordeiro

Index

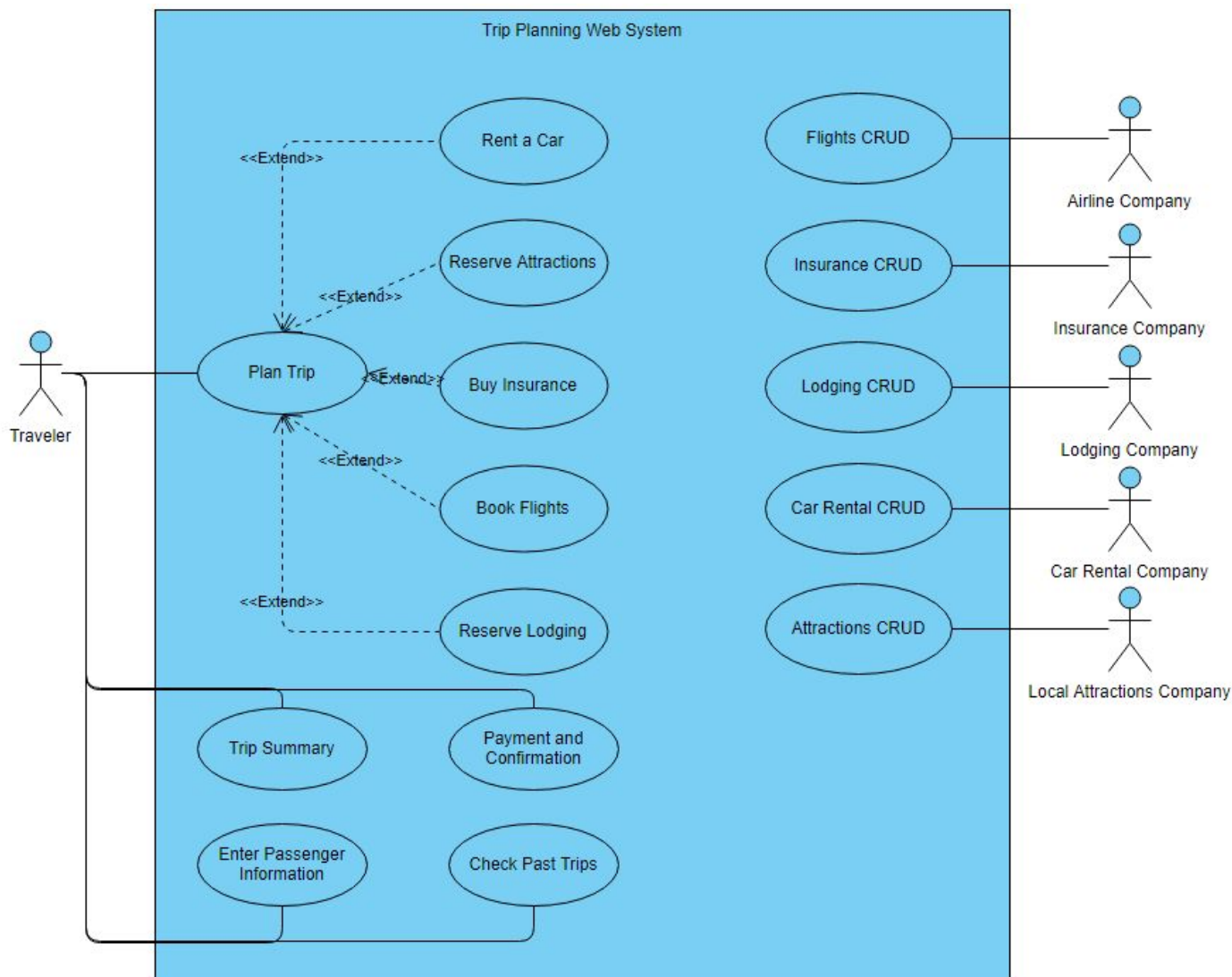
1	Introduction _____	3
2	Use Case Diagram _____	3
3	References _____	4
4	Actors _____	4
5	Use case UC01 – Plan trip _____	4
5.1	UC1 description _____	4
6	Use case UC02 – Rent a Car _____	5
6.1	UC2 description _____	5
7	Use case UC03 – Reserve Attractions _____	6
7.1	UC3 description _____	6
8	Use case UC04 – Buy Insurance _____	6
8.1	UC4 description _____	6
9	Use case UC05 – Book Flights _____	7
9.1	UC5 description _____	7
10	Use case UC06 – Reserve Lodging _____	8
10.1	UC6 description _____	8
11	Use case UC07 – Car Rental CRUD _____	9
11.1	UC7 description _____	9
12	Use case UC08 – Attractions CRUD _____	9
12.1	UC8 description _____	9
13	Use case UC09 – Insurance CRUD _____	10
13.1	UC9 description _____	10
14	Use case UC10 – Flight CRUD _____	10
14.1	UC10 description _____	10
15	Use case UC11 – Lodging CRUD _____	11
15.1	UC11 description _____	11
16	Mensagens _____	12

1 Introduction

The project's goal is to build a system which can provide a complete travel planning service for a customer, as part of the Software Quality course in UFRJ, taken during the second semester of 2018. The system should issue a complete trip plan, including car rental, reservation of hotel rooms and attractions, flight ticket issuing and insurance buying. The final product is built as a web application, made with the JHipster framework. It will interact with a custom database of planes, hotels, cars and attractions, for project purposes. This document aims to model and describe every use case of the proposed system. Version control is used through Git/Github and the use of Zenhub for project management.

2 Use Case Diagram

Obs.: Here, "CRUD <item>" means the create, read, update and delete operations of the corresponding database.



3 References

- UML Use Case Diagram Tutorial (Available at <https://www.lucidchart.com/pages/uml-use-case-diagram>)
- Trip Planning Procedure's vision document (To be published)

4 Actors

- **Traveler:** the system's user, who will plan and buy a trip.;
- **Car Rental Company:** a company which will provide a car rental service to the traveler;
- **Local Travel Company:** the company responsible for reserving tourist attraction tickets;
- **Insurance Company:** the company which will offer travel insurance;
- **Airline Company:** the company which will provide flight options;
- **Lodging Company:** the company which will reserve hotel rooms in the destination.

5 Use Case UC01 – Plan Trip

5.1 Description of the use case flow.

Brief Description	A traveler chooses the trip itinerary and starts the trip plan procedure.
Actors	Traveler.
Precondition	None.
Main Flow	<ol style="list-style-type: none">1. A Traveler reaches the system's landing page.2. The traveler provides the trip's origin, destination, departure and return dates, and the number of passengers and clicks on "Plan New Trip" button.3. The system initiates a trip planning flow including UC1, UC2, UC3, UC4 and UC5.
Alternate Flows	<ol style="list-style-type: none">1. A Traveler reaches the system's main page.2. The traveler clicks an image with a predefined trip origin, destination, departure and return dates and number of passengers.3. The system initiates a trip planning flow including UC1, UC2, UC3, UC4 and UC5.
Exception/Error Flows	E1: Traveler enters invalid information. <ol style="list-style-type: none">1. Operation is aborted. Display which information is not valid.
Post-conditions	A trip planning procedure is started.

6 Use Case UC02 – Rent a Car

6.1 Description of the use case flow.

Brief Description	A traveler reserves a car to be used at the trip destination.
Actors	Traveler.
Precondition	Traveler has entered trip information and is planning a trip.
Main Flow	<ol style="list-style-type: none">1. A traveler reaches the trip plan's car rental session..2. The traveler provides a desired car style and features, as well as dates to pick it up and return it.3. The system displays a list of matching cars.4. The traveler browses the options and chooses a car to rent.5. The system reserves the car for the traveler.
Alternate Flows	<ol style="list-style-type: none">1. Traveler reaches the trip plan's car rental session.2. Traveler skips the session.
Exception/Error Flows	<p>E1: Empty list of options.</p> <ol style="list-style-type: none">1. The system informs no options are available. Display MSG02. <p>E2: No trip information given.</p> <ol style="list-style-type: none">1. The system informs no options are available. Display MSG02. <p>E3: Failed to communicate with the corresponding database.</p> <ol style="list-style-type: none">1. Operation is aborted. Display MSG03.
Post-conditions	A car is reserved and bound to the traveler's trip plan.

7 Use Case UC03 – Reserve Attractions

7.1 Description of the use case flow.

Brief Description	A traveler reserves the local tourist attractions it desires to visit at the trip destination.
Actors	Traveler.
Precondition	Traveler has entered trip information and is planning a trip.

Main Flow	<ol style="list-style-type: none"> 1. A traveler reaches the trip plan's attraction reserving session. 2. The traveler provides the desired reservation day. 3. The system displays a list of the main available attractions. 4. The traveler browses the options and picks the ones they desire. 5. The system makes reservations for the chosen attractions.
Alternate Flows	<ol style="list-style-type: none"> 1. Traveler reaches the trip plan's attraction reserving session. 2. Traveler skips the session.
Exception/Error Flows	<p>E1: Empty list of options.</p> <ol style="list-style-type: none"> 1. The system informs no options are available. Display MSG02. <p>E2: No trip information given.</p> <ol style="list-style-type: none"> 1. The system informs no options are available. Display MSG02. <p>E3: Failed to communicate with the corresponding database.</p> <ol style="list-style-type: none"> 1. Operation is aborted. Display MSG03.
Post-conditions	Local attractions are reserved and bound to the traveler's trip plan.

8 Use Case UC04 – Buy Insurance

8.1 Description of the use case flow.

Brief Description	A traveler buys an insurance service for its trip.
Actors	Traveler.
Precondition	Traveler has entered trip information and is planning a trip.
Main Flow	<ol style="list-style-type: none"> 1. A traveler reaches the trip plan's insurance service session. 2. The traveler provides the desired insurance period. 3. The system displays a list of the available insurance plans. 4. The traveler browses the options and picks the ones they desire. 5. The system buys the insurance service from a company.
Alternate Flows	<ol style="list-style-type: none"> 1. Traveler reaches the trip plan's insurance service session. 2. Traveler skips the session.
Exception/Error Flows	<p>E1: Empty list of options.</p> <ol style="list-style-type: none"> 1. The system informs no options are available. Display MSG02. <p>E2: No trip information given.</p> <ol style="list-style-type: none"> 1. The system informs no options are available. Display MSG02. <p>E3: Failed to communicate with the corresponding database.</p> <ol style="list-style-type: none"> 1. Operation is aborted. Display MSG03.

Post-conditions	An insurance service is bought and bound to the traveler's trip plan.
-----------------	---

9 Use Case UC05 – Book Flights

9.1 Description of the use case flow.

Brief Description	A traveler books a set of flights according to its itinerary.
Actors	Traveler.
Precondition	Traveler has entered trip information and is planning a trip.
Main Flow	<ol style="list-style-type: none"> 1. A traveler reaches the trip plan's flight booking session. 2. The system displays a list of matching flights for the trip dates and destination. 3. The traveler informs the number of executive seats he wants, browses the options and chooses a flight. 4. The system displays the flight seatmap along with its available seats. 5. The traveler chooses the seats and confirms selection. 6. The system reserves the chosen flight for the user and registers it.
Alternate Flows	<p>AF1:</p> <ol style="list-style-type: none"> 1. A traveler reaches the trip plan's flight booking session, and checks the "Flights Back" box. 2. The system displays a list of matching return flights. 3. The traveler informs the number of executive seats he wants, browses the options and chooses a flight. 4. The system displays the flight seatmap along with its available seats. 5. The traveler chooses the seats and confirms selection. 6. The system reserves the chosen flight for the user and registers it. <p>AF2:</p> <ol style="list-style-type: none"> 1. Traveler reaches the trip plan's flight booking service session. 2. Traveler skips the session.
Exception/Error Flows	<p>E1: Empty list of options.</p> <ol style="list-style-type: none"> 1. The system informs no options are available. Display MSG02. <p>E2: No trip information given.</p> <ol style="list-style-type: none"> 1. The system informs no options are available. Display MSG02. <p>E3: Failed to communicate with the corresponding database.</p>

	1. Operation is aborted. Display MSG03.
Post-conditions	All necessary flights are reserved and bound to the traveler's trip plan.

10 Use Case UC06 – Reserve Lodging

10.1 Description of the use case flow.

Brief Description	A traveler reserves a hotel room at the trip destination.
Actors	Traveler.
Precondition	Traveler has entered trip information and is planning a trip.
Main Flow	<ol style="list-style-type: none"> 1. A traveler reaches the trip plan's lodging reservation session. 2. The traveler provides the desired period of stay. 3. The traveler provides a desired room style, location and features. 4. The system displays a list of matching hotels. 5. The traveler browses the options and chooses a hotel. 6. The system displays a list of rooms available for that hotel. 7. The traveler selects one or more rooms they wish to book and confirm their selection. 8. The system reserves the rooms for the traveler.
Alternate Flows	<ol style="list-style-type: none"> 1. Traveler reaches the trip plan's lodging service session. 2. Traveler skips the session.
Exception/Error Flows	<p>E1: Empty list of options.</p> <ol style="list-style-type: none"> 1. The system informs no options are available. Display MSG02. <p>E2: No trip information given.</p> <ol style="list-style-type: none"> 1. The system informs no options are available. Display MSG02. <p>E3: Failed to communicate with the corresponding database.</p> <ol style="list-style-type: none"> 1. Operation is aborted. Display MSG03.
Post-conditions	A hotel room(s) is reserved and bound to the traveler's trip plan.

11 Use Case UC07 – Trip Summary

11.1 Description of the use case flow.

Brief Description	The traveler checks the summary for the trip reservations made and confirms them.
Actors	Traveler
Precondition	Traveler has entered trip information and has chosen some reservations during the planning phase.
Main Flow	<ol style="list-style-type: none"> 1. A traveler reaches the trip summary page. 2. The system displays information regarding all the reservations the traveler has made thus far, as well as the total price of the trip. 3. The traveler confirms that the information is correct and proceeds to the next section.
Alternate Flows	<ol style="list-style-type: none"> 1. A traveler reaches the trip summary page. 2. The system displays information regarding all the reservations the traveler has made thus far, as well as the total price of the trip. 3. The traveler notices there is something in his trip summary he wishes to remove. He goes back to the planning section where he go through UC02-UC06 again.
Exception/Error Flows	
Post-conditions	The trip reservations are confirmed by the system.

12 Use Case UC08 – Enter Passenger Information

12.1 Description of the use case flow.

Brief Description	The user enters information about the passengers in the trip.
Actors	Traveler.
Precondition	Traveler has entered trip information and has chosen some reservations during the planning phase, as well as confirmed the trip summary.
Main Flow	<ol style="list-style-type: none"> 1. A traveler reaches the passenger information page. 2. The system displays a form with all the information it requires to register the passengers to the trip 3. The traveler fills out the form with the required information and confirms. 4. The system registers the passengers information.
Alternate Flows	

Exception/Error Flows	E1: Traveler enters invalid information. 1. Operation is aborted. Display which information is not valid.
Post-conditions	The trip passengers informations are registered in the system.

13 Use Case UC09 – Payment and Confirmation

13.1 Description of the use case flow.

Brief Description	The travelers enter the payment information for the trip.
Actors	Traveler.
Precondition	Traveler has entered trip information and has chosen some reservations during the planning phase, as well as filled out the passengers information. User needs to be authenticated.
Main Flow	<ol style="list-style-type: none"> 1. A traveler reaches the payment information page. 2. The system displays a form with all the information it requires to process the payment for the trip. 3. The traveler fills out the form with the required information and confirms. 4. The system processes the payment for the user and proceeds to the confirmation page. The trip, along with all the reservations and passenger information is saved in the database. A confirmation message is shown to the user to confirm everything has been done successfully.
Alternate Flows	
Exception/Error Flows	<p>E1: Traveler enters invalid information. 1. Operation is aborted. Display which information is not valid.</p> <p>E2: Payment cannot be processed. 1. Operation is aborted. Display MSG03.</p> <p>E1: User is not authenticated. 1. Operation is aborted. Display MSG01.</p> <p>E1: Failed to register trip in the database. 1. Operation is aborted. Display MSG03.</p>
Post-conditions	The trip and its reservations are registered in the system.

14 Use Case UC10 – Car Rental CRUD

14.1 Description of the use case flow.

Brief Description	A car rental company provides information on cars for rent.
Actors	Car Rental Company
Precondition	Car Rental Company is authorized.
Main Flow	<ol style="list-style-type: none">1. A company obtains new information on the offered cars.2. The company updates the system databases through CRUD operations.3. The company informs the system about the modifications.
Alternate Flows	
Exception/Error Flows	<p>E1: Company is not authorized to issue CRUD operations.</p> <ol style="list-style-type: none">1. Operation is aborted. Display MSG04. <p>E2: Failed to communicate with the corresponding database.</p> <ol style="list-style-type: none">1. Operation is aborted. Display MSG03.
Post-conditions	A trip planning flow is started.

15 Use Case UC11 – Attractions CRUD

15.1 Description of the use case flow.

Brief Description	A local attractions company provides information on tourist attractions.
Actors	Local Attractions Company
Precondition	Local Attractions Company is authorized.
Main Flow	<ol style="list-style-type: none">1. A company obtains new information on the offered attractions.2. The company updates the system databases through CRUD operations.3. The company informs the system about the modifications.
Alternate Flows	

Exception/Error Flows	<p>E1: Company is not authorized to issue CRUD operations. 1. Operation is aborted. Display MSG04.</p> <p>E2: Failed to communicate with the corresponding database. 1. Operation is aborted. Display MSG03.</p>
Post-conditions	A trip planning flow is started.

16 Use Case UC12 – Insurance CRUD

16.1 Description of the use case flow.

Brief Description	An insurance company provides information on the insurance plans.
Actors	Insurance Company
Precondition	Insurance Company is authorized.
Main Flow	<ol style="list-style-type: none"> 1. A company obtains new information on the offered insurance plans. 2. The company updates the system databases through CRUD operations. 3. The company informs the system about the modifications.
Alternate Flows	
Exception/Error Flows	<p>E1: Company is not authorized to issue CRUD operations. 1. Operation is aborted. Display MSG04.</p> <p>E2: Failed to communicate with the corresponding database. 1. Operation is aborted. Display MSG03.</p>
Post-conditions	A trip planning flow is started.

17 Use Case UC13 – Flight CRUD

17.1 Description of the use case flow.

Brief Description	An airline company provides information on bookable flights.
Actors	Airline Company
Precondition	Airline Company is authorized.
Main Flow	<ol style="list-style-type: none"> 1. A company obtains new information on the bookable flights. 2. The company updates the system databases through CRUD operations. 3. The company informs the system about the modifications.
Alternate Flows	
Exception/Error Flows	<p>E1: Company is not authorized to issue CRUD operations.</p> <ol style="list-style-type: none"> 1. Operation is aborted. Display MSG04. <p>E2: Failed to communicate with the corresponding database.</p> <ol style="list-style-type: none"> 1. Operation is aborted. Display MSG03.
Post-conditions	A trip planning flow is started.

18 Use Case UC14 – Lodging CRUD

18.1 Description of the use case flow.

Brief Description	A lodging company provides information on hotel rooms for reservation.
Actors	Lodging Company
Precondition	Lodging Company is authorized.
Main Flow	<ol style="list-style-type: none"> 1. A company obtains new information on the offered hotel rooms. 2. The company updates the system databases through CRUD operations. 3. The company informs the system about the modifications.
Alternate Flows	

Exception/Error Flows	<p>E1: Company is not authorized to issue CRUD operations. 1. Operation is aborted. Display MSG04.</p> <p>E2: Failed to communicate with the corresponding database. 1. Operation is aborted. Display MSG03.</p>
Post-conditions	A trip planning flow is started.

19 Use Case UC15 – Checking Past Trips

18.1 Description of the use case flow.

Brief Description	The travelers checks the past trips he has planned.
Actors	Traveler.
Precondition	Traveler needs to be authenticated.
Main Flow	<ol style="list-style-type: none"> 1. The user click on “My Trips” at the top of the website. 2. The system directs the user to the “My Trips” page, where information about past trips and their reservations is displayed.
Alternate Flows	
Exception/Error Flows	<p>E1: Failed to communicate with the corresponding database. 1. Operation is aborted. Display MSG03.</p>
Post-conditions	The system displays the user’s past trips.

20 Messages

ID	Message
MSG01	User is not authenticated. Please login or signup.
MSG02	No options are available for the provided informations.
MSG03	Error. Please try again later.
MSG04	Error. Company is not authorized to issue CRUD operations.