Test Plan

Introduction

This document documents and tracks the necessary information required to effectively define the approach to be used in the testing of the project's product. The document is created during the Planning Phase of the project. Some portions of this document may on occasion be shared with the client/user and other stakeholders whose input/approval into the testing process is needed.

Unit Testing
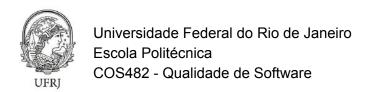
Test Risks / Issues

Risks include missing a test or writing a test case in which the functionalities are not completely evaluated. In both cases, the corresponding functionalities may be broken in the final product and induce a refactoring process. To mitigate these risks, every test case in this document is to be reviewed and validated by the development team upon complete consensus.

Items to be Tested / Not Tested

Items not to be tested include HTML pages and front-end functionalities. This is because users will be intuitively testing those aspects and optionally reporting bugs during the acceptance testing and in production. A list of tested items is given below.

Test Case TC01 - Account Registration

Brief Description	Test the account registration feature by successfully registering an account and signing in.
Expected Result	User is registered and signed in successfully. An account confirmation e-mail is sent during the registration process.
Associated Requirements	FR01
Scheduled Milestone	Sprint 2
Tester	Testing team

Test Case TC02 - Start Trip Plan
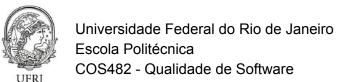
Brief Description	Test the trip plan start procedure by clicking a button on the landing page and providing trip basic details such as number of passengers, destination and dates.
Expected Result	The trip planning process is started and the provided details are registered successfully.
Associated Requirements	FR02
Scheduled Milestone	Sprint 2
Tester	Testing team

Test Case TC03 - Reserve Lodging

Brief Description	Test the lodging reserving functionality by successfully reserving a hotel room in the desired destination. A list of hotel rooms within 10km of the chosen destination must be displayed and the payment process must work.
Expected Result	The hotel room is reserved successfully.
Associated Requirements	FR03 / FR09 / NFR01
Scheduled Milestone	Sprint 2
Tester	Testing team

Test Case TC04 - Book Flights

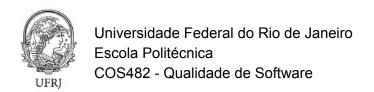|	
Brief Description	Test the flight booking functionality by successfully booking a set of flights to the desired destination. The payment process must work.
Expected Result	The flight set is booked successfully.
Associated Requirements	FR04 / FR09
Scheduled Milestone	Sprint 2
Tester	Testing team

Test Case TC05 - Reserve Attractions

Brief Description	Test the attraction reserving functionality by successfully reserving an attraction in the desired destination. A list of attractions within 10km of the chosen destination must be displayed and the payment process must work.
Expected Result	The flight set is booked successfully.
Associated Requirements	FR05 / FR09 / NFR02
Scheduled Milestone	Sprint 2
Tester	Testing team

Test Case TC06 - Rent a Car

Brief Description	Test the car rental functionality by successfully renting a car in the desired destination. A list of cars must be displayed according to the user's preferences and the payment process must work.
Expected Result	The car is rented successfully.
Associated Requirements	FR06 / FR09
Scheduled Milestone	Sprint 2
Tester	Testing team

Test Case TC07 - Buy Insurance

Brief Description	Test the insurance service functionality by successfully buying insurance for the planned trip. The payment process must work.
Expected Result	Insurance is bought successfully.
Associated Requirements	FR07 / FR09
Scheduled Milestone	Sprint 2
Tester	Testing team

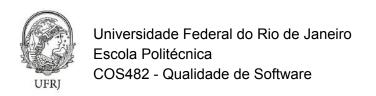### Test Case TC08 - Database Communication

Brief Description	Test the connection to all databases involved in TC03 to TC07 and TC08. The tester is supposed to connect successfully to each database and retrieve all table entries.
Expected Result	The information on each database is retrieved successfully.
Associated Requirements	NFR05
Scheduled Milestone	Sprint 2
Tester	Testing team

Test Case TC09 - Register History

Brief Description	Test whether the user log of past trips and hired services works successfully. The logs must include every planned trip, hired service and completed payment.
Expected Result	The history page displays every log successfully.
Associated Requirements	FR10
Scheduled Milestone	Sprint 2
Tester	Testing team

Test Case TC10 - Information Isolation and Security

Brief Description	Test whether all information regarding a user is isolated from other users by running an automated penetration testing tool.
Expected Result	The information regarding a user is only visible to himself and an administrator account.
Associated Requirements	NFR03
Scheduled Milestone	Sprint 2
Tester	Testing team

Summary of Tests

Item to Test	Associated Requirements	Expected Result	Actual Result	Status	Test Date	Responsibility
Account Registration	FR01	Account registered successfully	Account registered, but email not sent	Tested	25/11/2018	Bernardo
Start Trip Plan	FR02	Trip details are registered successfully	OK	Tested	25/11/2018	Bernardo
Reserve Lodging	FR03/FR09/ NFR01	Lodging is completed successfully	Lodging is successful. However, lodging distance cannot be specified	Tested	25/11/2018	Bernardo
Book Flights	FR04/FR09	Flight is booked successfully	OK	Tested	25/11/2018	Bernardo
Reserve Attractions	FR05/FR09/ NFR02	Attractions are reserved successfully		Not tested		
Rent a Car	FR06/FR09	Car rental is confirmed successfully		Not tested		
Buy Insurance	FR07/FR09	Insurance is bought successfully		Not tested		
Database Communication	NFR05	Informations are retrieved succesfully	OK for flights and lodging. Not done for attractions, car rental and insurance	Tested	25/11/2018	Bernardo
Register History	FR10	History contains all past information from a user	OK, available in My Trips page, except for payment	Tested	25/11/2018	Bernardo

Information Isolation and Security	NFR03	User information is only retrievable by himself or an administrator		Not tested		

Test Approach(s)

The key idea to our testing approach is to check whether the implemented functionalities address the proposed use cases and requirements. Every test is to be conducted regarding two main aspects: conformity with the documents and whether the proposed functionality works. We do not plan to test performance or stressing aspects of the system since our main goal is to implement as many functionalities as possible in a short time period.

Test Pass / Fail Criteria

An item is considered to pass a test if it works as described in all the associated requirements. A partial fail includes working but not satisfying all the requirements. A complete fail occurs when the item does not work at all.

Test Entry / Exit Criteria / Resumption Criteria

Every item must be tested at least once and tested again after every code change. A test must be resumed whenever a partial or complete fail occurs and the necessary fixes have already been committed. A test stops whenever it passes and no further changes are made.

Test Deliverables

No deliverables are generated from testing. However, the corresponding issues are moved on Zenhub from "To test/Testing" to "Closed", to indicate that testing was done. Commentaries may be made in the issue to highlight possible problems/other pertinent information.

Integration Testing

Test Risks / Issues

Integration tests inherently face at least the same risks as unit tests, such as poor test writing and missing tests. Additional risks include not exploring every part of the evaluated

integration or not specifying how the integration must be performed whenever it matters. Both cases can lead to code refactoring and bugs in the final product. For risk mitigation on integration tests, besides reviewing and validating every test, the development team must double-check whether the integration process description is sufficient for a test case.

Items to be Tested / Not Tested

Test Case TC11 - Plan Trip Itinerary

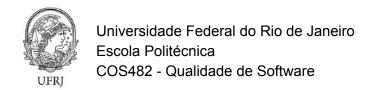| Brief Description	Test whether the whole trip planning process works correctly. This implies integrating TC02 to TC07 and going through the complete process of planning a trip. The integration order does not matter, i.e. TC02 to TC07 may appear in any order in the process.
Expected Result	The trip planning works successfully from start to end. A confirmation of a new issued trip plan must be displayed at the user's account history page.
Associated Requirements	FR02-FR10 / NFR01-05
Scheduled Milestone	Sprint 2
Tester	Testing team

Test Approach(s)

The integration testing approach is supposed to check whether all subprocesses come together to provide a fluid user experience in the trip planning process. This includes pinpointing possible delay bottlenecks, malfunctioning functionalities and integration issues in the process.

Test Pass / Fail Criteria

An item is considered to pass an integration test if all the associated subsystems work and communicate correctly to perform the test goal. A partial fail means the goal was reached but with integration problems such as bottlenecks and malfunctioning functionalities that passed unit tests, i.e. worked when isolated. A complete fail occurs when the integration cannot reach the goal, i.e. the composed system does not work.

Test Entry / Exit Criteria / Resumption Criteria

Every integration must be tested at least once and tested again after any relevant code change on its components. A test must be resumed whenever a partial or complete fail occurs and the necessary fixes have already been committed. A test stops whenever it passes and no further changes are made

Test Deliverables

No deliverables are generated from testing. However, the corresponding issues are moved on Zenhub from "To test/Testing" to "Closed", to indicate that testing was done. Commentaries may be made in the issue to highlight possible problems/other pertinent information.

Acceptance Testing

Test Risks / Issues

Acceptance testing risks include disapproval of functionalities by the stakeholders and users, and uncovering previously untested aspects such as front-end bugs and performance issues. Mitigation of these risks include continuous communication with the stakeholders and higher priority given to bug fixes.

Items to be Tested / Not Tested

Test Case TC12 - System Availability

Brief Description	Test whether the system can handle multiple user requests for a small amount of users that will participate in the acceptance test. For this purpose, a monitoring tool must be used to track the system's downtime.
Expected Result	The system handles request simultaneously and with no downtime.
Associated Requirements	
Scheduled Milestone	Sprint 2
Tester	Users

Test Case TC13 - Front-end Functionalities Conformity

Brief Description	Test whether the front-end design and functionalities address user needs and whether they have any uncovered bugs. For this purpose, a bug report and complaints page will be provided for users to send feedback to the developers.
Expected Result	The system has at most minor bugs and users are pleased by the implemented functionalities.
Associated Requirements	
Scheduled Milestone	Sprint 2
Tester	Users

Test Approach(s)

The acceptance test approach focuses on user feedback as to improve the development process. The main goal of this approach is to observe the disparity between what was executed and what users think of the developed product.

Test Pass / Fail Criteria

Test criteria in this case is fuzzy. We consider no major bugs, short downtime and little complaint feedbacks as a success. A partial fail occurs when some bugs are found, downtime is significant or users are not utterly satisfied with the system. A complete fail happens when a catastrophic aspect occurs that prevents users from using the system at all.

Test Entry / Exit Criteria / Resumption Criteria

Every item must be tested at least once by the users. A test must be resumed whenever a partial or complete fail occurs and the necessary fixes have already been committed. A test stops whenever it is considered as a success and no major changes are required.

Test Deliverables

No deliverables are generated from testing. However, the corresponding issues are moved on Zenhub from "To test/Testing" to "Closed", to indicate that testing was done. Commentaries may be made in the issue to highlight possible problems/other pertinent information.