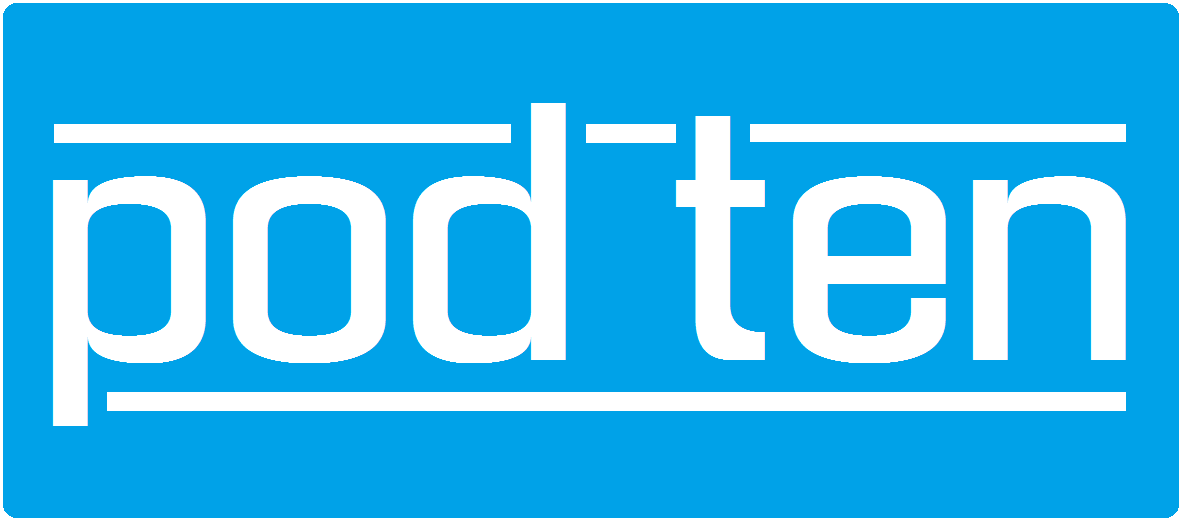
**AirPlan – Online Flight Booking System**

AirPlan Test Plan Document

EECE 419 Assignment #4

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# Introduction

## 1.1 Purpose

The purpose of this document is to help the pod ten engineering team identify, document, and explore potential issues in the functional requirements of AirPlan. This document will help the engineers validate the system structure, flow, and behaviour proposed in the initial architecture document. This document will allow for anticipation of unusual and abnormal scenarios during the implementation stage of the project, thus avoiding having to discover these issues at later stages. This will allow for bugs to be more efficiently exposed and discovered.

## 1.2 Scope

Included in this document are the test cases of the AirPlan flight reservation and management system. This document will serve as a reference guide to testers while they are writing test scripts for the system, and to testers who are executing manual and automated tests on the system. As the Pod Ten team iterates, updates will be made to this document to reflect changes in architecture, design and implementation.

## 1.3 Overview

The test plan has been designed such that there is one set of test cases per use case. Each such set of test cases is linked back to its functional or non-functional requirement through the Requirement ID. Apart from Requirement ID, each test case also has a test case ID, test case name, Test Steps and Test Data, expected result and pass/fail criteria. Test cases for both functional and non-functional requirements are included in this document, and both manual and automated test cases have been described here. The test case name for each test case mentions whether a test case is manual or automated. For manual tests, we have assumed that the test system already has usable test data. If there isn’t, the tester is assumed to be smart enough to identify and rectify the situation. However, for unit tests, we do not make this assumption; instead we specify what test data needs to be inserted for that test case. We also ensure that this test data is removed after the test case has completed execution. For most unit tests, we have also specified example test data to help the test developer write the script faster.

## Notes

1. The requirements document was recently updated to enable the use of requirement IDs in the test plan document. Therefore, while going through the test plan document, please ensure that you are referring to Version 2.0 or later of the Requirements document.
2. Since all users must be logged in to use the AirPlan flight reservation and management system, we have created a set of test cases for user login and have put them in a dedicated section (2.11).

# Test Plan

### 2.1 Search Flight

|  |  |
| --- | --- |
| Requirement ID | F.000 |
| Test Case ID | TCF.000.00 |
| Test Case Name | Manual Test: Correct Search |
| Test Steps and Test Data | Go to search page. Enter criteria for origin, destination and date of flight.  View results. |
| Expected Result | Returns a list of all flights operating between the two locations on that date are returned. |
| Pass Fail Criteria | Pass if all expected flights are returned.  Fail if a valid flight is missing (not returned).  Fail if an invalid flight (not matching the parameters) is returned. |

|  |  |
| --- | --- |
| Requirement ID | F.000 |
| Test Case ID | TCF.000.01 |
| Test Case Name | Manual Test: Incomplete Search |
| Test Steps and Test Data | Go to search page. Enter a search with one of the following fields empty: origin, destination, or date. View result. |
| Expected Result | Return an error message. |
| Pass Fail Criteria | Pass if the error message is displayed and the search does not execute.  Fail if the search executes and the user proceeds to the next step. |

|  |  |
| --- | --- |
| Requirement ID | F.000 |
| Test Case ID | TCF.000.02 |
| Test Case Name | Manual Test: Same Locations |
| Test Steps and Test Data | Go to search page. Search for flights using the same origin and destination.  View result. |
| Expected Result | An error message is displayed and a location must be changed before the search continues |
| Pass Fail Criteria | Pass if the search does not run.  Fail if the search runs and the user proceeds to the next step. |

|  |  |
| --- | --- |
| Requirement ID | F.000 |
| Test Case ID | TCF.000.03 |
| Test Case Name | Manual Test: One Way Flight Search |
| Test Steps and Test Data | Go to search page.  Click on the option to search for one way flights. View updates on page. |
| Expected Result | Options to filter for return flights are unavailable. |
| Pass Fail Criteria | Pass if the search page does not include a return date.  Fail if the search page prompts for a return date. |

|  |  |
| --- | --- |
| Requirement ID | F.000 |
| Test Case ID | TCF.000.04 |
| Test Case Name | Manual Test: Round-trip Flight With No Return Date |
| Test Steps and Test Data | Go to search page. Click on the option to search for a round trip flight. Search using a return date blank. View result. |
| Expected Result | An error message is displayed and the search does not continue |
| Pass Fail Criteria | Pass if an error message is returned and the search does not continue.  Fail if the search proceeds without failure. |

|  |  |
| --- | --- |
| Requirement ID | F.000 |
| Test Case ID | TCF.000.05 |
| Test Case Name | Manual Test: Round-trip Flight Search |
| Test Steps and Test Data | Go to search page. Search for a round-trip flight. |
| Expected Result | Return two sets of flights, one list of departing flights and one list of returning flights. |
| Pass Fail Criteria | Pass if two lists of flights are returned.  Fail if the search returns less or more than two lists. |

|  |  |
| --- | --- |
| Requirement ID | F.000 |
| Test Case ID | TCF.000.06 |
| Test Case Name | Unit Test: Return Search List |
| Test Steps and Test Data | Insert several test flights into the database, to and from different locations and on different dates.  Pass search criteria to FlightService. Delete the several test flights. Example: Add flights 1 and 2 from location A to B, and flights 3 and 4 from location C to D. Search for flights from C to D. |
| Expected Result | Return a database list of all flights exactly matching the criteria. |
| Pass Fail Criteria | Compare the flightIDs of all of the returned flights.  Pass if every ID matches the list of IDs that we expected.  Fail if there is any ID contained in one list that is not in the other list. In the above example, only flights 3 and 4 should return. |

### 2.2 Make a Reservation

|  |  |
| --- | --- |
| Requirement ID | F.001 |
| Test Case ID | TCF.001.00 |
| Test Case Name | Manual Test: Set Reservation |
| Test Steps and Test Data | Go to search page. Search for flights, and select a flight from the flights that are returned.  Select flight options. |
| Expected Result | User is sent to billing page. |
| Pass Fail Criteria | Assert that billing page is loaded. Pass if amounts billed for are correct.  Fail if billing page not returned or wrong billing amounts returned. |

|  |  |
| --- | --- |
| Requirement ID | F.001 |
| Test Case ID | TCF.001.01 |
| Test Case Name | Manual Test: Billing |
| Test Steps and Test Data | Go to search page. Search for flights, and select a flight from the flights that are returned.  Select flight options. Enter billing information and number of points to use. |
| Expected Result | Reservation summary is displayed. |
| Pass Fail Criteria | Assert that reservation summary is loaded and data on this summary is correct. Fail otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.001 |
| Test Case ID | TCF.001.02 |
| Test Case Name | Manual Test: Enter invalid billing information. |
| Test Steps and Test Data | Go to search page. Search for flights, and select a flight from the flights that are returned.  Select flight options. Enter invalid billing information, or try to use more points than are available. |
| Expected Result | An error message is displayed that the billing information is invalid or that account has less points than specified. |
| Pass Fail Criteria | Assert that error message is returned.  Fail if user is allowed to proceed without error message. |

|  |  |
| --- | --- |
| Requirement ID | F.001 |
| Test Case ID | TCF.001.03 |
| Test Case Name | Unit Test: Match flight options to Bookings Table |
| Test Steps and Test Data | Add test data such as flights, flightMappings and users to database.  Create several flight reservations. Fetch flight reservations.  Delete test data. |
| Expected Result | Flight reservations should be entered into the database correctly. |
| Pass Fail Criteria | Pass if all flights with specific input variables appear in the Bookings Table, and FlightMapping links flights properly.  Fail if any of the flights input does not appear in the booked flights list, or FlightMapping does not link flights properly. |

### 2.3 View Transaction History

|  |  |
| --- | --- |
| Requirement ID | F.002 |
| Test Case ID | TCF.002.00 |
| Test Case Name | Manual Test: View transactions for billing paid with credit card with boarding pass not yet printed. |
| Test Steps and Test Data | Create a booking for the user but do not print the boarding pass.  Go to view transaction history page. |
| Expected Result | Display all transactions including recently created booking. The recently created transaction should note that points will be awarded once boarding pass is printed. |
| Pass / Fail Criteria | Pass if correct information is displayed.  Fail if information not displayed or points have been awarded |

|  |  |
| --- | --- |
| Requirement ID | F.002 |
| Test Case ID | TCF.002.01 |
| Test Case Name | Manual Test: View transactions for billing paid with credit card with boarding pass printed. |
| Test Steps and Test Data | Create a booking for the user and print the boarding pass.  Go to view transaction history page. |
| Expected Result | Display all transactions including recently created booking. The recently created transaction should have points awarded equal to the cost of the flight. |
| Pass / Fail Criteria | Pass if correct information is displayed.  Fail if information not displayed or points have not been awarded. |

|  |  |
| --- | --- |
| Requirement ID | F.002 |
| Test Case ID | TCF.002.02 |
| Test Case Name | Manual Test: View transactions for billing paid with points. |
| Test Steps and Test Data | Create a booking for the user paid for with points.  Go to view transaction history page. |
| Expected Result | Display all transactions including recently created booking. The recently created transaction should note it is paid for with points and thus no points will be awarded for the transaction. |
| Pass / Fail Criteria | Pass if correct information is displayed.  Fail if correct information not displayed. |

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| --- | --- |
| Requirement ID | F.002 |
| Test Case ID | TCF.002.08 |
| Test Case Name | Unit Test: Testing valid payment using a credit card. |
| Test Steps and Test Data | Add test data such as account balance, payment status and users to database.  Create balance due on user account.  Confirm payment by credit card.  Delete test data. Example: Create user A with balance $2000 and unpaid status.  Have user A pay his entire balance with his credit card (4111 1111 1111 1111) and expiry date 12/13. |
| Expected Result | Return payment confirmed and display balance due. |
| Pass / Fail Criteria | Pass if bookings and billings table is updated such that balance due is zero, and payment status is paid.  Fail otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.002 |
| Test Case ID | TCF.002.09 |
| Test Case Name | Unit Test: Testing invalid payment using a credit card. |
| Test Steps and Test Data | Add test data such as flight reservations, bookings and billings. Ensure that there is a booking where balance due is greater than zero.  Perform a transaction with an invalid credit card. Delete test data. Example: Create user A with balance $2000 and unpaid status.  Have user A pay his entire balance with his credit card (4111 1111 1111 1111) and expiry date 10/11. |
| Expected Result | Return error code payment not confirmed and display error message. |
| Pass / Fail Criteria | Pass if no updates are made to the loyalty, billings and bookings tables in the database.  Fail otherwise.  In the above example, the error code should indicate an expired credit card. |

|  |  |
| --- | --- |
| Requirement ID | F.002 |
| Test Case ID | TCF.002.10 |
| Test Case Name | Unit Test: Testing valid payment with loyalty points. |
| Test Steps and Test Data | Add test data such flight reservations, bookings and billings.  Ensure that there is a booking where balance due is greater than zero.  Make a payment with loyalty points.  Delete test data.  Example: Create user A with balance $2000 and loyalty points worth $3000 and unpaid status.  Have user A pay his entire balance with loyalty points. |
| Expected Result | Return payment confirmed and displays the user’s updated loyalty points amount. |
| Pass / Fail Criteria | Pass if loyalty points, billings and bookings tables are updated such that balance due is zero, payment status is paid and loyalty points are updated. Fail otherwise.  In the above example, the loyalty points remaining with user A should reduce to $1000. |

|  |  |
| --- | --- |
| Requirement ID | F.002 |
| Test Case ID | TCF.002.11 |
| Test Case Name | Unit Test: Testing invalid payment with loyalty points. |
| Test Steps and Test Data | Add test data such flight reservations, bookings and billings. Ensure that there is a booking where balance due is greater than zero. Try to make a payment with loyalty points such that number of loyalty points used is greater than number of available points.  Delete test data. Example: Create user A with balance $2000 and loyalty points worth $1500 and unpaid status.  Have user A attempt to pay his entire balance with loyalty points. |
| Expected Result | Return error code payment not confirmed and display error message. |
| Pass / Fail Criteria | Pass if no updates are made to the loyalty, billings and bookings tables in the database.  Fail otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.002 |
| Test Case ID | TCF.002.12 |
| Test Case Name | Unit Test: Testing valid payment using both credit card and loyalty points. |
| Test Steps and Test Data | Add test data such flight reservations, bookings and billings. Ensure that there is a booking where balance due is greater than zero. Make a payment using both credit card and loyalty points.  Delete test data. Example: Create user A with balance $2000 and loyalty points worth $1000 and unpaid status.  Have user A pay his balance with $1000 of loyalty points and $1000 of credit card. |
| Expected Result | Return payment confirmed and display balance due and updated loyalty points amount. |
| Pass / Fail Criteria | Pass if loyalty points, billings and bookings tables are updated such that balance due is zero, payment status is paid and loyalty points are updated. Fail otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.002 |
| Test Case ID | TCF.002.13 |
| Test Case Name | Unit Test: Testing an invalid payment using both credit card and loyalty points. |
| Test Steps and Test Data | Add test data such flight reservations, bookings and billings. Ensure that there is a booking where balance due is greater than zero. Make a payment using both credit card and loyalty points such that payment is rejected.  Delete test data. Example: Create user A with balance $2000 and loyalty points worth $1000 and unpaid status.  Have user A attempt to pay his balance with $1000 of loyalty points and $1000 from an expired credit card. |
| Expected Result | Return error code payment not confirmed and display error message specifying problem with credit card or loyalty points or both. |
| Pass / Fail Criteria | Pass if no updates are made to the loyalty, billings and bookings tables in the database.  Fail otherwise.  In the example above, ensure that loyalty points are not deducted, and flight is not booked. |

### 2.4 Modify Booking

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| --- | --- |
| Requirement ID | F.003 |
| Test Case ID | TCF.003.00 |
| Test Case Name | Manual Test: View list of bookings for future flights |
| Test Steps and Test Data | On the homepage, select on “Manage” button. Click on “View Flight Booking” link. |
| Expected Result | A list containing all bookings made by customer for upcoming flights is returned. |
| Pass Fail Criteria | Pass if all bookings made by user are listed. Test if any of the bookings are missing. Test if any booking not made by user is incorrectly listed. |

|  |  |
| --- | --- |
| Requirement ID | F.003 |
| Test Case ID | TCF.003.01 |
| Test Case Name | Manual Test: View booking for an upcoming flight |
| Test Steps and Test Data | On the homepage, select on “Manage” button. Click on “View Flight Bookings” link. Select one of the bookings listed. |
| Expected Result | Information associated with the selected bookings is listed correctly. Departure time & location, Arrival time & location, seat location, flight class. |
| Pass Fail Criteria | Pass if all relevant information is present and listed correctly. Test if some information missing or incorrect. |

|  |  |
| --- | --- |
| Requirement ID | F.003 |
| Test Case ID | TCF.003.02 |
| Test Case Name | Manual Test: Modify seat selection for an upcoming flight |
| Test Steps and Test Data | On the homepage, select on “Manage” button. Click on “View Flight Bookings” link. Select one of bookings listed which user hasn’t printed boarding pass. Click on “Modify Seat Selection” button. Change seat selection to one of the available seats and press save button. After saving, view the booking again to make sure the change were saved correctly. Click modify button again, make sure that the initial seat selection is now free (i.e. can be selected by other user). |
| Expected Result | Changes in seat selection are saved properly. |
| Pass Fail Criteria | Pass if user able to change seat selection and changes are successfully recorded in the ticket table in the database.  Ensure that available seating space on flight is correct after transaction.  Fail otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.003 |
| Test Case ID | TCF.003.03 |
| Test Case Name | Manual Test: Verify cannot modify booking when boarding pass has been printed. |
| Test Steps and Test Data | On the homepage, select on “Manage” button. Click on “View Flight Bookings” link. Select one of the bookings listed which the user has already printed boarding pass for. Verify that the “Modify Seat Selection” button is unavailable. |
| Expected Result | User is unable to modify booking since boarding pass has been printed. |
| Pass Fail Criteria | Pass if buttons for modify booking is unavailable. |

|  |  |
| --- | --- |
| Requirement ID | F.003 |
| Test Case ID | TCF.003.04 |
| Test Case Name | Unit Test: update booking information. |
| Test Steps and Test Data | On the homepage, select on “Manage” button. Click on “View Flight Bookings” link. Select one of the bookings listed which the user hasn’t printed boarding pass for. Click on “Modify Booking” button or “Cancel Booking” button, press “Yes” when asked to confirm. After modifying or cancelling, view the booking list to make sure the booking is marked as modified or cancelled. |
| Expected Result | Booking information associated with the UserID is updated correctly. Departure time & location, Arrival time & location, seat location, flight class. |
| Pass Fail Criteria | Pass if updated Booking information associated with the UserID is returned and a message indicates modification success. Pass if unchanged Booking information associated with the UserID is returned and a message indicates modification is unsuccessful.  Assert that information in booking, flight and billing table is updated correctly.  Test if message indicates modification is unsuccessful and Booking information is updated correctly.  Test if message indicates modification is successful and Booking information is not updated.  Test if Booking information associated with a different UserID is returned.  Test if nothing is returned. |

|  |  |
| --- | --- |
| Requirement ID | F.003 |
| Test Case ID | TCF.003.05 |
| Test Case Name | Unit Test: update Billing information. |
| Test Steps and Test Data | On the homepage, select on “Manage” button. Click on “View Flight Bookings” link. Select one of bookings listed which user hasn’t printed boarding pass. Click on “Modify Booking” button, press Yes when asked to confirm. After modifying or cancelling, view the booking list to make sure the booking is marked as modified or cancelled. |
| Expected Result | Booking information associated with the UserID is updated correctly. Departure time & location, Arrival time & location, seat location, flight class. |
| Pass Fail Criteria | Pass if updated Billing information associated with the UserID is returned and a message indicates modification success. Pass if unchanged Billing information associated with the UserID is returned and a message indicates modification is unsuccessful.  Assert that information in billing, booking and flight table is updated.  Test if message indicates modification is unsuccessful and Billing information is updated.  Test if message indicates modification is successful and Billing information is not updated.  Test if Billing information associated with a different UserID is returned.  Test if nothing is returned. |

### 2.5 View and Print Boarding Passes

|  |  |
| --- | --- |
| Requirement ID | F.004 |
| Test Case ID | TCF.004.00 |
| Test Case Name | Manual Test: Testing view boarding pass with valid booking id. |
| Test Steps and Test Data | Click on Manage Bookings. Select a booking from list of bookings to view booking details. Click on print boarding pass(es) button. Ensure boarding pass(es) are printed correctly. |
| Expected Result | Associated boarding passes are printed correctly. |
| Pass Fail Criteria | Fail if any incorrect boarding pass is printed. Fail if any associated boarding passes are not printed.  Fail if user is still allowed to cancel flight. Pass otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.004 |
| Test Case ID | TCF.004.01 |
| Test Case Name | Manual Test: Testing view boarding pass with already confirmed booking id. |
| Test Steps and Test Data | Click on Manage Bookings. Select a booking that is already confirmed from list of bookings to view details. Click on print boarding pass(es) button. Ensure boarding pass(es) are printed correctly. |
| Expected Result | Associated boarding passes are printed correctly. |
| Pass Fail Criteria | Fail if any incorrect boarding pass is printed.  Fail if any associated boarding passes are not printed. Fail if user is awarded points for printing boarding pass.  Fail if user is allowed to cancel flight. Pass otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.004 |
| Test Case ID | TCF.004.02 |
| Test Case Name | Manual Test: Testing print boarding pass of booking that has not been confirmed yet. |
| Test Steps and Test Data | Click on Manage Bookings. Select a booking that is not yet already confirmed from list of bookings to view details. Click on print boarding pass(es) button. Ensure boarding pass(es) are printed correctly. |
| Expected Result | Associated boarding passes are printed correctly. |
| Pass Fail Criteria | Fail if any incorrect boarding pass is printed.  Fail if any associated boarding passes are not printed. Fail if user is not awarded any required points.  Fail if user is allowed to cancel flight. Pass otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.004 |
| Test Case ID | TCF.004.06 |
| Test Case Name | Unit Test: Testing get boarding pass with a valid booking id |
| Test Steps and Test Data | Query a boarding pass with a valid input booking id |
| Expected Result | Return boarding pass information for the corresponding booking id |
| Pass Fail Criteria | Assert that the booking id is valid, and the booking has not been confirmed yet.  Fail otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.004 |
| Test Case ID | TCF.004.07 |
| Test Case Name | Unit Test: Testing get boarding pass with an already confirmed booking id. |
| Test Steps and Test Data | Query an already-confirmed boarding pass with a valid input booking id |
| Expected Result | Return error code already confirmed |
| Pass Fail Criteria | Assert that booking id is valid, and that the booking has already been confirmed.  Pass if correct error code is returned. Fail otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.004 |
| Test Case ID | TCF.004.08 |
| Test Case Name | Unit Test: Testing get boarding pass with an invalid booking id |
| Test Steps and Test Data | Query a boarding pass with an invalid input id |
| Expected Result | Return error code invalid booking id |
| Pass Fail Criteria | Assert that booking id is invalid.  Pass if correct error code is returned.  Fail otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.004 |
| Test Case ID | TCF.004.09 |
| Test Case Name | Unit Test: Testing confirm booking upon successful printing. |
| Test Steps and Test Data | Print a valid boarding pass. |
| Expected Result | Flight mappings associated with the printed boarding pass’s booking id are all marked as confirmed. |
| Pass Fail Criteria | Pass if for all flight mappings in this booking, confirmed flag is set to true. Fail otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.004 |
| Test Case ID | TCF.004.10 |
| Test Case Name | Unit Test: Testing confirm booking upon unsuccessful printing. |
| Test Steps and Test Data | Attempt to print a boarding pass that cannot be printed. |
| Expected Result | State before print attempt equals state after print attempt. |
| Pass Fail Criteria | Pass if for all flights in this booking, confirmed flag is unchanged. Fail otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.004 |
| Test Case ID | TCF.004.11 |
| Test Case Name | Unit Test: Testing update points if booking was paid by cash/credit card |
| Test Steps and Test Data | Reserve a flight paid fully with cash/credit.  Print boarding pass for that flight. |
| Expected Result | New loyalty points are added to corresponding user’s account with corresponding booking id |
| Pass Fail Criteria | Assert that flight is booked and fully paid for.  Assert that confirmed flag for booking is set to true, and loyalty points have been awarded.  Fail otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.004 |
| Test Case ID | TCF.004.12 |
| Test Case Name | Unit Test: Testing update points if booking was paid by points |
| Test Steps and Test Data | Reserve a flight paid at least partially with loyalty points.  Print boarding pass for that flight. |
| Expected Result | User’s loyalty point is unchanged, new entry is added to Points table where amount is 0 |
| Pass Fail Criteria | Pass if booking confirmed flag == true and paid by cash amount == 0 and current points total == previous points total and date modified == boarding pass print date. Fail otherwise. |

|  |  |
| --- | --- |
| Requirement ID | F.004 |
| Test Case ID | TCF.004.15 |
| Test Case Name | Unit Test: Testing update points for unconfirmed booking. |
| Test Steps and Test Data | Request to update points for a booking is not confirmed. |
| Expected Result | Return error code booking not confirmed |
| Pass Fail Criteria | Pass if booking confirmed flag is unchanged and correct error code is returned. Fail otherwise. |

**2.4 Cancel Booking**

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| --- | --- |
| Requirement ID | F.005 |
| Test Case ID | TCF.005.00 |
| Test Case Name | Manual Test: View list of bookings for future flights |
| Test Steps and Test Data | On the homepage, select the “Manage” button. Click on “View Bookings” link. |
| Expected Result | A list containing all bookings made by customer for upcoming flights is returned. |
| Pass Fail Criteria | Pass if all upcoming bookings made by user are listed. Test if any of the bookings is missing. Test if any booking not made by user is incorrectly listed. |

|  |  |
| --- | --- |
| Requirement ID | F.005 |
| Test Case ID | TCF.005.01 |
| Test Case Name | Manual Test: View booking for an upcoming flight |
| Test Steps and Test Data | On the homepage, select on “Manage” button. Click on “View Bookings” link. Select one of the bookings listed. |
| Expected Result | Information associated with the selected booking is listed correctly. Departure time & location, Arrival time & location, seat location, flight class. |
| Pass Fail Criteria | Pass if all relevant information is present and listed correctly. Test if some information missing or incorrect. |

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| Requirement ID | F.005 |
| Test Case ID | TCF.005.02 |
| Test Case Name | Manual Test: Verify cannot cancel booking after boarding pass has been viewed. |
| Test Steps and Test Data | On the homepage, select on “Manage” button. Click on “View Bookings” link. Select one of booking listed which user has printed boarding pass for. Verify that the “Cancel Booking” button is unavailable. |
| Expected Result | User is unable to cancel booking since boarding pass has been viewed. |
| Pass Fail Criteria | Pass if buttons for cancel booking are not available. |

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| Requirement ID | F.005 |
| Test Case ID | TCF.005.03 |
| Test Case Name | Unit Test: update Booking information. |
| Test Steps and Test Data | On the homepage, select on “Manage” button. Click on “View Flight Bookings” link. Select one of bookings listed which user hasn’t printed boarding pass. Click on “Cancel Booking” button, press “Yes” when asked to confirm. After cancelling, view the booking list to make sure the booking is marked as cancelled. |
| Expected Result | Booking information associated with the UserID is updated correctly. Departure time & location, Arrival time & location, seat location, flight class. |
| Pass Fail Criteria | Pass if updated Booking information associated with the UserID is returned and a message indicates modification success. Pass if unchanged Booking information associated with the UserID is returned and a message indicates modification is unsuccessful.  Assert that information in booking, flight and billing table is updated correctly.  Test if message indicates modification is unsuccessful and Booking information is updated.  Test if message indicates modification is successful and Booking information is not updated.  Test if Booking information associated with a different UserID is returned.  Test if nothing is returned. |

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| --- | --- |
| Requirement ID | F.005 |
| Test Case ID | TCF.005.04 |
| Test Case Name | Unit Test: update Billing information. |
| Test Steps and Test Data | On the homepage, select on “Manage” button. Click on “View Flight Bookings” link. Select one of bookings listed which user hasn’t printed boarding pass. Click on “Cancel Booking” button, press Yes when asked to confirm. After modifying or cancelling, view the booking list to make sure the booking is marked cancelled. |
| Expected Result | Booking information associated with the UserID is updated correctly. Departure time & location, Arrival time & location, seat location, flight class. |
| Pass Fail Criteria | Pass if updated Billing information associated with the UserID is returned and a message indicates modification success. Pass if unchanged Billing information associated with the UserID is returned and a message indicates modification is unsuccessful.  Assert that information in billing, booking and flight table is updated.  Test if message indicates modification is unsuccessful and Billing information is updated.  Test if message indicates modification is successful and Billing information is not updated.  Test if Billing information associated with a different UserID is returned.  Test if nothing is returned. |

### 2.6 View Flight Manifest (Airline Staff)

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| Requirement ID | F.100 |
| Test Case ID | TCF.100.00 |
| Test Case Name | Manual Test: Getting a list of flight manifests (staff level) |
| Test Steps and Test Data | Go to the flight manifest page by selecting "View Flight Manifests" from menu. |
| Expected Result | List of flight manifests available for viewing is retrieved and displayed. |
| Pass / Fail Criteria | Pass if list of flight manifests is correctly displayed. Fail if staff can view flight manifests they should not have access to. Fail if staff cannot view flight manifests they should have access to. Fail if there is insufficient error management (e.g. when list is unavailable / inaccessible). |

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| --- | --- |
| Requirement ID | F.100 |
| Test Case ID | TCF.100.01 |
| Test Case Name | Manual Test: Viewing a specific flight manifest |
| Test Steps and Test Data | Select "View Flight Manifests" from menu. Select a flight from the list of flight manifests. |
| Expected Result | Correct flight manifest is displayed for the selected flight. |
| Pass / Fail Criteria | Pass if correct flight manifest is displayed. Fail if staff cannot view flight manifest they should have access to.  Fail is there is insufficient error management (e.g. when manifest is unavailable / inaccessible). |

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| --- | --- |
| Requirement ID | F.100 |
| Test Case ID | TCF.100.02 |
| Test Case Name | Manual Test: Return to list and select another flight manifest |
| Test Steps and Test Data | Select "View Flight Manifests" from menu. Select a flight from list of flight manifests. Click "Return to List" after selecting a flight. Select another flight from list. |
| Expected Result | Correct flight manifest is displayed for the selected flight. |
| Pass / Fail Criteria | Fail if staff can view flight manifests they should not have access to after returning to list. Fail if staff cannot view flight manifests they should have access to after returning to list. Fail if the second manifest displayed is an incorrect one. Fail if there is insufficient error management.  Pass otherwise. |

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| Requirement ID | F.100 |
| Test Case ID | TCF.100.03 |
| Test Case Name | Manual Test: Viewing details of a flight manifest |
| Test Steps and Test Data | Select "View Flight Manifests" from menu. Select a flight from list of flight manifests. Select a specific seat on the manifest. |
| Expected Result | Correct passenger's name is displayed, along with their meal plan, and seating class. |
| Pass / Fail Criteria | Fail if incorrect seat code displayed. Fail if incorrect passenger name displayed. Fail if incorrect meal plan for the passenger. Fail if incorrect seating class for the passenger.  Pass otherwise. |

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| --- | --- |
| Requirement ID | F.100 |
| Test Case ID | TCF.100.04 |
| Test Case Name | Manual Test: Return to manifest and view another seat’s details |
| Test Steps and Test Data | Select "View Flight Manifests" from menu. Select a flight from list of flight manifests. Select a specific seat on the manifest. Click "Return to Manifest" after selecting a seat. Select another seat from manifest. |
| Expected Result | Correct passenger's name is displayed, along with their meal plan, and seating class. |
| Pass / Fail Criteria | Fail if incorrect manifest is returned.  Fail if incorrect seat code displayed. Fail if incorrect passenger name displayed. Fail if incorrect meal plan for the passenger. Fail if incorrect seating class for the passenger.  Pass otherwise. |

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| --- | --- |
| Requirement ID | F.100 |
| Test Case ID | TCF.100.05 |
| Test Case Name | Unit Test: Retrieve list of accessible flight manifests |
| Test Steps and Test Data | Request all flight manifests available for a staff member.  Example: Assign staff A to place YVR |
| Expected Result | List / array of flight manifests returned. Only flights with the destination or origin matching the staff’s location are returned. |
| Pass / Fail Criteria | Pass if it returns flight manifest(s) that staff has access to (permissions).  Fail if it does not return flight manifest(s) staff has access to. Fail if it returns flight manifest(s) that staff doesn’t have access to. In the example above, only flights with origin/destination of YVR should be returned. |

### 2.7 View Flight Manifest (Airline Managers)

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| Requirement ID | F.101 |
| Test Case ID | TCF.101.00 |
| Test Case Name | Manual Test: Getting a list of flight manifests (manager level) |
| Test Steps and Test Data | Select "View Flight Manifests". |
| Expected Result | Select Flight Manifest page displayed. |
| Pass / Fail Criteria | Pass if correct search page displayed. Pass if all fields on page are correctly labeled and populated. Fail if there is insufficient error management. |

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| --- | --- |
| Requirement ID | F. 101 |
| Test Case ID | TCF. 101.02 |
| Test Case Name | Manual Test: Select flight Manifest |
| Test Steps and Test Data | Select "View Flight Manifests" from menu. |
| Expected Result | All flights are displayed. |
| Pass / Fail Criteria | All flights are displayed. Fail if there is insufficient error management (e.g. no error message when no flights match criteria, etc).  Pass otherwise. |

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| --- | --- |
| Requirement ID | F. 101 |
| Test Case ID | TCF. 101.03 |
| Test Case Name | Manual Test: View a specific flight manifest. |
| Test Steps and Test Data | Select "View Flight Manifests" from menu. Select a flight from list of flight manifests. |
| Expected Result | Correct flight manifest is displayed for the selected flight. |
| Pass / Fail Criteria | Pass if the correct flight manifest is displayed. Fail if no proper error message displayed when manifest is unavailable/inaccessible. Fail if manager cannot view flight manifest they should have access to. Fail if there is insufficient error management |

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| --- | --- |
| Requirement ID | F. 101 |
| Test Case ID | TCF. 101.04 |
| Test Case Name | Manual Test: Return to manifest list and select another flight manifest |
| Test Steps and Test Data | Select "View Flight Manifests" from menu. Select a flight from list of flight manifests. Click "Return to manifest list". Select another flight from the list. |
| Expected Result | Correct flight manifest is displayed for the selected flight. |
| Pass / Fail Criteria | Pass if correct flight manifest is displayed. Fail if manager cannot view flight manifest they should have access to. Fail if there is insufficient error management (e.g. when manifest is unavailable/inaccessible). |

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| --- | --- |
| Requirement ID | F. 101 |
| Test Case ID | TCF. 101.05 |
| Test Case Name | Manual Test: Viewing details of a seat on flight manifest. |
| Test Steps and Test Data | Select "View Flight Manifests" from menu. Fill out criteria fields and submit form. Select a flight from list of flight manifests. Select a specific seat on the manifest. |
| Expected Result | Correct passenger's name is displayed, along with their meal plan, and seating class. |
| Pass / Fail Criteria | Fail if incorrect seat code displayed. Fail if incorrect passenger name displayed. Fail if incorrect meal plan for the passenger. Fail if incorrect seating class for the passenger. Fail if there is insufficient error management.  Pass otherwise. |

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| --- | --- |
| Requirement ID | F. 101 |
| Test Case ID | TCF. 101.06 |
| Test Case Name | Manual Test: Return to manifest and view another seat’s details. |
| Test Steps and Test Data | Select "View Flight Manifests" from menu. Fill out criteria fields and submit form. Select a flight from list of flight manifests. Select a specific seat on the manifest. Click "Return to Manifest" after selecting a seat. Select another seat from manifest. |
| Expected Result | Correct passenger's name is displayed, along with their meal plan, and seating class. |
| Pass / Fail Criteria | Fail if incorrect manifest is returned. Fail if incorrect seat code displayed. Fail if incorrect passenger name displayed. Fail if incorrect meal plan for the passenger. Fail if incorrect seating class for the passenger. Fail if there is insufficient error management.  Pass otherwise. |

### 2.8 View Flight Statistics

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| Requirement ID | F.102 |
| Test Case ID | F.102.0 |
| Test Case Name | Manual Test: View flight statistics search page. |
| Test Steps and Test Data | Select view flight statistics from menu. |
| Expected Result | You are taken to the flight statistics search page. |
| Pass Fail Criteria | Pass if link leads to correct page.  Pass if search fields function correctly.  Fail otherwise. |

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| Requirement ID | F.102 |
| Test Case ID | F.102.1 |
| Test Case Name | Manual Test: View flight statistics page. |
| Test Steps and Test Data | Go to the flight statistics search page, and specify search criteria in Search / Filter flights page. |
| Expected Result | User is taken from the flight statistics search page to the flight statistics page and the correct statistics (historical and most popular destination) are displayed. |
| Pass Fail Criteria | Fail if flight statistic is not reached.  Fail if statistics are displayed incorrectly.  Fail if statistics did not follow search criteria.  Pass otherwise. |

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| Requirement ID | F.102 |
| Test Case ID | F.102.2 |
| Test Case Name | Manual Test: View historical statistics |
| Test Steps and Test Data | Go to flight statistics search page.  Enter criteria into search fields and submit form. |
| Expected Result | You are taken to the flight statistics page, and historical statistics are displayed. |
| Pass Fail Criteria | Fail if past statistics are displayed incorrectly.  Fail if past statistics are missing.  Fail if link does not lead to correct page.  Pass otherwise. |

### 2.9 Modify Booking on behalf of customer

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| Requirement ID | F.103 |
| Test Case ID | TC F.103.0 |
| Test Case Name | Manual Test: Manager view bookings page loading. |
| Test Steps and Test Data | Click view booking option from top menu.  Manager enters customer’s email address. |
| Expected Result | Page for manager to view customers’ bookings are displayed. |
| Pass Fail Criteria | Pass if page for manager to view customers’ bookings is displayed. Fail if other pages are loaded after click. |

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| --- | --- |
| Requirement ID | F.103 |
| Test Case ID | TC F.103.1 |
| Test Case Name | Manual Test: Manager updates bookings. |
| Test Steps and Test Data | Click update booking menu from top. |
| Expected Result | Page for manager to update customers’ booking is displayed. |
| Pass Fail Criteria | Pass if page for manager to update customers’ booking is displayed. Fail if other pages are loaded after click. |

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| Requirement ID | F.103 |
| Test Case ID | TC F.103.2 |
| Test Case Name | Unit Test: get user information. |
| Test Steps and Test Data | Manager searches for user information using customer’s email address. |
| Expected Result | User information with the same email address is returned or error message indicates no user found. |
| Pass Fail Criteria | Pass if information returned has the same email address as the searched one. Pass if information returned shows no user is found. Fail if information of different email address is displayed.  Fail if nothing is displayed. |

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| --- | --- |
| Requirement ID | F.103 |
| Test Case ID | TC F.103.3 |
| Test Case Name | Unit Test: get booking information. |
| Test Steps and Test Data | Manager searches for customer’s Booking information using customer’s email address. |
| Expected Result | Booking information of the same email address is returned or message shows no booking information of the email address is found. |
| Pass Fail Criteria | Pass if booking information of the same email address is returned. Pass if message shows no booking information of the email address is found. Fail if booking information of a different email address is returned. Fail if nothing is returned. |

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| Requirement ID | F.103 |
| Test Case ID | TC F.103.4 |
| Test Case Name | Unit Test: get Flight information. |
| Test Steps and Test Data | Manager searches customer’s Booking information using customer’s email address. |
| Expected Result | Flight information with the same email address is returned or error message indicates no information of the corresponding email address is found. |
| Pass Fail Criteria | Pass if flight information of the same email address is returned. Pass if message indicates no information of the corresponding email address is found. Fail if information of different email address is returned. Fail if nothing is returned. |

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| Requirement ID | F.103 |
| Test Case ID | TC F.103.5 |
| Test Case Name | Unit Test: get Billing information. |
| Test Steps and Test Data | Manager searches customer’s Booking information using customer’s email address. |
| Expected Result | Billing information with the same email address is returned or message indicates no information of the corresponding email address is found. |
| Pass Fail Criteria | Pass if Billing information with the same email address is returned  Pass if message indicates no information of the corresponding email address is found Fail if billing information of a different email address is returned Fail if nothing is returned |

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| Requirement ID | F.103 |
| Test Case ID | TC F.103.6 |
| Test Case Name | Unit Test: update booking information. |
| Test Steps and Test Data | Manager modifies customer’s booking and presses submit button. |
| Expected Result | Booking information with the same customer email address is updated and returned or message indicates modification is unsuccessful. |
| Pass Fail Criteria | Pass if Booking information with the same email address is updated and returned. Pass if error message indicates modification is unsuccessful. Fail if Booking information is not changed with no error message shows modification failure. Fail if Booking information changes with error message indicates modification failure. Fail if Booking information of a different email address is changed. |

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| --- | --- |
| Requirement ID | F.103 |
| Test Case ID | TC F.103.7 |
| Test Case Name | Unit Test: update Billing information. |
| Test Steps and Test Data | Manager modifies customer’s booking and presses submit button. |
| Expected Result | Billing information with the same email address is updated and returned or message indicates modification is failed. |
| Pass Fail Criteria | Pass if Billing information with the same email address is updated and returned. Pass if message indicates modification is failed. Fail if Billing information does not change with no error message indicates modification failure. Fail if Billing information changes with error message indicates modification failure Fail if Billing information of a different email address is changed |

**2.9 Cancel Booking on behalf of customer**

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| Requirement ID | F.104 |
| Test Case ID | TC F.104.0 |
| Test Case Name | Manual Test: Manager view bookings page loading. |
| Test Steps and Test Data | Click view booking option from top menu.  Manager enters customer’s email address. |
| Expected Result | Page for manager to view customers’ bookings are displayed. |
| Pass Fail Criteria | Pass if page for manager to view customers’ bookings is displayed. Fail if other pages are loaded after click. |

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| --- | --- |
| Requirement ID | F.104 |
| Test Case ID | TC F.104.1 |
| Test Case Name | Manual Test: Manager updates bookings. |
| Test Steps and Test Data | Click update booking menu from top. |
| Expected Result | Page for manager to update customers’ booking is displayed. |
| Pass Fail Criteria | Pass if page for manager to update customers’ booking is displayed. Fail if other pages are loaded after click. |

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| Requirement ID | F.104 |
| Test Case ID | TC F.104.2 |
| Test Case Name | Unit Test: get user information. |
| Test Steps and Test Data | Manager searches for user information using customer’s email address. |
| Expected Result | User information with the same email address is returned or error message indicates no user found. |
| Pass Fail Criteria | Pass if information returned has the same email address as the searched one. Pass if information returned shows no user is found. Fail if information of different email address is displayed.  Fail if nothing is displayed. |

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| --- | --- |
| Requirement ID | F.104 |
| Test Case ID | TC F.104.3 |
| Test Case Name | Unit Test: get booking information. |
| Test Steps and Test Data | Manager searches for customer’s Booking information using customer’s email address. |
| Expected Result | Booking information of the same email address is returned or message shows no booking information of the email address is found. |
| Pass Fail Criteria | Pass if booking information of the same email address is returned. Pass if message shows no booking information of the email address is found. Fail if booking information of a different email address is returned. Fail if nothing is returned. |

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| --- | --- |
| Requirement ID | F.104 |
| Test Case ID | TC F.104.4 |
| Test Case Name | Unit Test: get Flight information. |
| Test Steps and Test Data | Manager searches customer’s Booking information using customer’s email address. |
| Expected Result | Flight information with the same email address is returned or error message indicates no information of the corresponding email address is found. |
| Pass Fail Criteria | Pass if flight information of the same email address is returned. Pass if message indicates no information of the corresponding email address is found. Fail if information of different email address is returned. Fail if nothing is returned. |

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| Requirement ID | F.104 |
| Test Case ID | TC F.104.5 |
| Test Case Name | Unit Test: get Billing information. |
| Test Steps and Test Data | Manager searches customer’s Booking information using customer’s email address. |
| Expected Result | Billing information with the same email address is returned or message indicates no information of the corresponding email address is found. |
| Pass Fail Criteria | Pass if Billing information with the same email address is returned  Pass if message indicates no information of the corresponding email address is found Fail if billing information of a different email address is returned Fail if nothing is returned |

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| Requirement ID | F.104 |
| Test Case ID | TC F.104.6 |
| Test Case Name | Unit Test: update booking information. |
| Test Steps and Test Data | Manager cancels customer’s booking and presses submit button. |
| Expected Result | Booking information with the same customer email address is updated and booking is removed or message indicates cancellation is unsuccessful. |
| Pass Fail Criteria | Pass if Booking information with the same email address is updated and booking is removed. Pass if error message indicates cancellation is unsuccessful. Fail if Booking information is not changed with no error message shows cancellation failure. Fail if Booking information changes with error message indicates cancellation failure. Fail if Booking information of a different email address is changed. |

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| --- | --- |
| Requirement ID | F.104 |
| Test Case ID | TC F.104.7 |
| Test Case Name | Unit Test: update Billing information. |
| Test Steps and Test Data | Manager cancels customer’s booking and presses submit button. |
| Expected Result | Billing information with the same email address is updated and returned or message indicates cancellation is failed. |
| Pass Fail Criteria | Pass if Billing information with the same email address is updated and returned. Pass if message indicates cancellation is failed. Fail if Billing information does not change with no error message indicates cancellation failure. Fail if Billing information changes with error message indicates cancellation failure. Fail if Billing information of a different email address is changed |

### 2.10 Non Functional Requirements

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| Requirement ID | SEC.0 |
| Test Case ID | TC SEC.0.00 |
| Test Case Name | User data security |
| Test Steps and Test Data | Request Pod Ten for data about a particular customer. |
| Expected Result | Access to user data should not be granted without valid authorization such as a police warrant. |
| Pass Fail Criteria | Fail if access is granted without valid authorization. Fail if access is not granted with proper authorization. |

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| --- | --- |
| Requirement ID | SEC.0 |
| Test Case ID | TC SEC.0.01 |
| Test Case Name | Policy regarding selling user data |
| Test Steps and Test Data | Request Pod Ten to setup a data sharing agreement with an advertising company. |
| Expected Result | Request must be denied as this is against Pod Ten company policy and user agreement. |
| Pass Fail Criteria | Fail if request is not denied. |

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| Requirement ID | OPE.0 |
| Test Case ID | TC OPE.0.00 |
| Test Case Name | Transaction logging |
| Test Steps and Test Data | Open logs. Check if significant user transactions are logged. This includes user registration, reservation of flight tickets, printing of boarding pass, cancellation of reservation. |
| Expected Result | All significant transactions should be logged in a verbose manager, along with timestamp, user Id and prior and new values (if applicable) of database objects. |
| Pass Fail Criteria | Fail if any such transaction is not logged. Fail if logs are not understandable to someone with basic knowledge of system. Fail if logs do not include timestamp, user Id, and prior and new values (if applicable) |

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| --- | --- |
| Requirement ID | OPE.1 |
| Test Case ID | TC OPE.1.00 |
| Test Case Name | Uptime |
| Test Steps and Test Data | Check for availability at random times between 6:00am and 1:00am. |
| Expected Result | The site should be up at all times, unless prior notification has been sent to users. |
| Pass Fail Criteria | Fail if the site is not up at any given time between 6:00am and 1:00am without prior notification. |

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| Requirement ID | INT.0 |
| Test Case ID | TC INT.0.00 |
| Test Case Name | Platform independence |
| Test Steps and Test Data | Try using various features of the website on Google Chrome on different operating systems including Windows, Mac OSX, Ubuntu. |
| Expected Result | The site should run properly on each operating system. |
| Pass Fail Criteria | Fail if the site is not loaded properly on any operating system, or if the site requests the user to switch to another operating system. |

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| --- | --- |
| Requirement ID | PER.0 |
| Test Case ID | TC PER.0.00 |
| Test Case Name | Responsiveness |
| Test Steps and Test Data | Try using various features of the website. Measure the response time of each action. |
| Expected Result | No user action should have a response time of more than 0.1 seconds. |
| Pass Fail Criteria | Fail if any user action results in response time of more than 0.1 seconds. |

### User Login Cases

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| --- | --- |
| Test Case ID | TC.00 |
| Test Case Name | Manual Test: Valid ID and Valid Password. |
| Test Steps | Go to homepage. Login with valid user name and password. |
| Expected Result | User is logged into the system and is directed to homepage. |
| Pass Fail Criteria | Pass if user is logged in and is redirected to search page. User’s session must also be created. Fail otherwise. |

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| --- | --- |
| Test Case ID | TC.01 |
| Test Case Name | Manual Test: User Name Or Password Not Filled In |
| Test Steps | Go to homepage. Input only user name, or only password, or neither and try to login. |
| Expected Result | Return an error message stating user is missing user name, password or both. |
| Pass Fail Criteria | Pass if the error message is displayed and the user is not logged in. Fail if the user is logged in without password, or error message not displayed. |

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| Test Case ID | TCF.005.02 |
| Test Case Name | Manual Test: Valid User Name, Invalid Password |
| Test Steps | Go to homepage. Input user name and incorrect password and try to login. |
| Expected Result | Display an error message stating that credentials are incorrect, user is not logged in. |
| Pass Fail Criteria | Pass if user is not logged in and error message is displayed. Fail if user is logged in and error message not displayed. |

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| Test Case ID | TCF.005.03 |
| Test Case Name | Manual Test: User Does Not Exist |
| Test Steps | Go to homepage. Input invalid email address and try to login. |
| Expected Result | Display an error message stating that credentials are incorrect. |
| Pass Fail Criteria | Pass if the error message is displayed.  Fail if the error message is not displayed or the user is logged in under invalid user id. |

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| Test Case ID | TCF.005.04 |
| Test Case Name | Manual Test: Create new user |
| Test Steps | Go to homepage.  Click on ‘New User?’.  Input new user name and password and re-enter the password. |
| Expected Result | User account is created with input user name and password. |
| Pass Fail Criteria | Pass if account is created and user can log in. User must also be logged in and redirected to search page. Session must be created.  Fail otherwise. |

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| Test Case ID | TCF.005.05 |
| Test Case Name | Manual Test: Create New User – Missing Input Field |
| Test Steps | Go to homepage. Select ‘Create New User’.  Input either a user name, or a password, or neither. |
| Expected Result | Return an error message stating user is missing user name, password or both. |
| Pass Fail Criteria | Pass if the error message is displayed and the new user account is not created. Fail if the new user account is created with user name alone, or error message is not displayed. |

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| Test Case ID | TCF.005.06 |
| Test Case Name | Manual Test: Create New User – User Name Already Exists |
| Test Steps | Go to homepage. Select ‘Create New User’.  Use an email address that already exists in system. |
| Expected Result | Display an error message stating that the email address has already been used. |
| Pass Fail Criteria | Pass if user account is not created under duplicate email address, and error message is displayed. Fail if user account is created under duplicate email address, and error message not displayed. |

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| Test Case ID | TCF.005.07 |
| Test Case Name | Manual Test: Test user action while not logged in |
| Test Steps | Enter a valid URL with valid parameters into address bar. Ensure that user is not logged in. |
| Expected Result | User is redirected to login page. |
| Pass Fail Criteria | Pass if the user is redirected and the user is not allowed to view result of URL that was typed in. |