|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test Case | Test Case Description | Actor | Precondition | Expected Result | Steps | Result |
| 1. | Booking the cheapest flight with flights in the system. | User | To be logged in & to have flights in the system. | A flight has been booked and a ticket linked to the user. | 1. The user presses “Cheapest flights”  2. System displays a list of ten cheapest flights.  3. User selects a flight from the list.  4. User presses “Book”.  5. The system displays a list of available seats.  6. The user chooses a seat.  7. The user presses “Confirm”. | A flight has been booked and a ticket linked to the user. |
| 2. | Booking a flight that is today. | User | To be logged in & to have flights in the system. | A flight has been booked and a ticket linked to the user. | 1. The user presses “Todays flights  2. System displays a list of flights that are today.  3. User selects a flight from the list.  4. User presses “Book”.  5. The system displays a list of available seats.  6. The user chooses a seat.  7. The user presses “Confirm”. | A flight has been booked and a ticket linked to the user. |
| 3. | Booking a flight that has a certain origin, destination, date of departure and arrival. | User | To be logged in & to have flights in the system. | A flight has been booked and a ticket linked to the user. | 1. The user selects an origin, destination, date of departure and date of arrival.  2. The user presses the button “Search”.  3. User selects a flight from the list.  4. User presses “Book”.  5. The system displays a list of available seats.  6. The user chooses a seat.  7. The user presses “Confirm”. | A flight has been booked and a ticket linked to the user. |
| 4. | Booking the cheapest flights while there are no flights. | User | To be logged in & to not have flights in the system | The system displays a message “no flights” | 1. The user presses “Cheapest flights” | The system displays a message “no flights” |
| 5. | Booking a flight from today while there are no flights. | User | To be logged in & to not have flights in the system | The system displays a message “no flights for today” | 1. The user presses “Today’s flights” | The system displays a message “no flights for today” |
| 6. | Booking a flight that has a certain origin, destination, date of departure and arrival while there are no flights. | User | To be logged in & to not have flights in the system | The system displays a message “no flights” | 1. The user selects an origin, destination, date of departure and date of arrival.  2. The user presses the button “Search”. | The system displays a message “no flights” |
| 7. | Booking a flight that has a certain origin, destination, date of departure arrival while not selecting the date of departure and date of arrival. | User | To be logged in. | The system displays a message “Please use the date choosers to select date” | 2. The user presses “Search” | The system displays a message “Please use the date choosers to select date” |
| 8. | Booking a flight that has been already booked. | User | To be logged in & be booking a selected flight. | The system displays the message “You already booked a ticket for this flight!” | 1. The system displays a list of available seats.  2. The user chooses a seat.  3. The user presses “Confirm”. | The system displays the message “You already booked a ticket for this flight!” |
| 9. | Booking a flight that has been already deleted. | User | To be logged in & be booking a selected flight that has been deleted from the system. | The system displays the message “Flight was removed by the administrator!” | 1. The system displays a list of available seats.  2. The user chooses a seat.  3. The user presses “Confirm”. | The system displays the message “Flight was removed by the administrator!” |
| 10 | Booking a flight that has not been selected. | User | To be logged in & having searched for flights. | The system displays the message “Please select a flight to book!” | 1. The user presses “Cheapest flights”  2. System displays a list of ten cheapest flights.  3. User presses “Book”. | The system displays the message “Please select a flight to book!” |
| 11. | Removing a booked ticket. | User | To be logged in & have a flight booked. | Ticket removed. | 1. The user presses “My profile” and then “View profile”  2. User selects a ticket from “My flight history”  3. User presses “Cancel ticket”  4. The system displays a message “Are you sure you want to cancel the ticket?”  5. The user presses “Yes” | The ticket has been removed. |
| 12. | Removing a ticket while not selecting one. | User | To be logged in & have a flight booked. | The system displays the message “Please select a flight to remove!” | 1. The user presses “My profile” and then “View profile”  2. User presses “Cancel ticket” | The system displays the message “Please select a flight to remove!” |
| 13. | Adding a flight. | Administrator | No precondition | The system displays the message “Successfully added” and a flight is added. | 1. Administrator chooses origin city, destination city, departure date, arrival date, departure time, arrival time and types in the price.  2. Administrator validates his choice. | The system displays the message “Successfully added” and a flight is added. |
| 14. | Removing a flight without searching. | Administrator | Having flights in the system | System displays the message “Successfully removed” and the flight is removed. | 1. System displays a list of all flights;  2. Administrator selects the specific flight to remove;  3. Administrator validates his choice. | System displays the message “Successfully removed” and the flight is removed. |
| 15. | Removing a flight that has been searched for. | Administrator | Having flights in the system | System displays the message “Successfully removed”. | 1. Administrator types in the flightID.  2. System displays the flight with that flightID.  3. Administrator selects the flight.  4. Administrator validates his choice. | System displays the message “Successfully removed”. |
| 16. | Adding a flight when the destination city is the same as the arrival city. | Administrator | No precondition | System displays the message “Origin and destination must have different values! Make sure the price field is completed as well”. | 1. Administrator chooses origin city, destination city, departure date, arrival date, departure time, arrival time and types in the price.  2. Administrator validates his choice. | System displays the message “Origin and destination must have different values! Make sure the price field is completed as well”. |
| 17. | Adding a flight when the departure date is before the current date. | Administrator | No precondition | System displays the message “Departure date should not be before today”. | 1. Administrator chooses origin city, destination city, departure date, arrival date, departure time, arrival time and types in the price.  2. Administrator validates his choice. | System displays the message “Departure date should not be before today”. |
| 18. | Adding a flight when the arrival date is before the departure date. | Administrator | No precondition | System displays the message “Arrival date cannot be before the departure date!”. | 1. Administrator chooses origin city, destination city, departure date, arrival date, departure time, arrival time and types in the price.  2. Administrator validates his choice. | System displays the message “Arrival date cannot be before the departure date!”. |
| 19. | Adding a flight when there is no arrival date or departure date chosen. | Administrator | No precondition | System displays the message “Please use the date choosers to select the date”. | 1. Administrator chooses origin city, destination city, departure date, arrival date, departure time, arrival time and types in the price.  2. Administrator validates his choice. | System displays the message “Please use the date choosers to select the date”. |
| 20. | Adding a flight when departure time and arrival date coincide, while the departure date and arrival date coincide. | Administrator | No precondition | System displays the message “Arrival time cannot have the same value as the departure time!”. | 1. Administrator chooses origin city, destination city, departure date, arrival date, departure time, arrival time and types in the price.  2. Administrator validates his choice. | System displays the message “Arrival time cannot have the same value as the departure time!”. |
| 21. | Adding a flight when arrival time is before the departure time, while the departure date and arrival date coincide. | Administrator | No precondition | System displays the message “Arrival time cannot be before the departure time!”. | 1. Administrator chooses origin city, destination city, departure date, arrival date, departure time, arrival time and types in the price.  2. Administrator validates his choice. | System displays the message “Arrival time cannot be before the departure time!”. |
| 22. | Adding a flight when the introduced price value is not made exclusively of numbers. | Administrator | No precondition | System displays the message “Price has to be a number! No other characters are allowed.”. | 1. Administrator chooses origin city, destination city, departure date, arrival date, departure time, arrival time and types in the price.  2. Administrator validates his choice. | System displays the message “Price has to be a number! No other characters are allowed.”. |
| 23. | Adding a flight that is already in the system. | Administrator | No precondition | System displays the message “This flight already exists in the system.”. | 1. Administrator chooses origin city, destination city, departure date, arrival date, departure time, arrival time and types in the price.  2. Administrator validates his choice. | System displays the message “This flight already exists in the system.”. |
| 24. | Removing a flight while not selecting one. | Administrator | Having flights in the system | System displays the message “Please select a flight to delete!”. | 1. Administrator types in the flightID.  2. System displays the flight with that flightID.  3. Administrator validates his choice. | System displays the message “Please select a flight to delete!”. |
| 25. | Removing a flight that cannot be found. | Administrator | Having flights in the system | System displays the message “No flight with the id has been found”. | 1. Administrator types in the flightID. | System displays the message “No flight with the id has been found”. |
| 26. | Removing a found flight while not selecting one. | Administrator | Having flights in the system | System displays the message “Please select a flight to delete!”. | 1. Administrator types in the flightID.  2. System displays the flight with that flightID.  3. Administrator validates his choice. | System displays the message “Please select a flight to delete!”. |

Tests were created to verify that the requirements section has been fulfilled. The approach was to combine Junit tests with test cases. In this way, it was made sure that the behavior was the expected one. Tests cases cover the behavior testing while Junit tests cover the state testing.

Junit tests were created for the model and are found in Appendices \* \*. They were made for assuring the model behaved as expected and stored the proper data mentioned in the requirements. Each Junit test covers an entity.

Test cases were created to document that the system behaves in the manner it was intended to and that it was created considering the use cases. Both positive and negative scenarios are covered while also making sure that one thing at the time is tested. Overlaps in the test cases were avoided.

The Junit tests and test cases are as proof that the system was developed as detailed in the previous parts of this document.