

World Plane Inc.

CS509 RESERVATION SYSTEM TEST VERIFICATION DOCUMENT

Date: 01 MAY 2023

Prepared by: Team C

Introduction

The Test Plan has been created to communicate the test approach to team members and stakeholders. It included the test procedures. The test verification document includes data showing that the team has tested the document as outlined in the Test Plan.

1.1 Objectives

Team C will be delivering to World Plane Incorporated a proof-of-concept software that provides Retail Customers with the ability to book their Flight Reservations, instead of calling a Travel Agent. The software will utilize the current World Plane Incorporated database to search for flights that match search queries entered by Retail Customers through Team C's software. The software shall provide advanced functionalities including, but not limited to, displaying the Retail Customer suitable layover options for travel, converting local and destination time, and searching within a window of departure and arrival dates. By using the software delivered, World Plane Incorporated will be able to expand its customer base and reduce overhead costs on Travel Agents.

Test Plan

1. Test Identification: Inputs for reserving flight

The inputs to the flight reservation system are tested to verify if incorrect inputs are flagged by the system. The next steps for the accepted inputs are covered in the next test case.

a. Incorrect airport code

```
arrivalAirportCode:  
LAK  
Improperly formed input. Please review the directions.  
arrivalAirportCode:
```

b. Incorrect date format/ date out of range

```
ArrivalTime (YYYY_MM_DD) B/W. 2023_05_06 and 2023_05_31:  
2023_02_30  
Improper Date. Please provide a date between 2023_05_06 and 2023_05_31  
ArrivalTime (YYYY_MM_DD) B/W. 2023_05_06 and 2023_05_31:
```

c. Incorrect specification

```
Trip Type (oneway, round):  
two  
Caught Error in tripType.  
Improperly formed input. Please review the directions.  
Trip Type (oneway, round):
```

```
Seating Class (Coach, FirstClass):
C
Caught Error in Seat Class.
Improperly formed input. Please review the directions.
Seating Class (Coach, FirstClass):
```

d. Incorrect input for sorting

```
*****
Please review the departure flights above, and make a selection using the (#).
Otherwise, request to sort by:
Price: P
Departure Time: D
Arrival Time: A
Length of Trip: L
B
Improperly formed input. Please review the directions.
Please review the departure flights above, and make a selection using the (#).
Otherwise, request to sort by:
Price: P
Departure Time: D
Arrival Time: A
Length of Trip: L
```

2. Test Identification: Searching Flights

```
Welcome to Team C's Application!
Enter X at any point to exit the application, and R to return to welcome.
Would you like to build a flight?
Please enter Y or N for selection.
y
Finding Airports available...:
Found Aiports!
Ready for input. Enter 3-character departure Airport code:
BOS
departTime (YYYY_MM_DD) B/W. 2023_05_06 and 2023_05_31:
2023_05_07
arrivalAiportCode:
JFK
Trip Type (oneway, round):
ROUND
ArrivalTime (YYYY_MM_DD) B/W. 2023_05_06 and 2023_05_31:
2023_05_27
Seating Class (Coach, FirstClass):
COACH
Searching for flights now!
Here are your available DEPARTURE flights:
[0] *****
      Flight      Departure      Arrival      Coach Price      FC Price
      4693      BOS -----> JFK      $5.61      $18.71
Time      2023 May 07 05:45 EDT      2023 May 07 06:17 EDT

Total Ticket Price :$5.61
Total Trip Duration:0 Hours 32 Minutes
[1] *****
```

In this test case, a total of 44 possible flights were found.

3. Test Identification: Sorting flights

Please review the departure flights above, and make a selection using the (#).
Otherwise, request to sort by:
Price: P
Departure Time: D
Arrival Time: A
Length of Trip: L
P
Here are your available DEPARTURE flights:

```
[0] *****
      Flight      Departure      Arrival      Coach Price      FC Price
      4693      BOS -----> JFK      $5.61      $18.71
Time      2023 May 07 05:45 EDT      2023 May 07 06:17 EDT

Total Ticket Price :$5.61
Total Trip Duration:0 Hours 32 Minutes
[1] *****
      Flight      Departure      Arrival      Coach Price      FC Price
      4694      BOS -----> JFK      $21.17      $72.32
Time      2023 May 07 05:59 EDT      2023 May 07 06:22 EDT

Total Ticket Price :$21.17
Total Trip Duration:0 Hours 23 Minutes
[2] *****
```

And continued, showing that the highest numbered flight is the most expensive.

```
Total Ticket Price :$191.24
Total Layover Time:2 Hours 18 Minutes
Total Trip Duration:5 Hours 45 Minutes
[42] *****
      Flight      Departure      Arrival      Coach Price      FC Price
      4721      BOS -----> MDW      $121.10      $432.50
Time      2023 May 07 21:37 EDT      2023 May 07 23:17 CDT

      Flight      Departure      Arrival      Coach Price      FC Price
      7097      MDW -----> JFK      $82.91      $283.27
Time      2023 May 08 01:40 CDT      2023 May 08 04:10 EDT

Total Ticket Price :$204.01
Total Layover Time:2 Hours 23 Minutes
Total Trip Duration:6 Hours 33 Minutes
[43] *****
      Flight      Departure      Arrival      Coach Price      FC Price
      4706      BOS -----> IND      $141.33      $482.88
Time      2023 May 07 12:28 EDT      2023 May 07 15:01 EDT

      Flight      Departure      Arrival      Coach Price      FC Price
      23537      IND -----> JFK      $89.84      $306.97
Time      2023 May 07 17:29 EDT      2023 May 07 19:06 EDT

Total Ticket Price :$231.17
Total Layover Time:2 Hours 28 Minutes
Total Trip Duration:6 Hours 38 Minutes
*****
```

Here is the sorted list sorted by price in the order of lowest price to highest price

P

Here are your available ARRIVAL flights:

Flight	Departure	Arrival	Coach Price	FC Price
34997	JFK -----> EWR		\$0.55	\$1.83
Time	2023 May 27 02:54 EDT	2023 May 27 02:57 EDT		
37382	EWR -----> BOS		\$6.72	\$22.40
Time	2023 May 27 08:57 EDT	2023 May 27 09:35 EDT		
Total Ticket Price :\$7.27				
Total Layover Time:6 Hours 0 Minutes				
Total Trip Duration:6 Hours 41 Minutes				
34994	JFK -----> BOS		\$13.26	\$70.44
Time	2023 May 27 02:04 EDT	2023 May 27 02:34 EDT		
Total Ticket Price :\$13.26				
Total Trip Duration:0 Hours 30 Minutes				
35036	JFK -----> LGA		\$0.49	\$4.12
Time	2023 May 27 22:53 EDT	2023 May 27 22:55 EDT		
36212	LGA -----> BOS		\$12.83	\$106.88
Time	2023 May 28 04:52 EDT	2023 May 28 05:26 EDT		
Total Ticket Price :\$13.32				
Total Layover Time:5 Hours 57 Minutes				
Total Trip Duration:6 Hours 33 Minutes				

And continued, showing that the highest numbered flight is the most expensive.

35010	JFK -----> ORD		\$98.65	\$352.32
Time	2023 May 27 10:34 EDT	2023 May 27 11:44 CDT		
9140	ORD -----> CVG		\$17.96	\$95.41
Time	2023 May 27 13:40 CDT	2023 May 27 15:20 EDT		
10365	CVG -----> BOS		\$26.71	\$135.26
Time	2023 May 27 18:03 EDT	2023 May 27 20:24 EDT		
Total Ticket Price :\$143.32				
Total Layover Time:4 Hours 39 Minutes				
Total Trip Duration:9 Hours 50 Minutes				
35026	JFK -----> FLL		\$97.40	\$1,006.51
Time	2023 May 27 18:11 EDT	2023 May 27 20:50 EDT		
17415	FLL -----> PHL		\$39.41	\$351.86
Time	2023 May 27 21:52 EDT	2023 May 28 01:07 EDT		
42091	PHL -----> BOS		\$10.79	\$90.38
Time	2023 May 28 03:11 EDT	2023 May 28 03:49 EDT		
Total Ticket Price :\$147.60				
Total Layover Time:3 Hours 6 Minutes				
Total Trip Duration:9 Hours 38 Minutes				
Flights have been sorted!				
Please review the arrival flights above, and make a selection using the (#).				
Otherwise, request to sort by:				
Price: P				
Departure Time: D				
Arrival Time: A				
Length of Trip: L				

4. Test Identification: Booking Confirmation

```

34
Please review your pending reservation below!
***** PENDING RESERVATION *****
*****
***** OUTBOUND FLIGHTS *****
Flight      Departure      Arrival      Coach Price  FC Price
4693        BOS -----> JFK        $5.61        $18.71
Time        2023 May 07 05:45 EDT  2023 May 07 06:17 EDT

Total Ticket Price :$5.61
Total Trip Duration:0 Hours 32 Minutes
***** INBOUND FLIGHTS *****
Flight      Departure      Arrival      Coach Price  FC Price
35026       JFK -----> FLL        $97.40        $1,006.51
Time        2023 May 27 18:11 EDT  2023 May 27 20:50 EDT
Flight      Departure      Arrival      Coach Price  FC Price
17415       FLL -----> PHL        $39.41        $351.86
Time        2023 May 27 21:52 EDT  2023 May 28 01:07 EDT
Flight      Departure      Arrival      Coach Price  FC Price
42091       PHL -----> BOS        $10.79        $90.38
Time        2023 May 28 03:11 EDT  2023 May 28 03:49 EDT

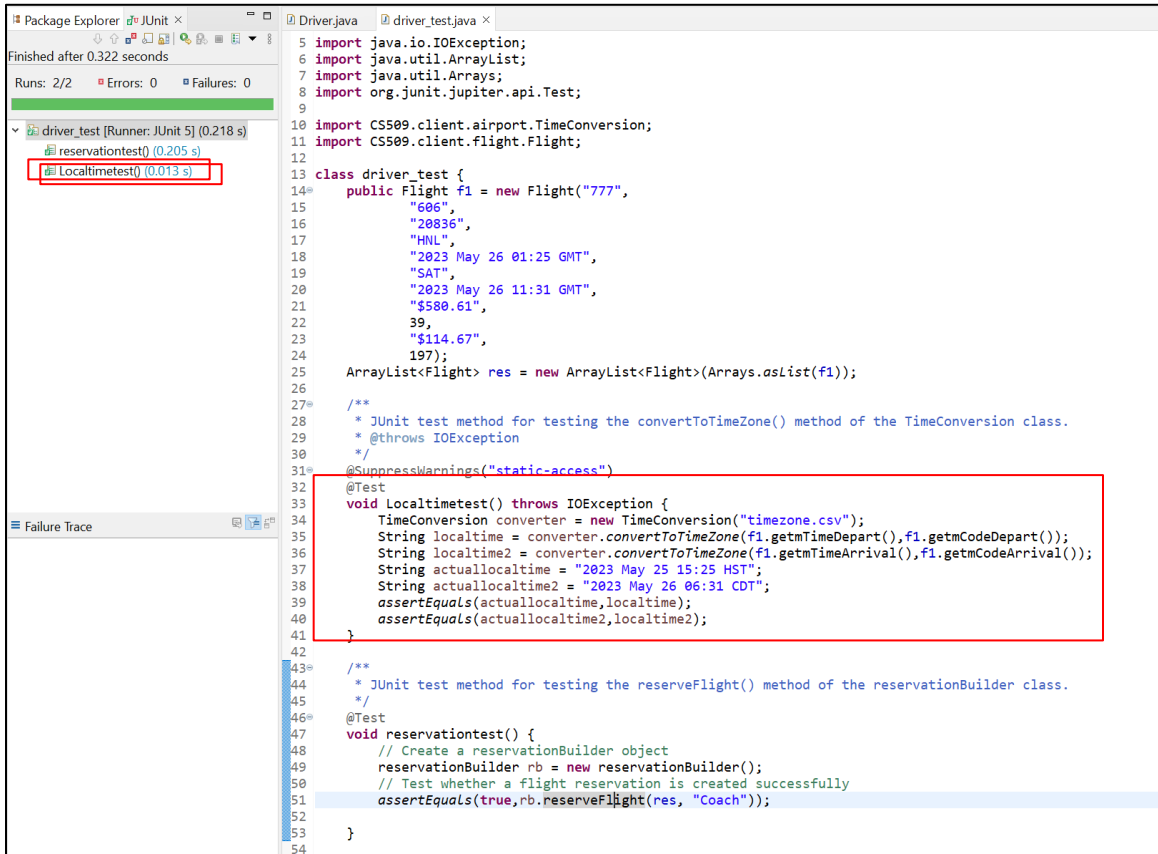
Total Ticket Price :$147.60
Total Layover Time:3 Hours 6 Minutes
Total Trip Duration:9 Hours 38 Minutes
***** PENDING RESERVATION ABOVE *****
***** TOTAL COST: $153.21 *****
*****

Would you like to confirm this reservation?
Please enter Y to reserve, N to return to search results, R to return to welcome, and X to exit.
Y
Reservation confirmed!
Please enter R to return to welcome, or X to exit.

```

5. Test Identification: Convert GMT to local time

Here, the Junit test for GMT to local time conversion and the test runs successfully by verifying the time conversion from GMT to local times for HST and CDT



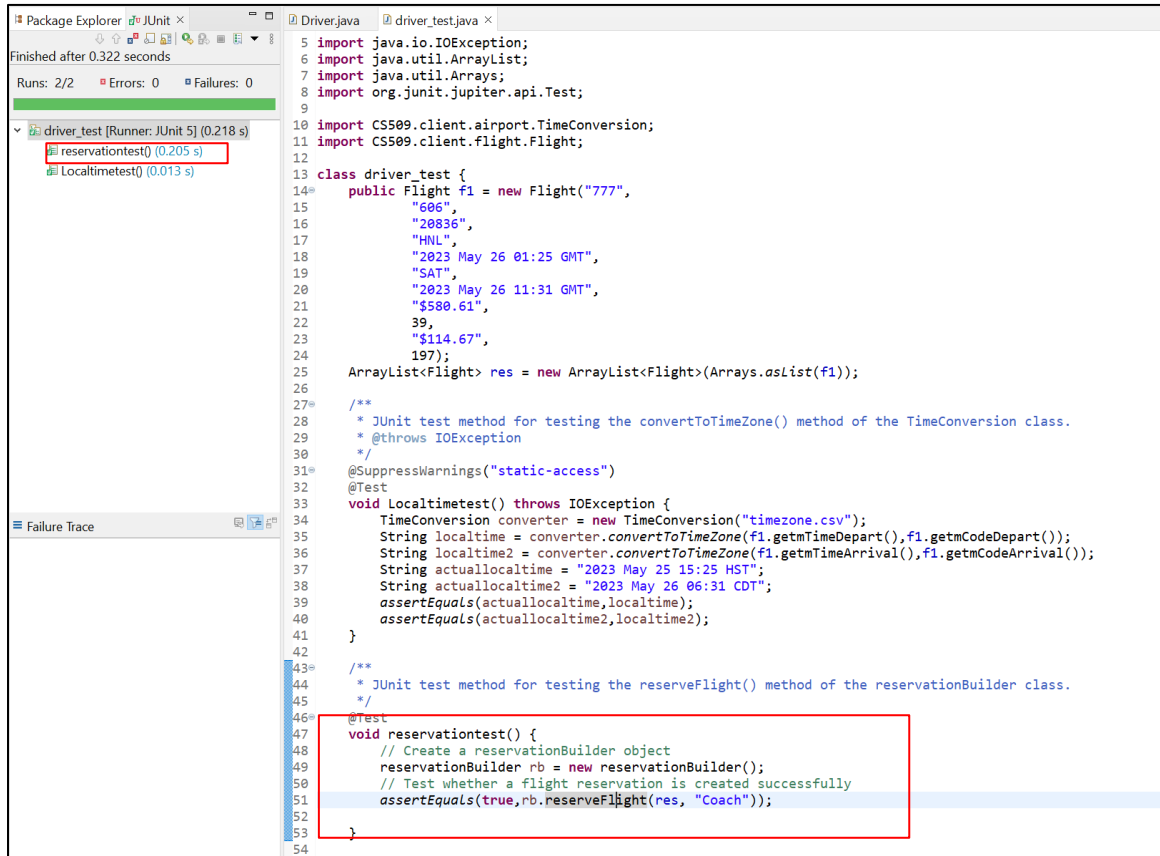
```

5 import java.io.IOException;
6 import java.util.ArrayList;
7 import java.util.Arrays;
8 import org.junit.jupiter.api.Test;
9
10 import CS509.client.airport.TimeConversion;
11 import CS509.client.flight.Flight;
12
13 class driver_test {
14     public Flight f1 = new Flight("777",
15         "606",
16         "20836",
17         "HNL",
18         "2023 May 26 01:25 GMT",
19         "SAT",
20         "2023 May 26 11:31 GMT",
21         "$580.61",
22         39,
23         "$114.67",
24         197);
25     ArrayList<Flight> res = new ArrayList<Flight>(Arrays.asList(f1));
26
27     /**
28      * JUnit test method for testing the convertToTimeZone() method of the TimeConversion class.
29      * @throws IOException
30      */
31     @SuppressWarnings("static-access")
32     @Test
33     void Localtimetest() throws IOException {
34         TimeConversion converter = new TimeConversion("timezone.csv");
35         String localtime = converter.convertToTimeZone(f1.getmTimeDepart(), f1.getmCodeDepart());
36         String localtime2 = converter.convertToTimeZone(f1.getmTimeArrival(), f1.getmCodeArrival());
37         String actuallocaltime = "2023 May 25 15:25 HST";
38         String actuallocaltime2 = "2023 May 26 06:31 CDT";
39         assertEquals(actuallocaltime, localtime);
40         assertEquals(actuallocaltime2, localtime2);
41     }
42
43     /**
44      * JUnit test method for testing the reserveFlight() method of the reservationBuilder class.
45      */
46     @Test
47     void reservationtest() {
48         // Create a reservationBuilder object
49         reservationBuilder rb = new reservationBuilder();
50         // Test whether a flight reservation is created successfully
51         assertEquals(true, rb.reserveFlight(res, "Coach"));
52     }
53 }

```

6. Test Identification: Reservation of flight

The JUnit test for verifying if the system is successfully reserving the flight. The test passes, if the system successfully reserves a flight.



```

5  import java.io.IOException;
6  import java.util.ArrayList;
7  import java.util.Arrays;
8  import org.junit.jupiter.api.Test;
9
10 import CS509.client.airport.TimeConversion;
11 import CS509.client.flight.Flight;
12
13 class driver_test {
14     public Flight f1 = new Flight("777",
15         "606",
16         "20836",
17         "HNL",
18         "2023 May 26 01:25 GMT",
19         "SAT",
20         "2023 May 26 11:31 GMT",
21         "$580.61",
22         39,
23         "$114.67",
24         197);
25     ArrayList<Flight> res = new ArrayList<Flight>(Arrays.asList(f1));
26
27     /**
28      * JUnit test method for testing the convertToTimeZone() method of the TimeConversion class.
29      * @throws IOException
30      */
31     @SuppressWarnings("static-access")
32     @Test
33     void LocaltimeTest() throws IOException {
34         TimeConversion converter = new TimeConversion("timezone.csv");
35         String localtime = converter.convertToTimeZone(f1.getTimeDepart(), f1.getmCodeDepart());
36         String localtime2 = converter.convertToTimeZone(f1.getTimeArrival(), f1.getmCodeArrival());
37         String actuallocaltime = "2023 May 25 15:25 HST";
38         String actuallocaltime2 = "2023 May 26 06:31 CDT";
39         assertEquals(actuallocaltime, localtime);
40         assertEquals(actuallocaltime2, localtime2);
41     }
42
43     /**
44      * JUnit test method for testing the reserveFlight() method of the reservationBuilder class.
45      */
46     @Test
47     void reservationTest() {
48         // Create a reservationBuilder object
49         reservationBuilder rb = new reservationBuilder();
50         // Test whether a flight reservation is created successfully
51         assertEquals(true, rb.reserveFlight(res, "Coach"));
52     }
53 }

```