Air Route Planner Use Cases and Test Cases

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| --- | --- | --- | --- | --- | --- | --- |
| Case | Product | Action | Expected | Actual | Pass/Fail | Comments |
| 1 | File Input | 1. Source code launched without file in local directory 2. File chooser window opens 3. User picks a valid input file |  |  |  |  |
|  |  |  |  |  |  |  |
| 2 | File Input | 1. Source code launched without file in local director 2. File chooser window opens 3. User picks an invalid input file 4. Program prompts user to pick an input file again |  |  |  |  |
|  |  |  |  |  |  |  |
| 3 | GUI | 1. Follow steps in test case 1 2. User selects “ATL” as origin 3. User selects “ATL” as destination 4. Click “Find” button |  |  |  |  |
|  |  |  |  |  |  |  |
| 4 | GUI | 1. Follow steps 3.a and 3.b 2. User selects “DCA” as destination 3. Click Find |  |  |  |  |
|  |  |  |  |  |  |  |
| 5 | GUI | 1. Repeat steps 4.a 4.b 2. User selects cost category 3. User selects lowest sub category 4. Click “Find” button |  |  |  |  |
|  |  |  |  |  |  |  |
| 6 | GUI | 1. Repeat steps 4.a 4.b 2. User selects highest sub category 3. Click “find” button |  |  |  |  |
|  |  |  |  |  |  |  |
| 7 | GUI | 1. Repeat step 4.a 4.b 2. User selects airline filter 3. User selects “Delta” 4. User clicks find |  |  |  |  |
|  |  |  |  |  |  |  |
| 8 | GUI | 1. Repeat steps 4.a 4.b 2. User selects “Air Tran” 3. User clicks find |  |  |  |  |
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| 9 | GUI | 1. Repeat steps 4.a 4.b 2. User selects time category 3. User selects shortest sub category 4. User clicks find |  |  |  |  |
|  |  |  |  |  |  |  |
| 10 | GUI | 1. Repeat steps 4.a 4.b 2. User selects time category 3. User selects longest sub category 4. User clicks find |  |  |  |  |
|  |  |  |  |  |  |  |
| 11 | GUI | 1. Follow steps in test case 1 2. User selects “ORL” as origin 3. User clicks “More Info” |  |  |  |  |
|  |  |  |  |  |  |  |
| 12 | GUI | 1. Follow steps in test case 1 2. User selects “JRK” as destination 3. User clicks “More Info” |  |  |  |  |
|  |  |  |  |  |  |  |
| 13 | Add Routes | 1. Follow steps in test case 1 2. User clicks route tab 3. User clicks create route 4. User clicks accept |  |  |  |  |
|  |  |  |  |  |  |  |
| 14 | Add Routes | 1. Follow test case 13 a-c 2. User changes destination to “ORL” 3. User enters depart time of 0830 4. User enters an arrival time of 0730 5. User enters airline of “UNITED” 6. User enters cost of 130.00 |  |  |  |  |
|  |  |  |  |  |  |  |
| 15 | Add Routes | 1. Follow test case 13 a-c 2. User changes destination to “DCA” 3. User enters depart time of “089-“ 4. User enters arrival time of 0930 5. User enters airline of “United” 6. User enters cost of 130.0 |  |  |  |  |
|  |  |  |  |  |  |  |
| 16 | Add Routes | 1. Follow test case 13a-c 2. User changes destination to “JFK” 3. User enters depart time of 0830 4. User enters arrival time of 0830 5. User enters airline of UNITED 6. User enters cost of 130.0 |  |  |  |  |
|  |  |  |  |  |  |  |
| 17 | Add Routes | 1. Follow test case 13a-c 2. User changes destination to “JFK” 3. User enters depart time of 0830 4. User enters arrival time of 0820 5. User enters airline of UNITED 6. User enters cost of 130.0 |  |  |  |  |
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| 18 | Add Routes | 1. Follow test case 13 a-c 2. User changes destination to “JFK” 3. User enters depart time of 0830 4. User enters arrival time of 0900 5. User enters airline of UNITED 6. User enters cost of 130.0 |  |  |  |  |
|  |  |  |  |  |  |  |
| 19 | Add Routes | 1. Follow test case 13a-c 2. User changes destination to “JFK” 3. User enters depart time of 0830 4. User enters arrival time of 0900 5. User enters airline of 898air |  |  |  |  |
|  |  |  |  |  |  |  |
| 20 | Add Routes | 1. Follow test case 13a-c 2. User selects “JFK” as origin 3. User enters depart time of 0830 4. User enters arrival time of 0900 5. User enters airline of “united” 6. User enters cost of 130.00 |  |  |  |  |
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| 21 | Add Routes | 1. Repeat test case 13a-c 2. User selects “JFK” as origin 3. User enters depart time of 0830 4. User enters arrival time of 0900 5. User enters airline of “UNITED” 6. User enters cost of 140 |  |  |  |  |
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| 22 | Add Routes | 1. Repeat test case 13a-c 2. User selects “JFK” as origin 3. User enters depart time of 0830 4. User enters arrival time of 0900 5. User enters airline of “UNITED” 6. User enters cost of a32 |  |  |  |  |
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| 23 | Add Routes | 1. Repeat test case 13a-c 2. User selects “JFK” as origin 3. User enters depart time of 0830 4. User enters arrival time of 0900 5. User enters airline of “UNITED” 6. User enters cost -340 |  |  |  |  |
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| 24 | Add Routes | 1. Repeat test case 13a-c 2. User selects “JFK” as origin 3. User enters depart time of 0830 4. User enters arrival time of 0900 5. User enters airline of “UNITED” 6. User enters cost 130.0 |  |  |  |  |
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| 25 | Delete Routes | 1. Follow test case 1 2. Select Route menu 3. Select delete route 4. User selects route 1 5. User clicks delete |  |  |  |  |
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| 26 | Add Airport | 1. Follow test case 1 2. User clicks airports 3. User clicks create new airport 4. User enters aur |  |  |  |  |
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| 27 | Add Airport | 1. Follow test case 26 a-c 2. User enters DCA |  |  |  |  |
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| 28 | Add Airport | 1. Follow test case 26 a-c 2. User enters AAA |  |  |  |  |
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| 29 | Add Airport | 1. Follow test case 26a-c 2. User enters 89AA |  |  |  |  |
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| 30 | Add Airport | 1. Follow test case 26a-c 2. User enters AAAA |  |  |  |  |
|  |  |  |  |  |  |  |
| 31 | Add Airport | 1. Follow test case 26a-c 2. User enters AA |  |  |  |  |
|  |  |  |  |  |  |  |
| 32 | Delete Airport | 1. Follow test case 1 2. User clicks Airports 3. User clicks delete airport 4. User selects “ATL” |  |  |  |  |
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| 33 | Edit Route | 1. Follow test case 1 2. User selects routes 3. User selects edit route 4. Follow test case 14b-f |  |  |  |  |
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| 34 | Edit Route | 1. Follow test case 1 2. User selects routes 3. User selects edit route 4. Follow test case 15b-f |  |  |  |  |
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| 35 | Edit Route | 1. Follow test case 1 2. User selects routes 3. User selects edit route 4. Follow test case 16b-f |  |  |  |  |
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| 36 | Edit Route | 1. Follow test case 1 2. User selects routes 3. User selects edit route 4. Follow test case 17b-f |  |  |  |  |
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| 37 | Edit Route | 1. Follow test case 1 2. User selects routes 3. User selects edit route 4. Follow test case 18b-f |  |  |  |  |
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| 38 | Edit Route | 1. Follow test case 1 2. User selects routes 3. User selects edit route 4. Follow test case 19b-f |  |  |  |  |
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| 39 | Edit Route | 1. Follow test case 1 2. User selects routes 3. User selects edit route 4. Follow test case 20b-f |  |  |  |  |
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| 40 | Edit Route | 1. Follow test case 1 2. User selects routes 3. User selects edit route 4. Follow test case 21b-f |  |  |  |  |
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| 41 | Edit Route | 1. Follow test case 1 2. User selects routes 3. User selects edit route 4. Follow test case 22b-f |  |  |  |  |
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| 42 | Edit Route | 1. Follow test case 1 2. User selects routes 3. User selects edit route 4. Follow test case 23b-f |  |  |  |  |
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| 43 | Edit Route | 1. Follow test case 1 2. User selects routes 3. User selects edit route 4. Follow test case 24b-f |  |  |  |  |
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| 44 | Save | 1. Follow test case 1 2. User clicks file 3. User clicks save |  |  |  |  |
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Use Case 1: User Interface

Goal: The user interface for the program shall display information (e.g. airport information, routes information, and functions to search, delete, add, modify and open airports or routes)

Actors: General user

Scenario: The user needs to get information and choose functions on the interface.

Test Case 1:

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| --- | --- | --- | --- | --- |
| Case | Action | Expected | Actual | Pass/Fail |
| 1.1 | a. The user can choose origin airport on the GUI | Origin should populate with all airports in system | All airports appear | Pass |
|  | b. The user can choose destination airport on the GUI | Destination should populate will all the airports in the system | All airports appear | Pass |
|  | c. The user can choose categories (cost,airline and time) on the GUI |  |  |  |
|  | c.i. Cose |  |  |  |
|  | c.i.1 Highest | Costs should appear in descending order | Costs descend | Pass |
|  | c.i.2 Lowest | Costs should appear in ascending order | Costs ascend | Pass |
|  | c.ii. Time |  |  |  |
|  | c.ii.1 Quickest | Time should appear in ascending order | Time ascends | Fail. Some time not correct. |
|  | c.ii.2 Longest | Time should appear in descending order | Time descends | Fail. Some time not correct. |
|  | c.iii. Airline |  |  |  |
|  | c.iii.1 Shows paths that use the input airline | Only paths that contain the input airline should appear | Paths appear | Pass |
|  | d. If no paths can be found, the system tells the user | System will let the user know what's occuring | User is aware | Pass |
| 1.2 | a.The GUI will display the results on the Jtable | Results appear formatted in jtable | Results populate appropriately | Pass |
| 1.3 | a. The user can add/modify airport on the GUI | Add a new | Airport shows up in destination and origin | Pass |
|  | b. Press airports | airport should |  |  |
|  | c. Press create new airport | show up |  |  |
| 1.4 | a. The user can add/modify routes based on existing routes on the GUI | Create new | Create route dialog appears | Pass |
|  | b. Press routes | route should |  |  |
|  | c. Press create new route | show up |  |  |
| 1.5 | a. The user can delete airports on the GUI | Delete airport | all airports able to delete | Pass |
|  | b. Press airports | show up |  |  |
|  | c. Press delete airport |  | delete airport dialog box shows up |  |
| 1.6 | a. The user can delete routes on the GUI | Delete route | all routes able to delete | Fail- can delete all routes but last does not remove from jTable |
|  | b. Press routes | show up |  |  |
|  | c. Press delete route |  | delete route dialog box shows up |  |
| 1.7 | a. The GUI can display most current route information |  | updated info is displayed | Pass |
| 1.8 | a. The GUI can display airports that can be reached from a given airport | Information show | “more info” generates list of reachable airports from selected airport | Pass |
|  | b. Press "more info" button | in Jtable |  |  |
| 1.9 | a. The GUI can display air route information for a given route |  | all displayed in main GUI | Pass |
| 1.10 | a. The user can close airport | Open/Close | Closes. Doesn’t reopen. GUI does show up | Fail |
|  | b. The user can re-open closed airport | an airport should |  |  |
|  | c. Press airports | show up |  |  |
|  | d. Press open/close airport |  |  |  |
| 1.11 | a. The GUI can save any modifications made |  | Any modification can show up in GUI | Pass |

Use Case 2: Data input

Goal: Data will be read in from a text file

Actors: General user

Test Case 2:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Case | Action | Expected | Actual | Pass/Fail |
| 2 | a.Open the data file from a text file | Data will be separated | Opens and sorts file | Pass |
|  | b.Check if data separated into sections | by '#' keyword "# |  |  |
|  | c.Check the keyword | comment" |  |  |

Use Case 3:

Goal: New routes will be added with the right information

Actors: General user

Scenario: The user needs add new routes meet the requirements.

Test Case 3:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Case | Action | Expected | Actual | Pass/Fail |
| 3.1 | a. System will allow user to enter new routes |  | Allows and applies | Pass |
| 3.2 | a.Press routes | Error: the flight | Route successfully creates and searchable | Pass |
|  | b. Press create new route | arrives before |  |  |
|  | c. The new route require airline | it departs |  |  |
|  | d. The new route require departure airport |  |  |  |
|  | e. The user should choose an existing origin airport |  |  |  |
|  | f. The new route require arrival airport |  |  |  |
|  | g. The user should choose an existing arrival airport |  |  |  |
|  | h. The user type in departure time 0800 |  |  |  |
|  | i. The user type in arrival time 0600 |  |  |  |
|  | j. The user type in price 180 |  |  |  |
| 3.3 | a.Press routes | Error: the flight | The dialog box shows “Invalid” for incorrect parameter including “Cost” | Pass |
|  | b. Press create new route | arrives after |  |  |
|  | c. The new route require airline | midnight |  |  |
|  | d. The new route require departure airport |  |  |  |
|  | e. The user should choose an existing origin airport |  |  |  |
|  | f. The new route require arrival airport |  |  |  |
|  | g. The user should choose an existing arrival airport |  |  |  |
|  | h. The user type in departure time 2000 |  |  |  |
|  | i. The user type in arrival time 2400 (next day) |  |  |  |
|  | j. The user type in price 180 |  |  |  |
| 3.4 | a.Press routes | Error: the price is | The dialog box shows “Invalid” for the cost parameter alone. | Pass |
|  | b. Press create new route | less than zero |  |  |
|  | c. The new route require airline |  |  |  |
|  | d. The new route require departure airport |  |  |  |
|  | e. The user should choose an existing origin airport |  |  |  |
|  | f. The new route require arrival airport |  |  |  |
|  | g. The user should choose an existing arrival airport |  |  |  |
|  | h. The user type in departure time 0800 |  |  |  |
|  | i. The user type in arrival time 1200 |  |  |  |
|  | j. The user type in price -600 |  |  |  |
| 3.5 | a. Press airports | Error: The airport | Errored stated the format was incorrect | Pass |
|  | b. Press create new airport | code should be |  |  |
|  | c.Type in airport code "456" | letters |  |  |
|  | d. Press add |  |  |  |
| 3.6 | a. Press airports | Error: The airport | Errored stated the format was incorrect | Pass |
|  | b. Press create new airport | code should be 3 |  |  |
|  | c.Type in airport code "ASDF" | letters |  |  |
|  | d. Press add |  |  |  |

Use Case 4:

Goal: System will allow user to add new airports

Actors: General user

Scenario: The user needs to add new airports meet the requirements.

Test Case 4:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Case | Action | Expected | Actual | Pass/Fail |
| 4 | a. Press airports | Error: The airport | Errored stating the airport already exists | Pass |
|  | b. Press create new airport | must be no added |  |  |
|  | c.Type in airport code "ATL" | routes |  |  |

Use Case 5:

Goal: System will allow user to delete routes

Actors: General user

Test Case 5:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Case | Action | Expected | Actual | Pass/Fail |
| 5 | a. Press routes | Delete route window | Delete route window show up | Pass |

Use Case 6:

Goal: System will allow user to delete airports

Actors: General user

Test Case 6:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Case | Action | Expected | Actual | Pass/Fail |
| 6 | a. Press airports | All routes associated are deleted | All routes associated are deleted | Pass |
|  | b. Press delete airport |  |  |  |
|  | c.Choose an airport to delete |  |  |  |
|  | d. Press delete |  |  |  |
|  | e. Check if any routes associated with deleted airport must be deleted as well | |  |  |

Use Case 7:

Goal: System shall allow the user to see all airports currently in the network

Actors: General user

Test Case 7:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Case | Action | Expected | Actual | Pass/Fail |
| 7 | a.Press "More Info" button On GUI | The information | The information show on Jdialog | Pass |
|  | b.Check the information on JDialog | show on Jdialog |  |  |

Use Case 8:

Goal: System shall allow the user to see all airlines that service a given airport

Actors: General user

Test Case 8:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Case | Action | Expected | Actual | Pass/Fail |
| 8 | a.Press "More Info" button On GUI | The information | The information show on Jdialog | Pass |
|  | b.Check the information on JDialog | show on Jdialog |  |  |

Use Case 9:

Goal: System shall allow the user to see the air route information for all routes

Actors: General user

Test Case 9:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Case | Action | Expected | Actual | Pass/Fail |
| 9 | a.Press "More Info" button On GUI | The Jdialog should | Jdialog show the inmoramtion | Pass |
|  | b.Check the information on JDialog | has the information |  |  |
|  |  | of carrier, departure |  |  |
|  |  | airport/time,arrival |  |  |
|  |  | airport/time,price. |  |  |