

CMSC 345

Software Design and Development

UMBC-CMSC 447 Section 2 Team 4
Team Awesome

Planes for Hire

Testing Report

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2/25/2015

[Planes for hire]
Testing Report

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1. Introduction

1.1 Purpose of This Document

This document is intended for system administrators, quality assurance teams, and other users interested in reviewing the test procedure used for the development of the first iteration of this product. This report will define and analyze the testing process and describe the results. Since no actual code has been written yet, we have no test results. There will be test results for Spiral 3.

1.2 References

Use cases from the System Requirements Specification (SRS) documentation.

2. Testing Process

2.1 Description

The use cases described in the SRS documentation influenced this spiral's testing procedure. Team members did different test conditions derived from the use cases. Driving project development through satisfying these test conditions was a major goal accomplished during this spiral.

Further testing not described in this document, beyond the planned test conditions, also took place. This included black and white box testing, as well as unit testing. Once the use cases were tested, a desired iteration of the final product for the second spiral was verified.

2.2 Testing Sessions

| Date | Location | Time Started | Time Ended | Performed By | Use Cases |
|--------------------|----------------------|--------------------|--------------------|----------------|------------|
| 3/23/15 4/10/15 | Classroom Library | 6:50 pm 1:00 pm | 7:05 pm 2:00 pm | Tam Roberto | Check Out |
| 3/28/15 | Home | 3:10 pm | 3:30 pm | Sundar | User Login |

| | | | | | |
|-------------------|-----------------|---------------------|---------------------|-------------------------------|------------------------|
| | | | | Duke | |
| 3/28/15 | Home | 3:30 pm | 3:40 pm | Sundar | Registration |
| 4/3/15 | RLC | 9:00 am | 1:00 pm | Sundar, Tam, Andrew | Search Bar |
| 4/3/15 | UMBC | 10:00 am | 10:10 am | Sundar | Clickable Pins |
| 3/29/15 | UMBC | 4:40 pm | 5:10 pm | Sundar, Roberto | Late Penalties |
| 4/6/15 4/10/15 | Home | 8:00 pm | 8:20 pm | Sundar, Roberto, Andrew | Check in |
| 4/6/15 | Home | 8:30 pm | 8:36 pm | Sundar Duke | Profile Page |
| 4/6/15 | Home | 8:45 pm | 8:50 pm | Sundar | Administrative User |
| 4/6/15 | Home | 9:00 pm | 9:20 pm | Sundar | Administrative Page |
| 4/7/15 | Home | 9:00 am | 9:20 am | Sundar | Google Maps |
| 4/7/15 | Home | 10:00 am | 10:20 am | Sundar | Airports |
| 4/7/15 | UMBC | 1:00 pm | 1:20 pm | Sundar | Airplanes |
| 4/7/15 4/10/15 | UMBC Library | 10:00 pm 2:00 pm | 10:19 pm 2:15 pm | Sundar Roberto | Avatar |
| 4/13/15 | Home | 7:00 pm | 8:00 pm | Duke | Account Protection |
| 4/25- 27/15 | Home UMBC | 5:00 pm | 8:00 pm | Tam, Sundar | Waiting List |

2.3 Impressions of the Process

A testing procedure focused on checking whether the use cases were satisfied worked well with verifying the base functionality of the web application. Through the use of test conditions derived from the use cases, necessary requirements were tested accurately. These use cases created a guideline to follow throughout project development.

Our strongest component is the interaction of our database with the server. Our server has basic account creation and removal functions implemented in php, which will be done via communication with the database. Due to the fact that multiple tables may contain user information, this required rigid testing to ensure there are no remnants of previously deleted users. We tested this by creating and deleting accounts multiple times, and checking the database for entries that should have been eliminated. We verified that non-users are unable to check out planes, but are able to query for nearby airports. We will did a similar test in checking in and out a plane. A checked-in plane is flagged in the database such that it will not show up in a user's query. A checked-out plane sets this flag back to normal, allowing its use once more. Constant checking of the database was necessary.

See Code Inspection report for details of areas of code unlikely and likely to contain flaws.

3. Test Results

Testing was broken down into equivalence partitions where boundary condition segments and common segments were tested.

3.1 Testing Suite

For each use case, define a set of equivalence partitions and their corresponding boundary cases. Be sure to cover all classes of valid and invalid inputs.

Describe one or more test cases for each equivalence partition, including the purpose of each test, the test input data (the exact data, if possible, not a general description), any prior inputs that would have been necessary to get to a point where the test input is applicable, and the expected output.

The description of how testing was partitioned and implemented is outlined below.

| | |
|-------------------|--|
| Use Case | Check Out |
| Valid Situation | User clicks Check Out after completing form |
| Invalid Situation | <ol style="list-style-type: none"> 1. User clicks Check Out before completing form 2. User clicks Check Out after already having a plane checked out |
| Purpose | To see if the Check Out button works |
| Valid Results | User sees the information they entered and a Continue option. |
| Invalid Results | A message displays saying either: <ol style="list-style-type: none"> 1. Rental form incomplete 2. You already checkout a plane |

| | |
|-------------------|---|
| Use Case | Check In |
| Valid Situation | User clicks check in button having at least one checked out plane. |
| Invalid Situation | User clicks check out button without having any checked out planes |
| Purpose | Returns planes that have been previously checked out in order to finalize payments. |
| Valid Results | User is sent to checkOutResult.php showing that they succeeded. |
| Invalid Results | Ajax returns stating that user has no checked out planes to check in. |

| | |
|-------------------|---|
| Use Case | User Login |
| Valid Situation | User inserts correct email and password into input fields. |
| Invalid Situation | User inserts either an invalid email, or a valid email, but invalid password. |

| | |
|-----------------|---|
| Purpose | Protect users information from other internet dwellers. |
| Valid Results | User is sent to Main.php with user privileges. |
| Invalid Results | User is presented with an error message. |

| | |
|-------------------|---|
| Use Case | Registration |
| Valid Situation | User inputs all valid fields |
| Invalid Situation | One or more fields are invalid |
| Purpose | Create an account for a user such that their personal information is stored remotely, but is still private. |
| Valid Results | User is sent to page stating that their account creation was successful. |
| Invalid Results | Ajax sends message on same page stating that input was invalid |

| | |
|-------------------|---|
| Use Case | Search Bar |
| Valid Situation | User inserts any text |
| Invalid Situation | None |
| Purpose | Provide a general way to search for airports. |
| Valid Results | Set of airports are found |
| Invalid Results | No airports are found |

| | |
|-------------------|------------------------|
| Use Case | Clickable Pins |
| Valid Situation | user clicks on the pin |
| Invalid Situation | None |

| | |
|-----------------|---|
| Purpose | Clickable pins for user selected source and destination |
| Valid Results | Airport locations will be highlighted |
| Invalid Results | None |

| | |
|-------------------|--|
| Use Case | Google Maps |
| Valid Situation | None |
| Invalid Situation | None |
| Purpose | Display a map showing all airport locations in the United States |
| Valid Results | Map shows airports |
| Invalid Results | None |

| | |
|-------------------|--|
| Use Case | Late Penalties |
| Valid Situation | User forgets to check out a checked in plane on time. |
| Invalid Situation | User types in negative number |
| Purpose | To prevent users from keeping an airplane from being returned. |
| Valid Results | User must pay a fee. |
| Invalid Results | Application owes user money |

| | |
|-------------------|--|
| Use Case | Profile Page |
| Valid Situation | User visits profile page |
| Invalid Situation | None |
| Purpose | Display all user information not restricted to administrators. |
| Valid Results | User is given a quick rundown on their status. |

| | |
|-----------------|------|
| Invalid Results | None |
|-----------------|------|

| | |
|-------------------|--|
| Use Case | Avatar |
| Valid Situation | User is able to upload image |
| Invalid Situation | User uploads an image that is either 1. Too large 2. Wrong file format |
| Purpose | Test if image is uploaded |
| Valid Results | Image is displayed on screen |
| Invalid Results | Error message will appear and a broken link will be displayed. |

| | |
|-------------------|--|
| Use Case | Administrative User |
| Valid Situation | Admin user is able to login to the Administrative Page |
| Invalid Situation | User is not an Administrator |
| Purpose | Give admin ability to add, create, and delete airports, airplanes and users. |
| Valid Results | None |
| Invalid Results | Error message states that user is not an admin. |

| | |
|-------------------|--|
| Use Case | Administrative Page |
| Valid Situation | Admin user is able to login to the Administrative Page |
| Invalid Situation | Page doesn't load |
| Purpose | Give admin ability to add, create, and delete airports, airplanes and users. |
| Valid Results | Page loads |

| | |
|-----------------|------|
| Invalid Results | None |
|-----------------|------|

| | |
|-------------------|---|
| Use Case | Airports |
| Valid Situation | User clicks dropdown |
| Invalid Situation | None |
| Purpose | Show users all airports in the United States |
| Valid Results | User is shown all airports in the United States |
| Invalid Results | None |

| | |
|-------------------|--|
| Use Case | Airplanes |
| Valid Situation | User clicks dropdown |
| Invalid Situation | None |
| Purpose | Show user all airplane at a given airport |
| Valid Results | User is shown all airplanes at a given airport |
| Invalid Results | None |

| | |
|-------------------|--------------------------|
| Use Case | Account Protection |
| Valid Situation | User enters password |
| Invalid Situation | N/A |
| Purpose | Password is hashed |
| Valid Results | User is allowed to login |
| Invalid Results | N/A |

| | |
|----------|--------------|
| Use Case | Waiting List |
|----------|--------------|

| | |
|-------------------|---|
| Valid Situation | User selects a plane that has been checked out |
| Invalid Situation | N/A |
| Purpose | User is put on a waiting list for their plane |
| Valid Results | User is shown how many people are on the waiting list before them |
| Invalid Results | N/A |

3.2 Test Results

The results from testing are outlined in the tables below.

3.2.1 Use Case: Check Out

Conducted by: Tam

Valid Check Out Results:

The screenshot shows a web application interface for checking out a plane rental. It features input fields for 'Departing Airport' (Los Angeles, CA), 'Arrival Airport' (Chicago, IL), 'Start Date' (04/08/2015), 'Rental Duration' (5 day), and 'Plane Model' (Cessna 175 Skylark). Below these fields are two buttons: 'Check In' (red) and 'Check Out' (green). The 'Check Out' button is highlighted. Below the buttons, a message reads: 'Hi Roberto, here are your check out results. Leaving From Los Angeles Airport. Arriving to O Hare Airport. Leasing the Cessna 175 Skylark for 5 days. Beginning on 04/08/2015 to 4/12/2015'. At the bottom right is a 'Continue' button.

Web page displays check out results

Invalid Check Out Results:

1. Form is incomplete

Departing Airport Arival Airport

Start Date

Rental Duration

Plane Model

Rental form incomplete

2. Has a Plane Checked out already

Departing Airport Arival Airport

Start Date

Rental Duration

Plane Model

You already checkout a plane

3.2.2 Use Case: Check In

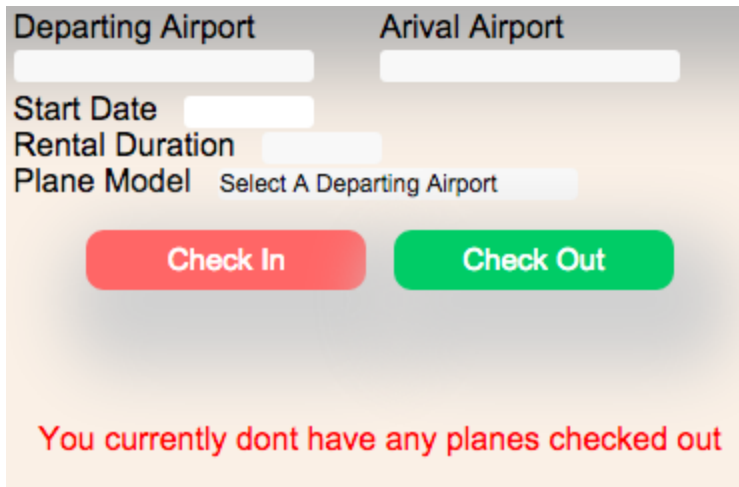
Conducted by: Sundar, Roberto, Andrew

Valid Check In Results:

Check In Result

Client rmelgar123@yahoo.com,
the aircraft model Cessna 175 Skylark has been checked in
Thank you for using Planes For Hire for your flying needs

Invalid Check In Results:



A form for checking in or out a plane. It has two columns of input fields. The left column contains 'Departing Airport', 'Start Date', 'Rental Duration', and 'Plane Model'. The right column contains 'Arival Airport' (note the typo). Below the input fields are two buttons: a red 'Check In' button and a green 'Check Out' button. At the bottom, a red message states: 'You currently dont have any planes checked out' (note the typo).

Departing Airport

Arival Airport

Start Date

Rental Duration

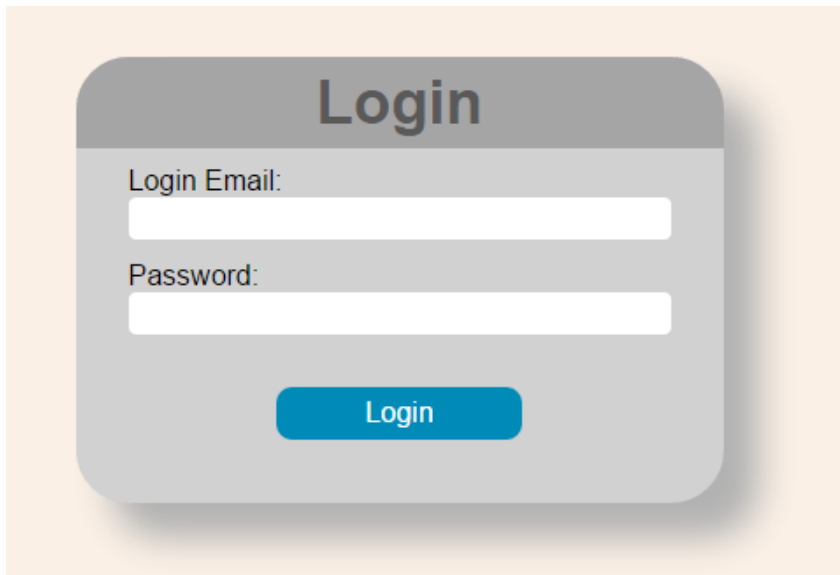
Plane Model

You currently dont have any planes checked out

3.2.3 Use Case: User Login

Conducted by: Sundar

Valid User Login Results:



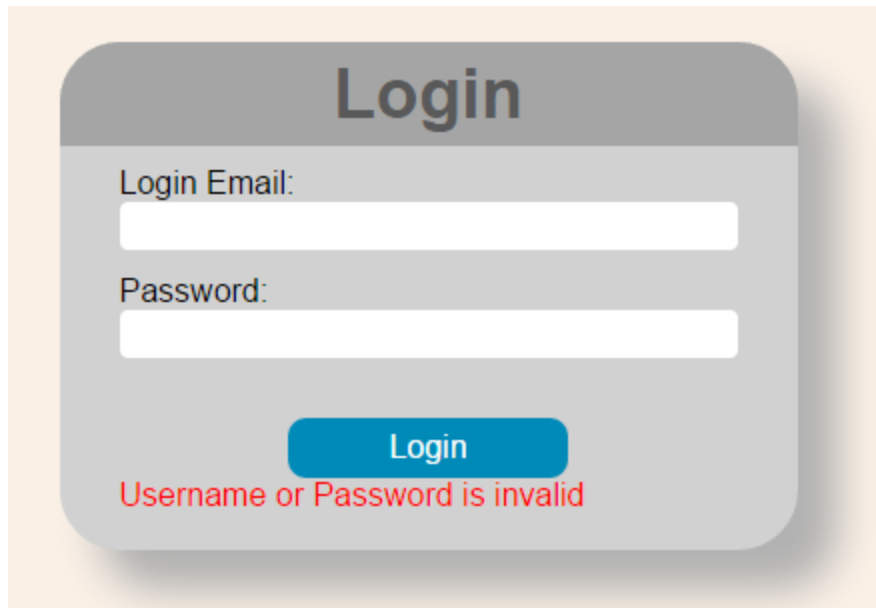
A login form with a grey header titled 'Login'. Below the header are two input fields: 'Login Email:' and 'Password:'. At the bottom is a blue 'Login' button.

Login

Login Email:

Password:

Invalid User Login Results:

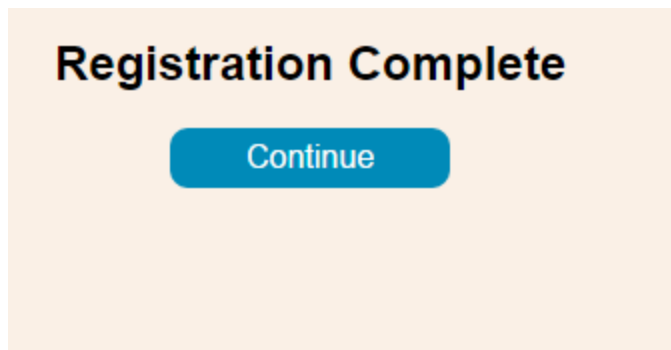


A login form with a grey header containing the word "Login" in bold. Below the header are two white input fields labeled "Login Email:" and "Password:". A blue button labeled "Login" is positioned below the password field. A red error message, "Username or Password is invalid", is displayed at the bottom of the form.

3.2.4 Use Case: Registration

Conducted by: Sundar

Valid Registration Results:



A screen with a light orange background. At the top, the text "Registration Complete" is displayed in bold. Below this text is a blue button labeled "Continue".

Invalid Registration Results:

Create an account

First Name

Last Name

Street Address

City

State

Zip Code

Phone Number

Email

Password

Retype Password

You need to enter your first name

Submit

“You need to enter -----” will change depending on the field.

3.2.5 Use Case: Search Bar

Conducted by: Sundar, Tam, Andrew

Valid Results:

Search Results

Airports: 2
Dallas/Fort Worth Airport, Dallas/Fort Worth, TX
George Bush Intercontinental Airport, Houston, TX

Invalid Results:

Search Results

No entries found!

3.2.6 Use Case: Clickable Pins

Conducted by: Sundar

Valid Results:



3.2.7 Use Case: Google Maps

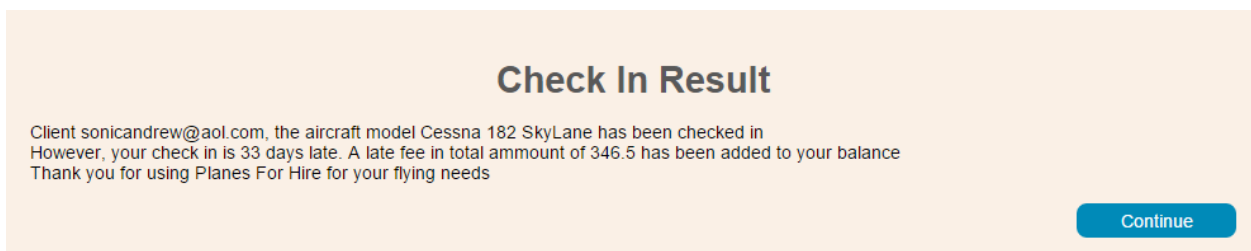
Conducted by: Sundar

Valid Results:



3.2.8 Use Case: Late Penalties Conducted by: Sundar, Roberto

Valid Late Penalties Results:



Invalid Late Penalties Results: None

3.2.9 Use Case: Profile Page

Conducted by: Sundar

Valid Results:

PLANES FOR HIRE

William Cahill
15706 Pissaro Terrace
Gaithersburg, MD 20878
8019015353
sonicandrew@aol.com

Balance \$-1

Edit

Pay
Change password

Logout Looking for something? [Find it](#)

Travel History Clear

| Departing Airport | Arrival Airport | Date And Time Traveled | Leased Model |
|--------------------------------------|---------------------------------------|------------------------|----------------------|
| Los Angeles Airport, Los Angeles, CA | John F. Kennedy Airport, New York, NY | 2015-04-08 15:28:34 | Cessna 175 Skylark |
| Los Angeles Airport, Los Angeles, CA | Seattle Tacoma Airport, Seattle, WA | 2015-04-10 12:50:12 | Cessna 320 Skyknight |
| Los Angeles Airport, Los Angeles, CA | Seattle Tacoma Airport, Seattle, WA | 2015-04-10 12:50:17 | Cessna 320 Skyknight |

3.2.10 Use Case: Administrative user

Conducted by: Sundar

Valid Administrative User Results:

Administration

Hello admin

Main Page Logout Looking for something? [Find it](#)

Member List (Select any item to change their value)

| First Name | Last Name | Street Address | City | State | Zip | Avatar | Email | Phone | Password | Checkout | Register Date | Modify |
|------------|-----------|-----------------------|--------------|-------|-------|--------------|---------------------|------------|-------------|----------|---------------------|--|
| Sundar | Sekar | UMBC Hilltop | Baltimore | MD | 21526 | none specify | ssekar1@umbc.edu | 1234567890 | qwerty12345 | 0 | 2015-03-28 17:37:50 | Suspend Delete |
| Tam | Tran | 1000 Hilltop Circle | Baltimore | MD | 21250 | default2.png | tamtran1@umbc.edu | 4104551000 | test | 1 | 2015-04-04 19:58:06 | Suspend Delete |
| William | Cahill | 15706 Pissaro Terrace | Gaithersburg | MD | 20878 | default.jpg | sonicandrew@aol.com | 8019015353 | Koolism1 | 0 | 2015-04-08 21:02:04 | Suspend Delete |

Invalid Administrative User Results:

Administration

Login Error, Try Again

Looking for something? [Find it](#)

3.2.11 Use Case: Administrative Page

Conducted by: Sundar

Valid Administrative Paget Results:

| Administration | | | | | | | | | | | | |
|--|-----------|-----------------------|--------------|-------|-------|--------------|---------------------|------------|-------------|----------|---------------------|--|
| Hello admin | | | | | | | | | | | | |
| Main Page Logout <input type="text" value="Looking for something?"/> Find it | | | | | | | | | | | | |
| Member List (Select any item to change their value) | | | | | | | | | | | | |
| First Name | Last Name | Street Address | City | State | Zip | Avatar | Email | Phone | Password | Checkout | Register Date | Modify |
| Sundar | Sekar | UMBC Hilltop | Baltimore | MD | 21526 | none specify | ssekar1@umbc.edu | 1234567890 | qwerty12345 | 0 | 2015-03-28 17:37:50 | Suspend Delete |
| Tam | Tran | 1000 Hilltop Circle | Baltimore | MD | 21250 | default2.png | tamtran1@umbc.edu | 4104551000 | test | 1 | 2015-04-04 19:58:06 | Suspend Delete |
| William | Cahill | 15706 Pissaro Terrace | Gaithersburg | MD | 20878 | default.jpg | sonicandrew@aol.com | 8019015353 | Koolism1 | 0 | 2015-04-08 21:02:04 | Suspend Delete |

Invalid Administrative Page Results:

| Administration | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|
| Login Error, Try Again | | | | | | | | | | | | |
| <input type="text" value="Looking for something?"/> Find it | | | | | | | | | | | | |

3.2.12 Use Case: Avatar

Conducted by: Sundar, Roberto

Valid Avatar Results:


PLANES FOR HIRE

sundar sekar
1234 UMBC
bel, MD 21012
1234567890
ssekar1@yahoo.com

Plane on hold Cessna 165 Airmaster

Balance \$0

[Edit](#)


[Edit](#)

[Pay](#)
[Change password](#)

Invalid Avatar Results:

Warning: getimagesize(): Filename cannot be empty in C:\Users\Sundar Sekar\Documents\GitHub\Section-2-Team-4\www codes\uploadFile.php on line 17
File is not an image. Sorry, file already exists. Sorry, only JPG, JPEG, PNG & GIF files are allowed. Sorry, your file was not uploaded.

Error Message displays first

PLANES FOR HIRE

sundar sekar
1234 UMBC
bel, MD 21012
1234567890
ssekar1@yahoo.com

Plane on hold Cessna 165 Airmaster

Balance \$0

Edit

Edit

Pay

Change password

No image is uploaded

3.2.13 Use Case: Airplanes

Conducted by: Sundar

Valid Results:

Departing Airport

Los Angeles, CA

Arival Airport

Los Angeles, CA

Start Date

Rental Duration

Plane Model

Select A Plane

Select A Plane

Cessna 177 Cardinal

Cessna 162 Skycatcher

Cessna 205 Super Skywagon

Cessna 210 Centurion

Cessna 336 Skymaster

Cessna 421 Golden Eagle

Cessna 305 Bird Dog

Cessna 510 Citation Mustang

Cessna Model CR-1

Cessna Model CR-2

Cessna Model CR-3

Cessna 172 Skyhawk

Cessna 182 SkyLane

Cessna 320 Skyknight

Bombardier Learjet 35

Bombardier Learjet 40 XR

Bombardier Challenger 605

Bombardier Challenger 850

Bombardier Challenger 950

Plane Rental Price

Depart from:

Los Angeles, CA

Arrive to:

Los Angeles, CA

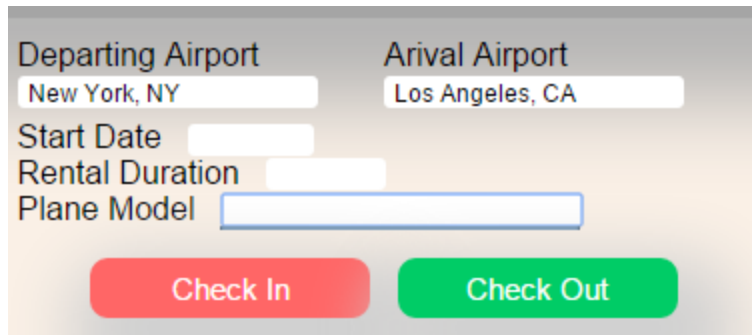
Rental duration:

Start date:

Return date:

Model:

Invalid Results:



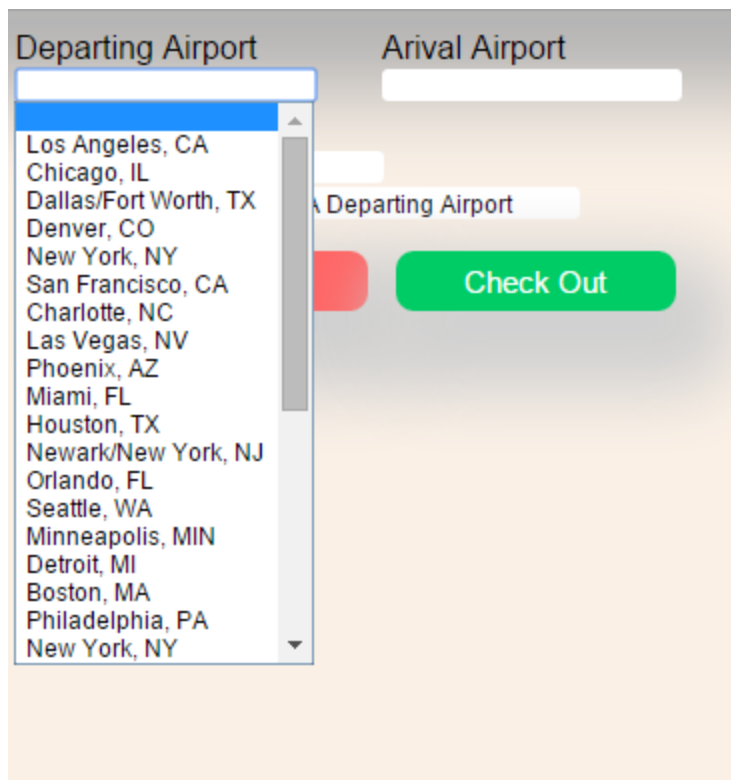
A screenshot of a flight booking form. The form has a light gray background with a white border. It contains the following fields and buttons:

- Departing Airport:** A text input field with "New York, NY" entered.
- Arival Airport:** A text input field with "Los Angeles, CA" entered.
- Start Date:** A text input field that is empty.
- Rental Duration:** A text input field that is empty.
- Plane Model:** A text input field that is empty.
- Check In:** A red button with white text.
- Check Out:** A green button with white text.

3.2.14 Use Case: Airports

Conducted by: Sundar

Valid Results:



A screenshot of a flight booking form. The form has a light gray background with a white border. It contains the following fields and buttons:

- Departing Airport:** A text input field with a dropdown menu open. The dropdown menu lists the following airports: Los Angeles, CA; Chicago, IL; Dallas/Fort Worth, TX; Denver, CO; New York, NY; San Francisco, CA; Charlotte, NC; Las Vegas, NV; Phoenix, AZ; Miami, FL; Houston, TX; Newark/New York, NJ; Orlando, FL; Seattle, WA; Minneapolis, MIN; Detroit, MI; Boston, MA; Philadelphia, PA; New York, NY.
- Arival Airport:** A text input field that is empty.
- Start Date:** A text input field that is empty.
- Rental Duration:** A text input field that is empty.
- Plane Model:** A text input field that is empty.
- Check In:** A red button with white text.
- Check Out:** A green button with white text.

3.2.15 Use Case: Account Protection

Conducted by: Sundar

Valid Results:

| | phone | password | travelHist | c |
|----|------------|--|--|---|
| tu | 4104551000 | \$2a\$10\$239CuRNuDq4BdXwFzV9o.OY5sn0ilCHeWhAHlrQQeD7... | C: 19:"SplDoublyLinkedList":5652: {i:0;;O:13:"Travel... | |
| | 0987654321 | \$2a\$10\$L7.gU0fPVs0gkpQpsuyp8OkDWat2MYIk9estjHc2i6D... | C: 19:"SplDoublyLinkedList":3596: {i:0;;O:13:"Travel... | |
| | 987 | \$2a\$10\$VyIYuv79LuwM7NQ5aYlv/.gMMjeAMzbhj84APau5LRA... | C: 19:"SplDoublyLinkedList":1910: {i:0;;O:13:"Travel... | |

3.2.16 Use Case: Waiting List

Conducted by: Sundar

Valid Results:

Departing Airport

Arival Airport

Los Angeles, CA

Dallas/Fort Worth, TX

Start Date

Rental Duration

Plane Model

x Cessna 303 Crusader

Check In

Check Out

This Plane is currently not available at this airport
Would you like to be added the waiting list instead?

Currently waiting: 1 people

No Yes

Appendix A - Team Review Sign-off

This document has been collaboratively written by all members the team. Additionally, all team members have reviewed this document and agree on both the content and the format. Any disagreements or concerns are addressed in team comments below.

Team

Name _____

Date _____

Sign _____

Comments _____

Name _____

Date _____

Sign _____

Comments _____

Name _____

Date _____

Sign _____

Comments _____

Name _____

Date _____

Sign _____

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Appendix B - Team Review Sign-off

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Date _____
Sign _____
Comments _____

Appendix C - Document Contributions

Sundar Sekar assembled the document. He reviewed and edited the document. Robert added information for part 1 . Andrew Added information for part 2. Du added information for part 3 and Appendix c.

Tam, Andrew, Sundar, and Roberto updated Spiral 2.