

# 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

## 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	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: 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

### **3.2 Test Results**

State the name of the tester for the particular use case. Summarize those test cases from the above that you were not able to execute, for any reason, and briefly explain the difficulty. Summarize those test cases that ran and the actual result was identical to the expected result. Summarize those test cases that ran and the actual result was not the same as the expected result, but was nevertheless correct. Explain the discrepancy. Describe each defect detected. For each defect, outline either a suggested repair or the actual repair you made. In the cases where you successfully removed the bug, or at least tried to fix the bug but were unable to do so, briefly describe any changes you made to the program, including the modules, functions, classes, data structures, etc. affected. Try to explain the underlying logical cause of the defect in the program code.

The results from testing are outlined in the tables below.

#### **3.2.1 Use Case: Check Out**

**Conducted by: Tam**

Valid Check Out Results:

A screenshot of a web application interface showing successful check-out results. The top section contains input fields for 'Departing Airport' (Los Angeles, CA), 'Arival Airport' (Chicago, IL), 'Start Date' (04/08/2015), 'Rental Duration' (5 day), and 'Plane Model' (Cessna 175 Skylark). Below these are two buttons: 'Check In' (red) and 'Check Out' (green). The main content area displays a summary: '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', and 'Beginning on 04/08/2015 to 4/12/2015'. A 'Continue' button is at the bottom right.

Departing Airport Los Angeles, CA Arival Airport Chicago, IL

Start Date 04/08/2015

Rental Duration 5 day

Plane Model Cessna 175 Skylark

Check In Check Out

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

Continue

Web page displays check out results

Invalid Check Out Results:

1. Form is incomplete

A screenshot of the same web application interface, but with an incomplete form. The 'Departing Airport' and 'Arival Airport' fields are empty. The 'Start Date' and 'Rental Duration' fields are also empty. The 'Plane Model' field has a placeholder text 'Select A Departing Airport'. The 'Check In' and 'Check Out' buttons are still present. At the bottom, a red error message reads 'Rental form incomplete'.

Departing Airport Arival Airport

Start Date

Rental Duration

Plane Model Select A Departing Airport

Check In Check Out

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 rnelgar123@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:

Departing Airport  Arival Airport

Start Date

Rental Duration

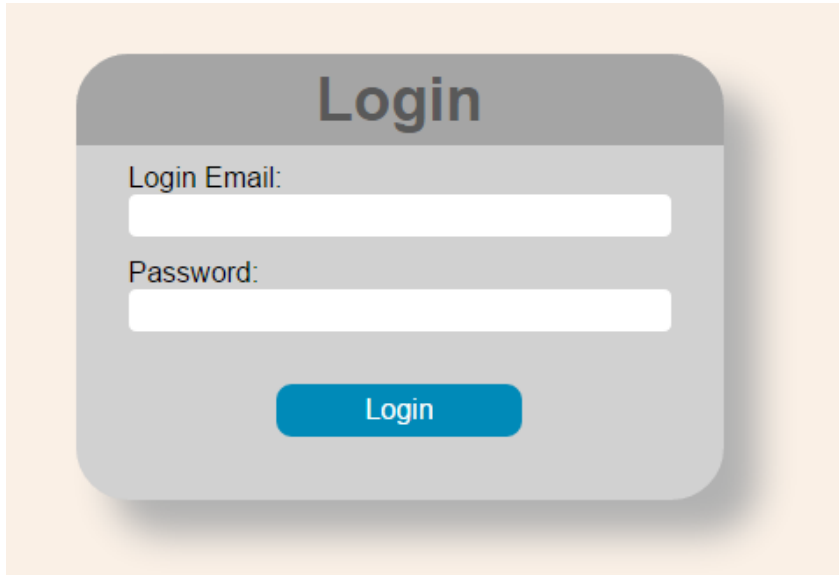
Plane Model

You currently dont have any planes checked out

### 3.2.3 Use Case: User Login

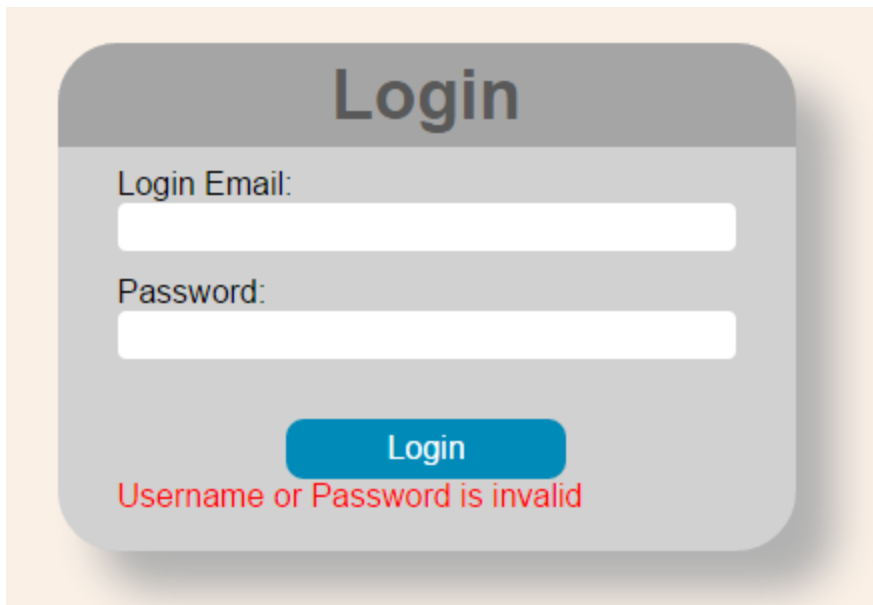
**Conducted by: Sundar**

Valid User Login Results:



A screenshot of a login form titled "Login" on a light gray background. The form has two input fields: "Login Email:" and "Password:". Below the fields is a blue button labeled "Login". The form is set against a light orange background.

Invalid User Login Results:

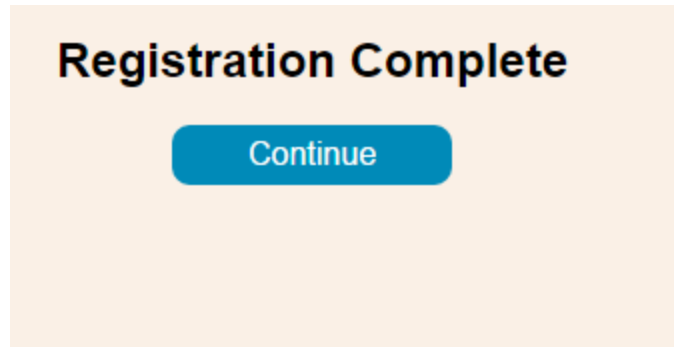


A screenshot of the same login form as above, but with an error message. The "Login" button is still present. Below the button, the text "Username or Password is invalid" is displayed in red. The form is set against a light orange background.

### 3.2.4 Use Case: Registration

Conducted by: Sundar

Valid Registration Results:

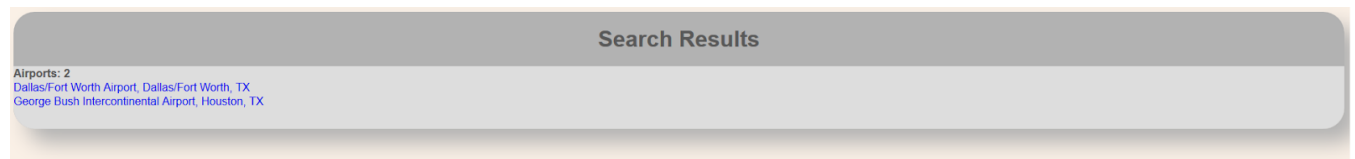


Invalid Registration Results:

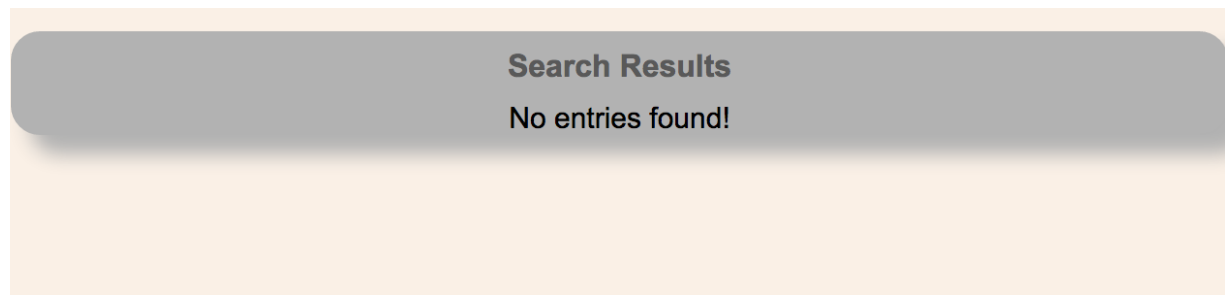
### 3.2.5 Use Case: Search Bar

Conducted by: Sundar, Tam, Andrew

Valid Results:



Invalid Results:



### 3.2.6 Use Case: Clickable Pins

Conducted by: Sundar

Valid Results:



### 3.2.7 Use Case: Google Maps

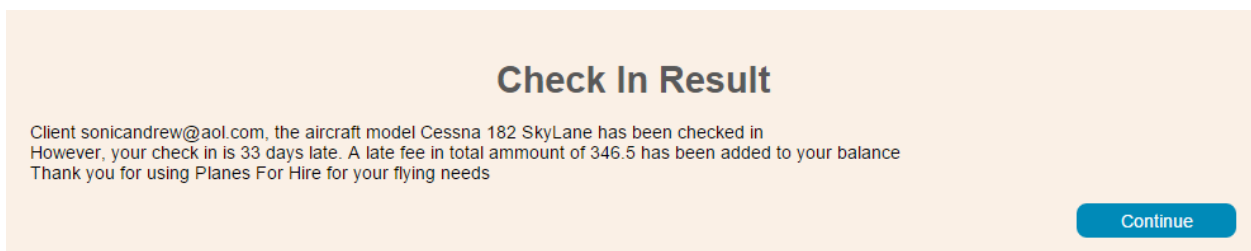
Conducted by: Sundar

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](#)

[Edit](#)

Travel History	Clear	Arrival Airport	Date And Time Traveled	Leased Model
Departing Airport		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**

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

Hello admin

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	<a href="#">Suspend</a> <a href="#">Delete</a>
Tam	Tran	1000 Hilltop Circle	Baltimore	MD	21250	default2.png	tamtran1@umbc.edu	4104551000	test	1	2015-04-04 19:58:06	<a href="#">Suspend</a> <a href="#">Delete</a>
William	Cahill	15706 Pissaro Terrace	Gaithersburg	MD	20878	default.jpg	sonicandrew@aol.com	8019015353	Koolism1	0	2015-04-08 21:02:04	<a href="#">Suspend</a> <a href="#">Delete</a>

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												
<a href="#">Main Page</a> <a href="#">Logout</a> <input type="text" value="Looking for something?"/> <a href="#">Find it</a>												
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	<a href="#">Suspend</a> <a href="#">Delete</a>
Tam	Tran	1000 Hilltop Circle	Baltimore	MD	21250	default2.png	tamtran1@umbc.edu	4104551000	test	1	2015-04-04 19:58:06	<a href="#">Suspend</a> <a href="#">Delete</a>
William	Cahill	15706 Pissaro Terrace	Gaithersburg	MD	20878	default.jpg	sonicandrew@aol.com	8019015353	Koolism1	0	2015-04-08 21:02:04	<a href="#">Suspend</a> <a href="#">Delete</a>

## Invalid Administrative Page Results:

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

### 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

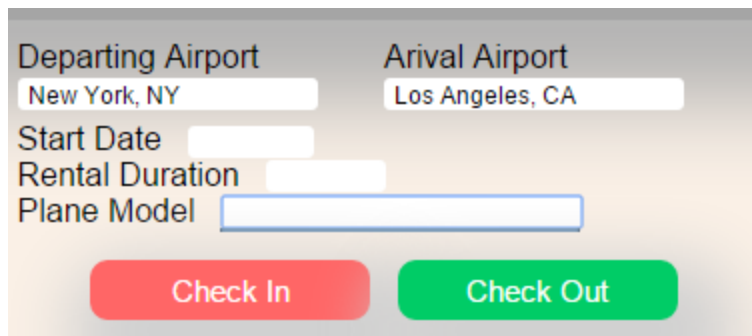
Rental duration:

Start date:

Return date:

Model:

Invalid Results:

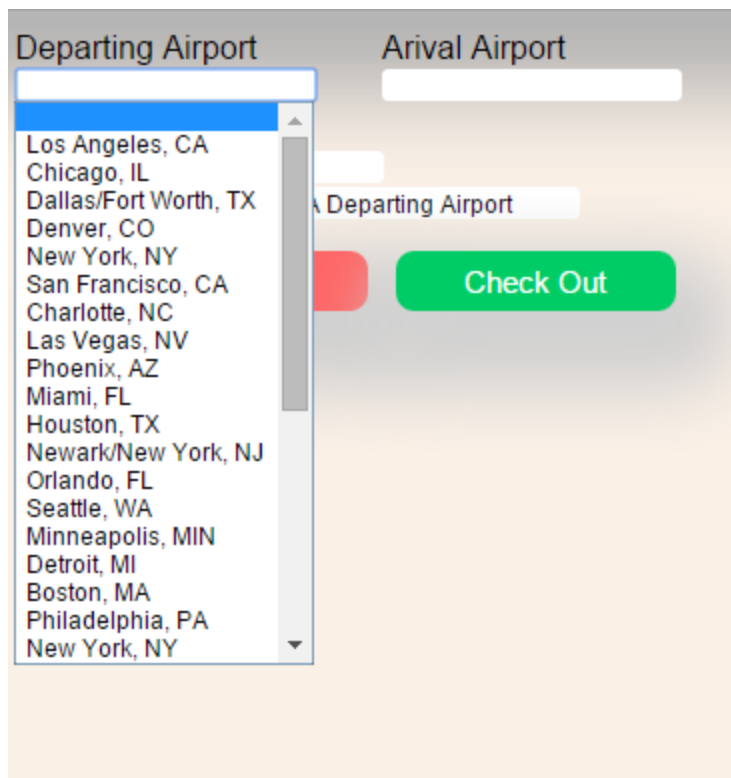


A screenshot of a flight booking form. The form has two columns. The left column has labels: 'Departing Airport', 'Start Date', 'Rental Duration', and 'Plane Model'. The right column has a label: 'Arival Airport'. Below the labels are input fields. The 'Departing Airport' field contains 'New York, NY'. The 'Arival Airport' field contains 'Los Angeles, CA'. The 'Start Date' field is empty. The 'Rental Duration' field is empty. The 'Plane Model' field is empty. At the bottom of the form are two buttons: a red button labeled 'Check In' and a green button labeled 'Check Out'.

### 3.2.14 Use Case: Airports

**Conducted by: Sundar**

Valid Check Out Results:



A screenshot of a flight booking form. The form has two columns. The left column has labels: 'Departing Airport', 'Start Date', 'Rental Duration', and 'Plane Model'. The right column has a label: 'Arival Airport'. Below the labels are input fields. The 'Departing Airport' field is open, showing a list of 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, and New York, NY. The 'Arival Airport' field is empty. At the bottom of the form are two buttons: a red button labeled 'Check In' and a green button labeled 'Check Out'.

Invalid Check Out Results:

**None**

## 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 \_\_\_\_\_

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\_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

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Comments \_\_\_\_\_

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Name \_\_\_\_\_

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Name \_\_\_\_\_

Date \_\_\_\_\_

Sign \_\_\_\_\_

Comments \_\_\_\_\_

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# Appendix B - 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** \_\_\_\_\_  
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**Name** \_\_\_\_\_  
**Date** \_\_\_\_\_  
**Sign** \_\_\_\_\_  
**Comments** \_\_\_\_\_  
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**Name** \_\_\_\_\_  
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**Sign** \_\_\_\_\_  
**Comments** \_\_\_\_\_  
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**Name** \_\_\_\_\_  
**Date** \_\_\_\_\_  
**Sign** \_\_\_\_\_  
**Comments** \_\_\_\_\_  
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## 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.