

# Airline Reservation

## Case Study



## Topic – Airline Reservation Domain - Transportation

### Project Abstract:

Online Airline Reservation is a web application which provides a user-friendly User Interface and an easy efficient way to search, book and cancel flight tickets. This application is currently working for a single airline company and only for domestic flights.

User have access to search flights and apply for it. User can register on website to search for flights and book tickets. On booking it provides a unique ticket number through which user can track its flight details. It also allows user to cancel flights before a specific time.

### Problem Statement

Today's most of the airline's website are lagging in some areas like some are not providing proper UI which could be user friendly while some are slow in processing pages or are not dynamic. Software must be developed for automating the online reservation system of airline.

The system should be a web application. It should be designed to provide functionalities like booking of tickets in which a user should be able to apply for tickets of any flight and of any class. A limitation is imposed when the number of tickets for which user apply is greater than available seats or no seats are available. If seats are not available, then user should be notified accordingly. If the tickets are available, then it is issued to the user and it must be updated in the database concurrently. The system should generate the receipt for the same. The software takes the current system date and time as the date of issue and calculates the amount to be paid by the user. It also provides the functionality of cancellation of tickets. If the user wants to cancel the tickets, user must enter the details. The system checks the records from the database if it is matched with the user entered details, then it cancels the tickets. User should be allowed to cancel the ticket before 3 hours of the flight departure. The system also calculates the amount to be return to the user after deductions. The system must update the database for the same. The system displays the details of flight of which user enter the booking reference number/PNR number. The information is saved, and the corresponding update take place in the database. In the enquiry, the system

should be able to provide information like the availability of tickets of flight, flight schedule. The corresponding print outs for each entry (issue/cancel) in the system should be generated. The admin can login into system and Add or Delete a flight.

### **Mandatory Modules:**

- **Flight Search**- This module will take details from user such as departure airport, destination airport, travelling date span, type of ticket (one way/return), return date (for return ticket), no of passengers. This detail will be compared with the flights database and return the user details of the available flights.
- **Flight select**- Here user will select the flight, class type, seat and from the list of available flight provided
- **Registration**: Provide registration for individual users to create account for booking tickets.
- **Login**: Inputs username and password to provide access to user to navigate through options for booking, cancellation and payment option.
- **Payment** – take payment details from user and check balance and deduct amount.
- **Cancellation**- cancel booking by user if needed.
- **Admin Module:**
  1. Login
  2. Add & Delete Flight
- **User Module:**
  1. Login
  2. Register
  3. Flight Search

4. Flight Select
5. Payment

## Description of Modules:

- USER MODULE:

On the home page, user will be provided with a search for a flight section where he/she can search for a flight for seat availability and price details. On clicking the search button user can select a flight and click on book now button which will redirect user to login page where along with login section register link will be provided in case user is not registered. On successful login, user will be required to redirect to Payment page and on clicking register link, it will redirect to registration page. Three main processes which need to be followed are mentioned below:

1. REGISTRATION:

Any visitor who visits the website for first time will be required to register to create user account. Details needed to enter for registration are,

- i. Title
- ii. First Name
- iii. Last Name
- iv. Email Id
- v. Password
- vi. Confirm Password
- vii. Date of Birth
- viii. Phone Number

At the end of the form 2 buttons are provided first will be a Sign-up button which on clicking will create user account on website so that user will be able to login on website to book tickets using credentials like email id and password and the second button will be cancel to cancel the process.

2. Login:

After registration the user will be able to login using credentials and then the user will be able to get flight details about their fares and book tickets of flight and easy way of payment of tickets online.

3. Search Flight:

Any visitor of the website should be able to search for a flight, but booking can only be done after logging-in to the website. Their user must fill following fields while searching for a flight,

- i. One way/Return
- ii. From/Source
- iii. To/Destination

- iv. Date of Departure
- v. Date of Return (if it is return journey)
- vi. Number of passengers

Number of passengers consists of adults, children and infants. After the details are filled the user clicks on search button to see available flight details. If user clicks on cancel button the fields and selection get cleared.

4. Select Flight:

On clicking search user is directed to page where flight details are displayed with fares as per number of passengers. User will select one flight for journey and then will click on continue page for next process.

5. Select seat:

After selecting flight user will be asked to enter passenger's details and select seats before going for payment.

6. Forget password:

In case if user forgets password he/she can change password by clicking on forget password.

7. Payment:

After selecting seat and providing passengers details and confirming it, user is redirected to payment page. Payment will be done by credit/debit card process easy and efficient way for user.

• **ADMIN MODULE:**

Admin is provided with fixed username and password. Admin is one belongs to organization and has privileges to update database regarding flights. Admin page is not visible to users and will be handled by organization employee only. Admin consists of sub modules such as,

1. LOGIN:

Admin will login with credentials which will be fixed and will be known to admin only. Using those credentials admin will login to access details regarding flights among different places in country.

2. ADD:

After login admin can add new flight details in the database so that it will be reflect to user who visits website to search flight details.

3. DELETE:

If in case due to some problems any flight gets cancelled or terminated, then admin will be able to delete such flight so that user will not get those flights visible and thus no false details will be shown to user.

4. VIEW:

Admin will be able to display all flights details available and new data which might get changed by user only like adding new or deleting one.

### **Project Flow:**

A visitor at first will complete registration process by providing required details. User then will be able to login using credentials. User will provide cities name as source and destination, travel date, type of class like economy and business and number of passengers. On entering those details, the user will get flight details on basis of source and destination and tickets fares as per number of passengers and type of class selected by user.

On selecting a flight after reading all the information regarding that flight, the user is redirected to page to enter details of passenger of whom the flight tickets are going to print like if user enters number of passengers as 3 then user must enter details of 3 passengers like full name, age.

After entering the details user is directed to the payment page. A simple and easy payment process where user will have required to pay using credit/debit card. A confirmation is asked before making the payment method complete and booking ticket for passengers.

After that if user wants to check details of his/her booked flight details then which can be viewed from their profile.

### **Validation Parameters:**

During registration user will be required to enter password in a specified format like it should be more than 8 characters and in alphanumeric format and should contain one uppercase letter and one special character. This makes the password strong and difficult to crack.

User is required to enter or select every field during booking process. During login the credentials are checked to make sure that the user trying to login is authorized user and will be allowed to avail the services.

## Sample Output Screen for reference:

**Flight Search** – User can search flights by specifying all the form fields.

(NAV)	Login/Signup
<div><div><div>One way</div><div>Round Trip</div><div>From</div><div>To</div><div>Departure Date</div><div>Return Date</div><div>Passenger(s)</div><div>Search</div></div></div>	
(FOOTER)	

## Flight Select – User can search a flight among the displayed flight.

(NAV)	Login/Signup	
Flight Detail (Flight Name) (Time From – Time To) (Duration)	Economy class price	Business Class Price
Continue		
(FOOTER)		

## Login Page:

USER LOGIN		ADMIN LOGIN	
Username	<input type="text"/>		
Password	<input type="password"/>		
<input type="button" value="LOGIN"/>		<input type="button" value="SIGN UP"/>	
<a href="#">Forget Password?</a>			



# Registration Page:

<u>TITLE</u>	<input type="text"/>	<u>FIRST NAME</u>	<input type="text"/>
<u>LAST NAME</u>	<input type="text"/>	<u>EMAIL ID</u>	<input type="text"/>
<u>PASSWORD</u>	<input type="text"/>	<u>CONFIRM PASSWORD</u>	<input type="text"/>
<u>DATE OF BIRTH</u>	<input type="text"/>	<u>PHONE NUMBER</u>	<input type="text"/>
		<input type="button" value="SIGN UP"/>	<input type="button" value="CANCEL"/>

**Seat Select:** Passenger can select seat(s) as per his/her choice.

(NAV)

Select seat(s)

1A	1B	1C	X	1E	1F
2A	2B	2C	2D	2E	2F
3A	3B	3C	3D	3E	3F
4A	4B	4C	4D	4E	4F
5A	5B	5C	5D	5E	5F
6A	6B	6C	6D	6E	6F
7A	7B	7C	7D	7E	7F
8A	8B	8C	8D	8E	8F
9A	9B	9C	9D	9E	9F
10A	10B	10C	10D	10E	10F

Payment

(FOOTER)

# ADMIN

## Add Flight – Admin can add a new flight(s)

(NAV)

Flight Number	<input type="text"/>
From	<input type="text"/>
To	<input type="text"/>
Depart	<input type="text"/>
Arrive	<input type="text"/>
Duration	<input type="text"/>
Cabin	<input type="text"/>
<input type="button" value="ADD"/>	

(FOOTER)

## Delete Flight – Admin can delete flight(s) from database

(NAV)
<div><div>Flight</div><div><input type="text"/></div><div>Delete</div></div>
(FOOTER)

## Agile Methodology:

### Abstract:

Agile development is a group of software development methodology based on iterative and incremental development, in which requirements and solutions evolve through collaboration between self-organizing, cross-functional teams.

Steps to follow in Agile methodology:

- You need to identify various user stories and its modules/tasks which needs to be implemented in the project as a part of Sprint planning.
- Divide all the user stories in two Sprints. Duration of each Sprint will be 3 days.
- Any backlogs of Sprint 1 should be included in Sprint 2 along with stories of Sprint 2.
- You need to prepare Scrum boards for each sprint. You can include both sprints in one scrum board if there is enough space for the same.

Instructions for writing scrum board:

- Chart papers, sketch pens, measurement scale and sticky notes will be provided for scrum board preparation.
- You need to decorate your scrum board well and it should be clean, visible and self-explanatory.

- Discover a unique name for your project.
- Mention Group Number, TL and group member's name in the scrum board.

**Format for Scrum Board:**

Your Project Name					
<div>Team Leader: &lt;Name&gt;</div> <div>Group Members:</div> <div>1.</div> <div>2.</div> <div>3.</div> <div>Logo, if any</div>					
User Story	TO DO	In Progress	Impediments	To Verify	Done