



# **INSTITUTE FOR ADVANCED COMPUTING AND SOFTWARE DEVELOPMENT AKURDI, PUNE**

Documentation On

**“Airline Reservation System”**  
PG-DAC MAR 2022

*Submitted By:*

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**Project Guide**

# ACKNOWLEDGEMENT

This project “**AirTaxi-Airline Reservation System**” was a great learning experience for us and we are submitting this work to Institute for Advanced Computing and Software Development-Akurdi, Pune.

We are very glad to mention **Mrs. Manjiri** & for their valuable guidance to work on this project. Her guidance and support helped us to overcome various obstacles and intricacies during the course of project work.

Our heartfelt thanks goes to **Mr.Kehshav** (Course Coordinator, PG-DAC) who gave all the required support and kind coordination to provide all the necessities to complete the project and throughout the course up to the last day here in IACSD-AKURDI, Pune.

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# 1. Introduction

The web based “AirTaxi- Airline Reservation System” project is an attempt to stimulate the basic concepts of airline reservation system. The system enables the customer to do the things such as search for airline flights for two travel cities on a specified date, choose a flight based on the details and reservation of flight.

The system allows the airline passenger to search for flights that are available between the two travel cities, namely the “Departure city” and “Destination city” for a particular departure dates. The system displays all the flight’s details such as flight no, name, price and time of journey etc.

Here we provided search facility which displays list of available flights and allows customer to choose a particular flight. Then the system checks for the availability of seats on the flight. If the seats are available then the system allows the passenger to book a seat. Otherwise it asks the user to choose another flight.

To book a flight the system asks the customer to enter his details such as name, email, credit/debit card number and contact number. Then it checks the validity of card and book the flight and update the airline database and user database.

## 2. Project Overview

### Purpose:

Airline Reservation System aims to automate the flight operations and ticketing/seat booking and confirmation system of an Airline company. The software is providing options for viewing different flights available within a different timings for a specific day. That provide customers within facility to able to book ticket smoothly. The customers can modify and able to cancel the ticket for any reason. That prepare within a role and policies. The software should provide option for checking availability of the tickets. That is important for the customers to get message if the ticket unavailable. That will be displayed into customers. The customers should be noted when the change has been made or any further changes.

### Scope:

The airline booking website is an application stored in the Passenger server. The purpose of the website is to resolve the client to allow website Passengers to perform tasks related to booking an airline flight. The system enables to perform the following functions:

- Automation of flight operations
- Automation of ticketing/seat booking
- confirmation system
- Cancellation
- Improved and optimized service

### Feasibility:

A feasibility study is an analysis that takes all of a project's relevant factors into account—including economic, technical, and scheduling considerations—to ascertain the likelihood of completing the project successfully.

A feasibility study is simply an assessment of the practicality of a proposed plan or project.

The following feasibility studies were conducted to make sure that our software is feasible:

#### Technical feasibility:

As per this study, we found that our choice of technology stack was conducive enough to bring the project to fruition. Irrespective of the system in which our backend ran, the results were as expected and platform dependency was not found.

In the type of feasibility study, the system analyst has to check whether it is possible or not to develop the requested system with availability of manpower,

software, hardware, etc...The system which we run in Linux as well as windows platform and hence are suitable for the end-user. The system is technically feasible because it does not require too much manpower and runs with the basic available equipment.

**Operational feasibility:**

As per this study, we came to the conclusion that system is user friendly and easy to maintain. The project offers a great deal of user experience and convenience to the target group.

We need to train our staff so that system will be handled efficiently. As the system developed is very user-friendly and easy to operate for any person with minimum computer knowledge is also able to handle our system. It is also easy to operate due to the user-friendly interface developed using React JS, JavaScript and their respective libraries.

**Economical feasibility:**

As per this study, we concluded that the technology stack we are using in our project is open sourced, freely available and well-maintained by the community. This reduces the cost of system as well as development cost, without compromising the quality of the product. This system was found to be ergonomic to the target customer base.

### 3. Overall Description

#### Requirement Specification

This section highlights the functional requirements, non-functional requirements and other requirements.

#### Functional requirements

- **Administrator-**

- Admin can add a new airplane information.
- Admin can managing the booking of airplane.
- Admin can view all Flight details.
- Admin can also edit the information of passengers.
- Admin can cancel the booking.
- Admin view Feedback received from customer or passenger.
- Database Management: Control the database and keep track of all the records of passengers and flight details.

- **Passenger –**

- Passenger can book the flight according to their requirement. If the flight is available.
- Passengers will see the history of what time the flight is and where it is from.
- Passenger can also delete the booking.
- Passenger also can check the flight on that route by providing the starting location and destination and book ticket accordingly.
- Provide Feedback/Rating: Can give feedback/rating for that particular flight and their staff.

- **Module Specification –**

- Registration and creation of user profile.
- Checking Availability.
- Making Reservations/Blocking/Confirmation.
- Confirm Ticket.
- Reschedule Ticket.
- Cancellation.

## **Performance requirements**

- Passenger Satisfaction: The system is such that it stands up to the Passenger expectations.
- Response Time: The response of all operations is good.
- Error Handling: Response to Passenger errors and undesired situation has been taken care of to ensure that the system operates without halting.
- Safety and Robustness: The system is able to avoid or tackle disastrous action. In other words it should be fool proof.
- Portable: The software should not be architecture specific. It should be easily transferable to other platforms if needed.
- Passenger Friendliness: The system is easy to learn and understand. A native Passenger can also use the system effectively, without any difficulties.

## **Hardware Requirements.**

For the hardware requirements like memory restrictions, cache size, the processor, RAM size etc... Those are required for the software to run.

### **PREFERRED HARDWARE REQUIREMENTS**

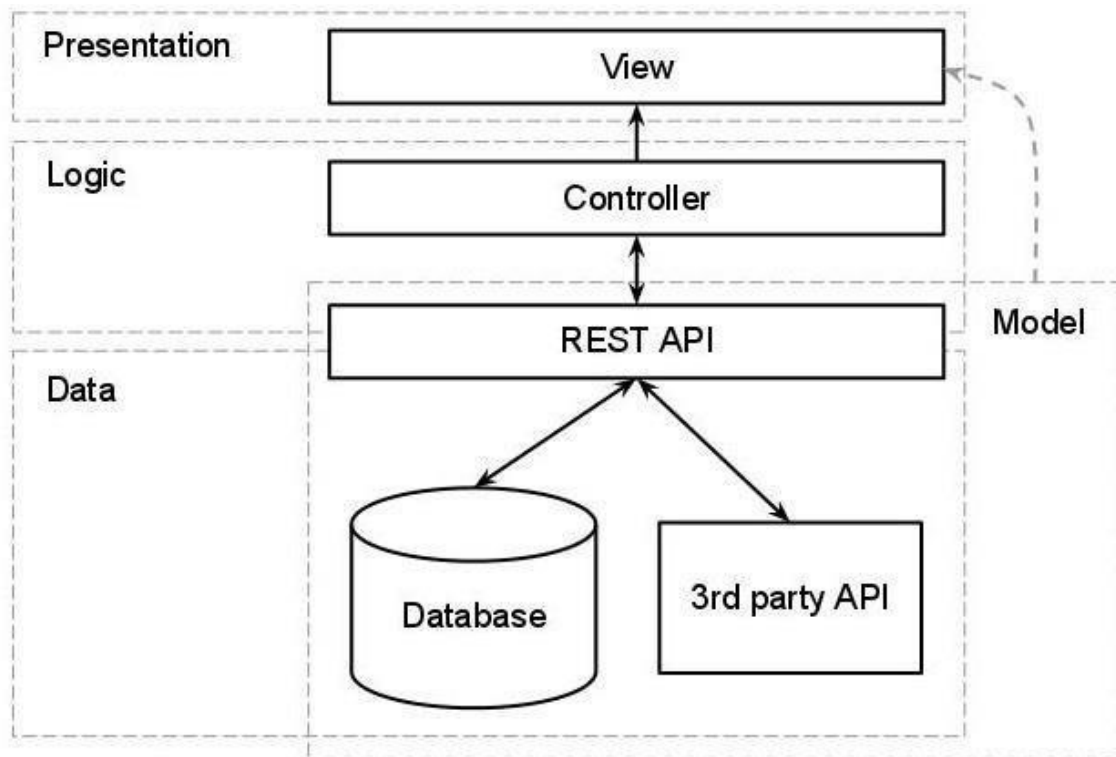
- Processor Core i3
- Hard Disk Drive 500 GB
- RAM 4 GB

### **Software Requirements**

Any window based operating system with DOS support are primary requirements for software development. Windows 7 and up are required. The system must be connected via LAN and connection to internet is mandatory.



## Architecture Diagram:



# 1. Design

## Database Design

The following table structures depict the database design.

**Table 1: Users**

```
mysql> desc users;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
card_number	varchar(255)	YES	UNI	NULL	
expiry_date	date	YES		NULL	
name_on_card	varchar(255)	YES		NULL	
email	varchar(30)	NO	UNI	NULL	
first_name	varchar(30)	YES		NULL	
last_name	varchar(30)	YES		NULL	
mobile_no	varchar(15)	YES		NULL	
password	varchar(30)	NO		NULL	
status	int	NO		NULL	
user_role	varchar(255)	YES		NULL	

**Table 2:Passengers**

```
mysql> desc passengers;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
gender	varchar(255)	YES		NULL	
passenger_age	int	NO		NULL	
passenger_name	varchar(30)	YES		NULL	
passenger_type	varchar(255)	YES		NULL	
seat_number	int	NO		NULL	
booking_id	int	YES	MUL	NULL	

**Table 3: Cities**

```
mysql> desc cities;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
city	varchar(255)	YES		NULL	

**Table 4: Airlines**

```
mysql> desc airline;
```

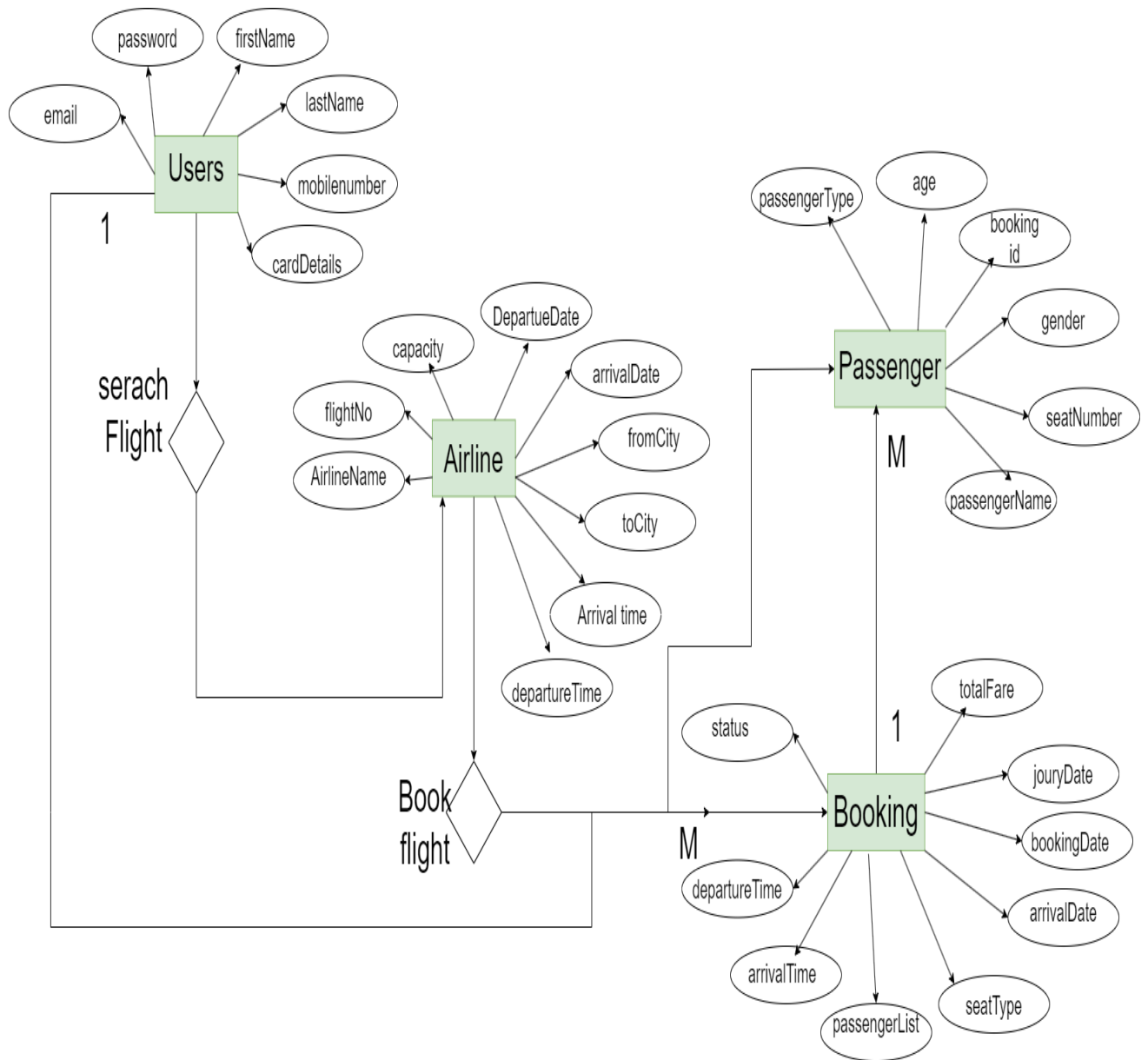
Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
airline_name	varchar(30)	YES		NULL	
airline_no	varchar(30)	YES	UNI	NULL	
arrival_date	date	YES		NULL	
arrival_time	time	YES		NULL	
available_seats	int	NO		NULL	
business_fare	double	NO		NULL	
capacity	int	NO		NULL	
departure_date	date	YES		NULL	
departure_time	time	YES		NULL	
economy_fare	double	NO		NULL	
from_city	varchar(30)	YES		NULL	
to_city	varchar(30)	YES		NULL	

**Table 5:Bookings**

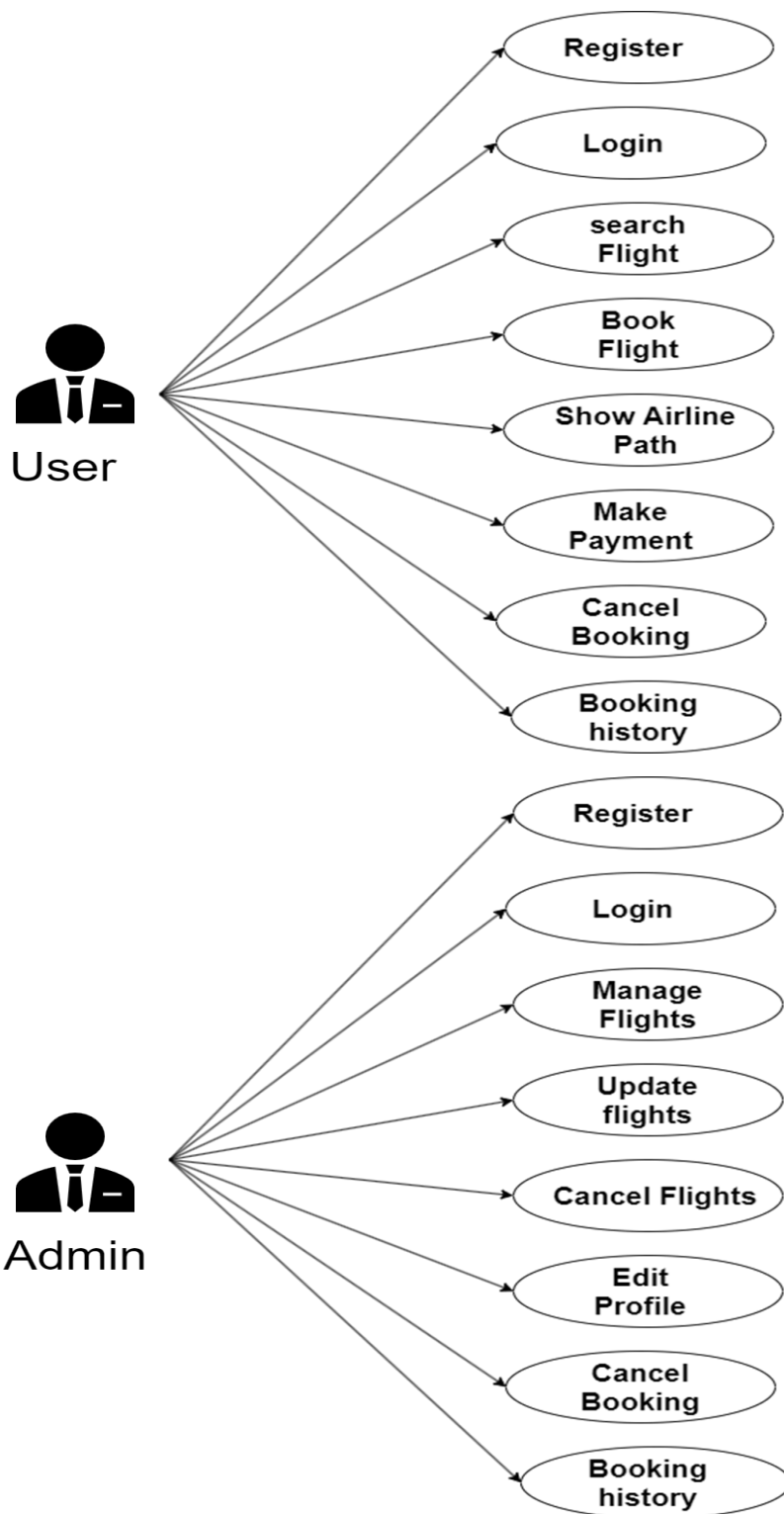
```
mysql> desc bookings;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
airline_id	int	NO		NULL	
arrival_date	date	YES		NULL	
arrival_time	time	YES		NULL	
booking_date	date	YES		NULL	
departure_time	time	YES		NULL	
feedback	varchar(1000)	YES		NULL	
journey_date	date	YES		NULL	
seat_type	varchar(255)	YES		NULL	
status	int	NO		NULL	
total_fare	double	NO		NULL	
user_id	int	YES	MUL	NULL	

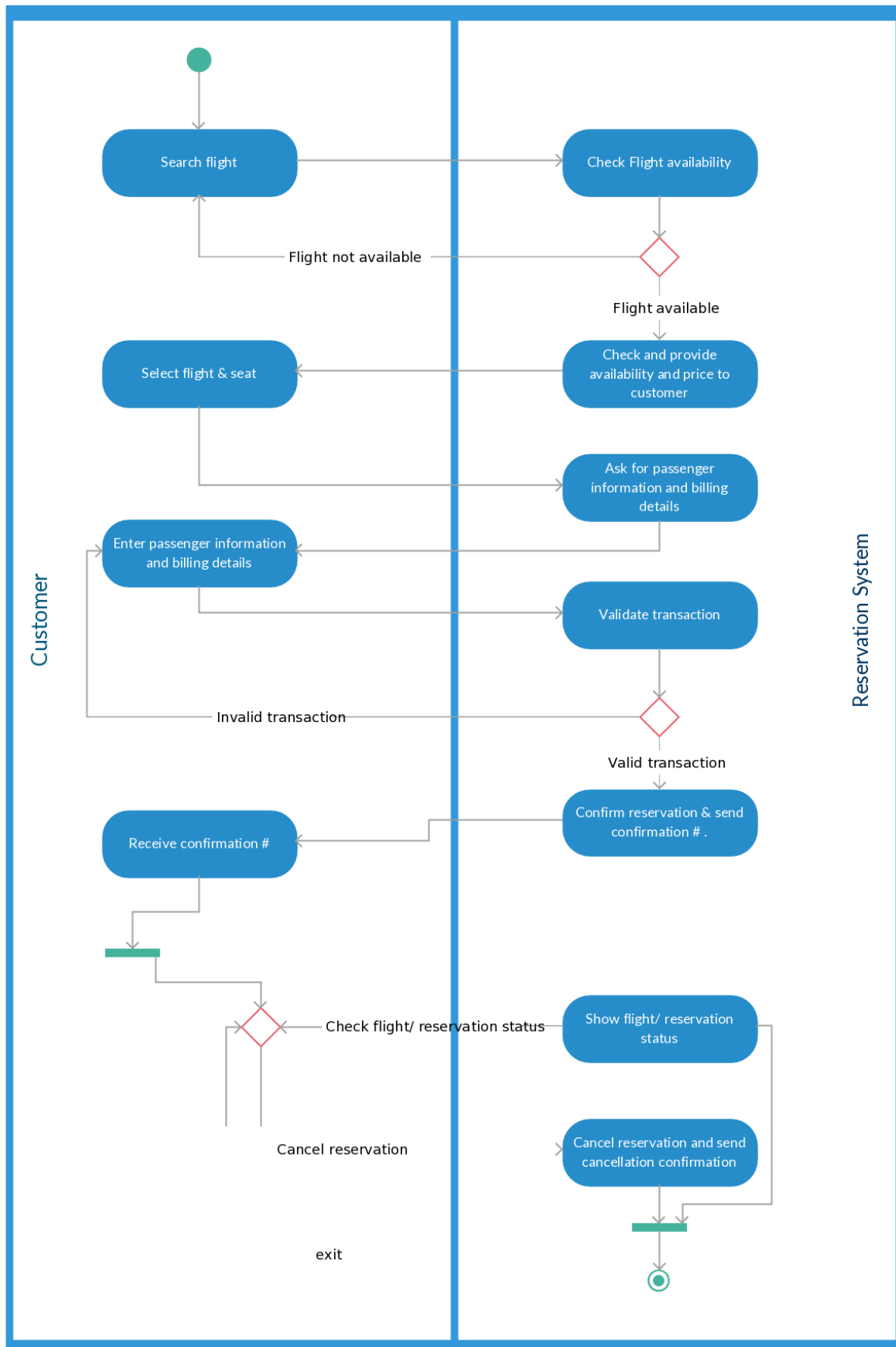
## ➤ ER Diagram



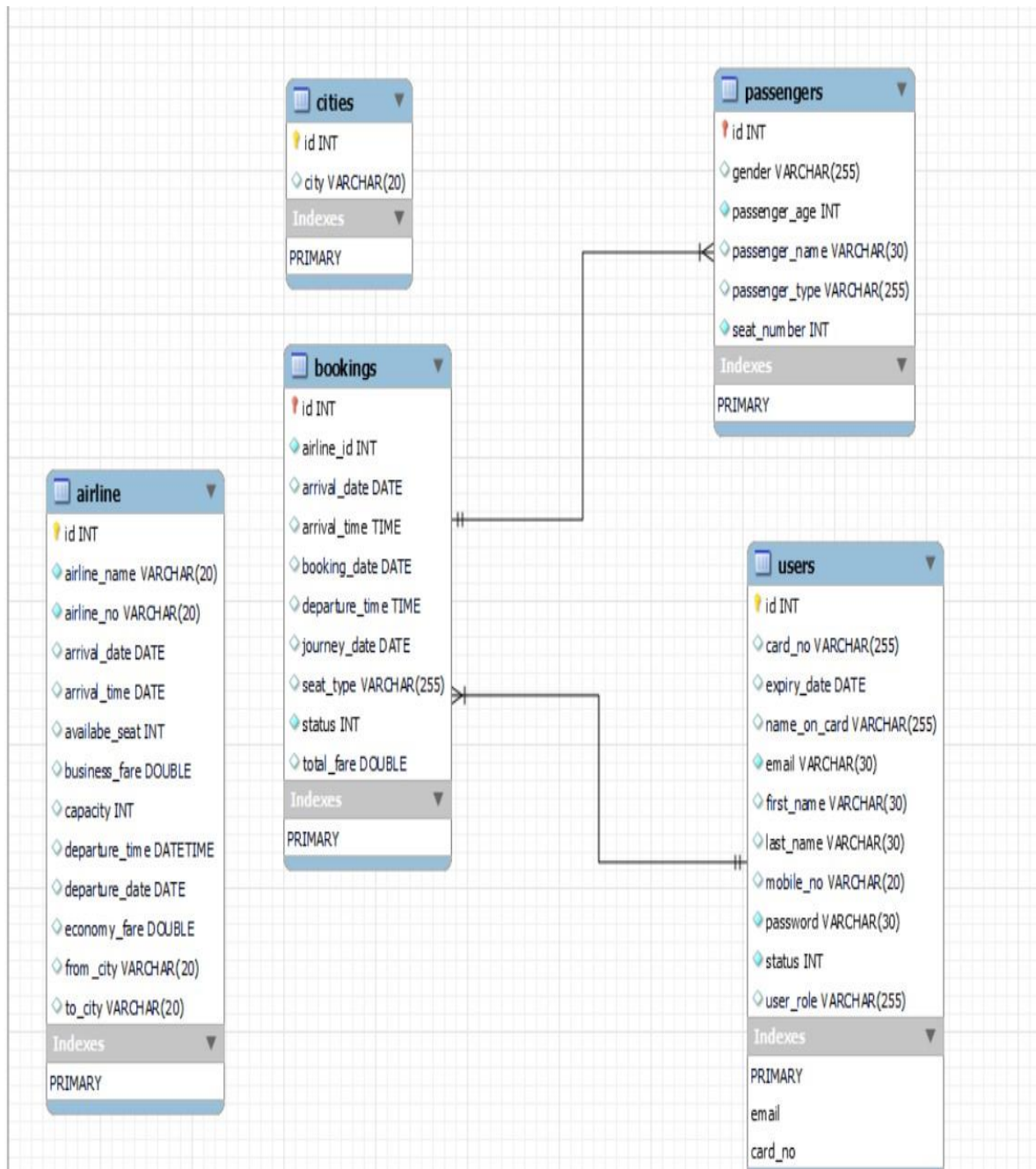
## ➤ UseCase Diagram



## ➤ Activity Diagram

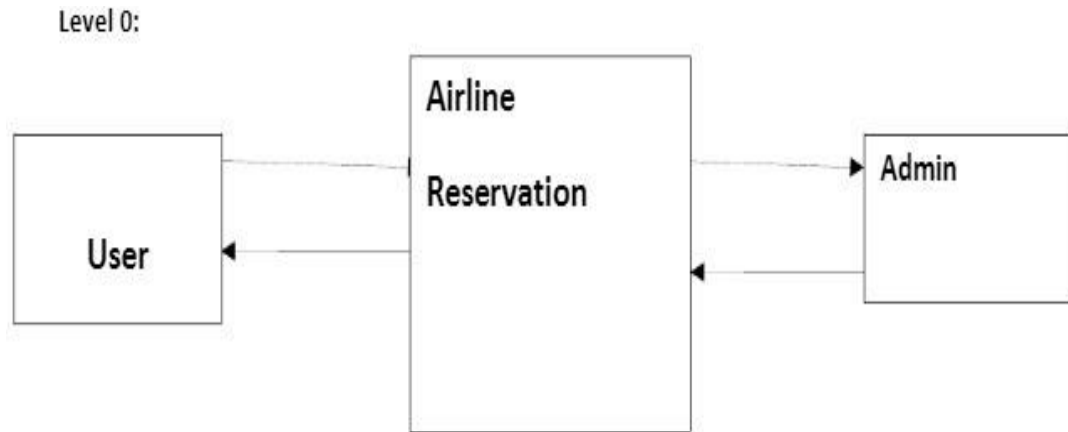


## ➤ Class Diagram:

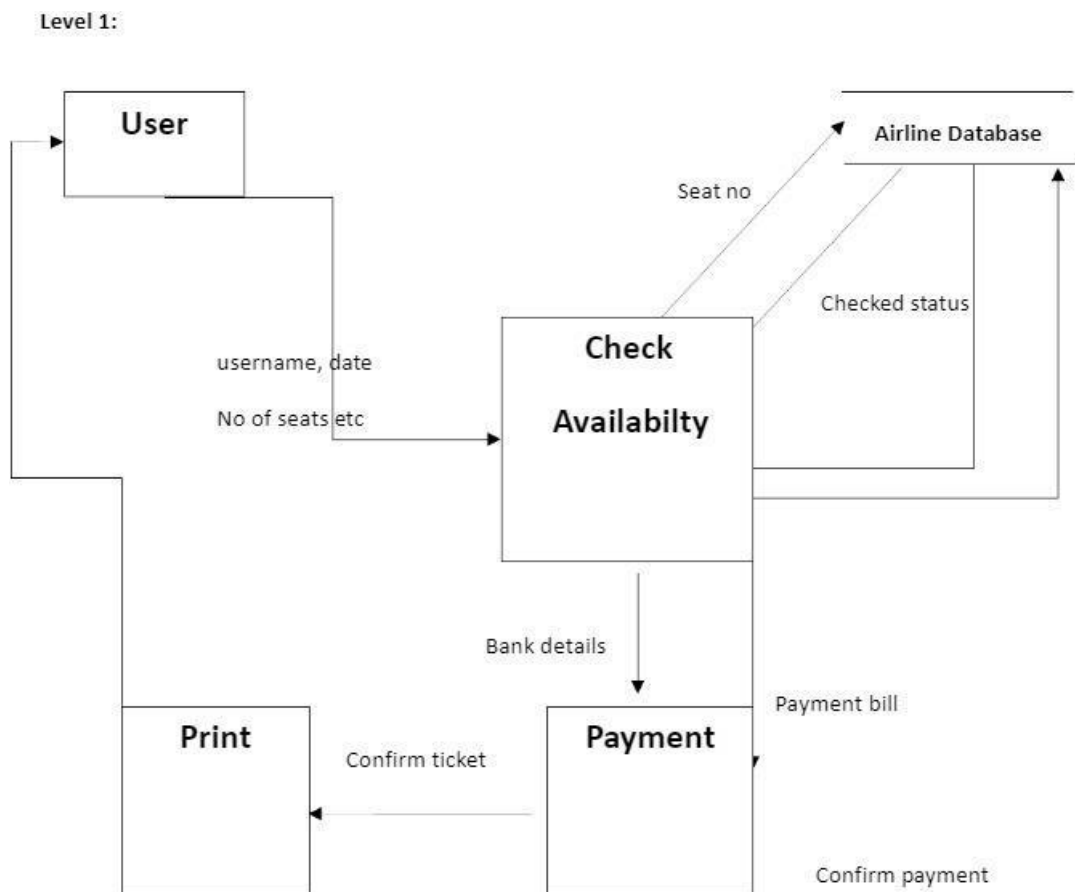




## Level 0 DFD:

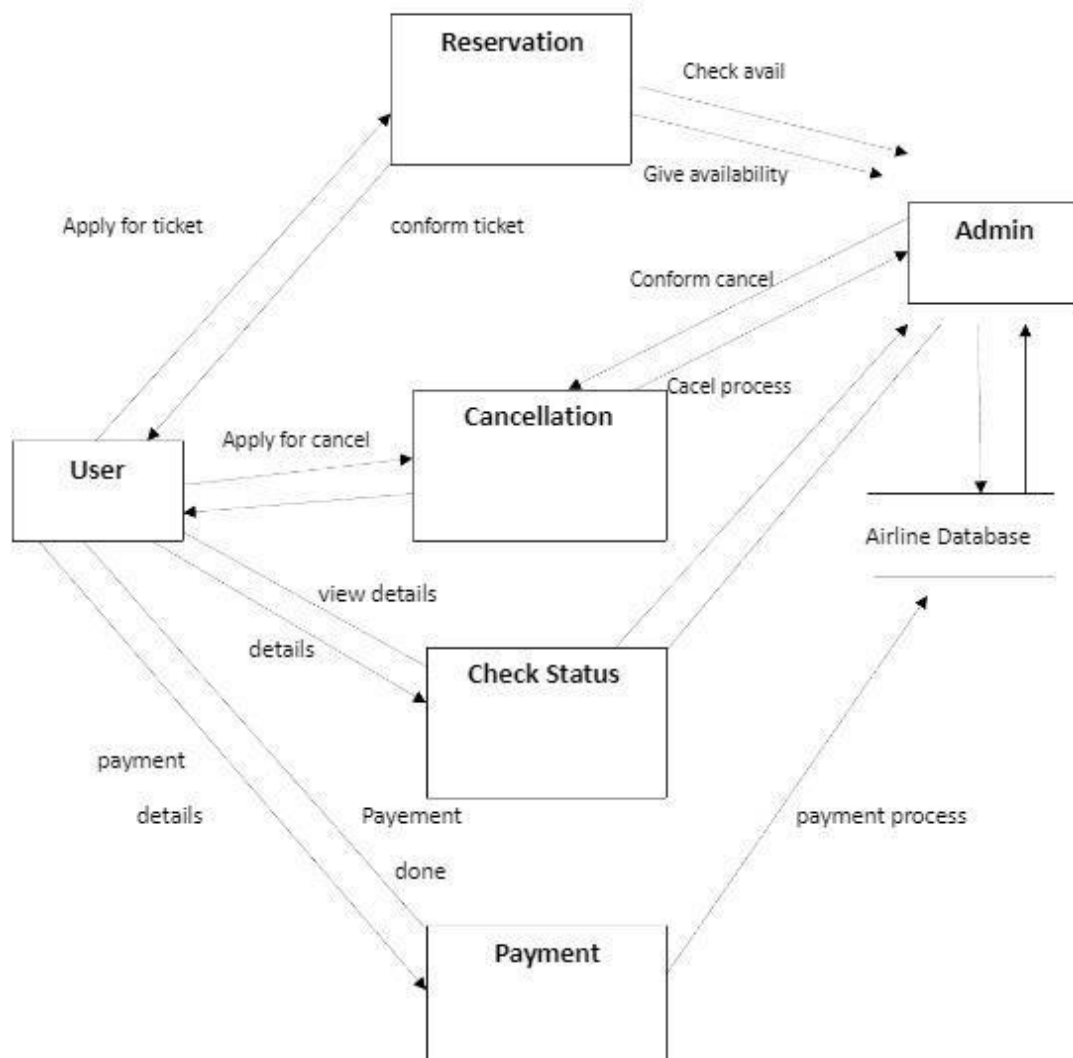


## ○ Level 1 DFD:



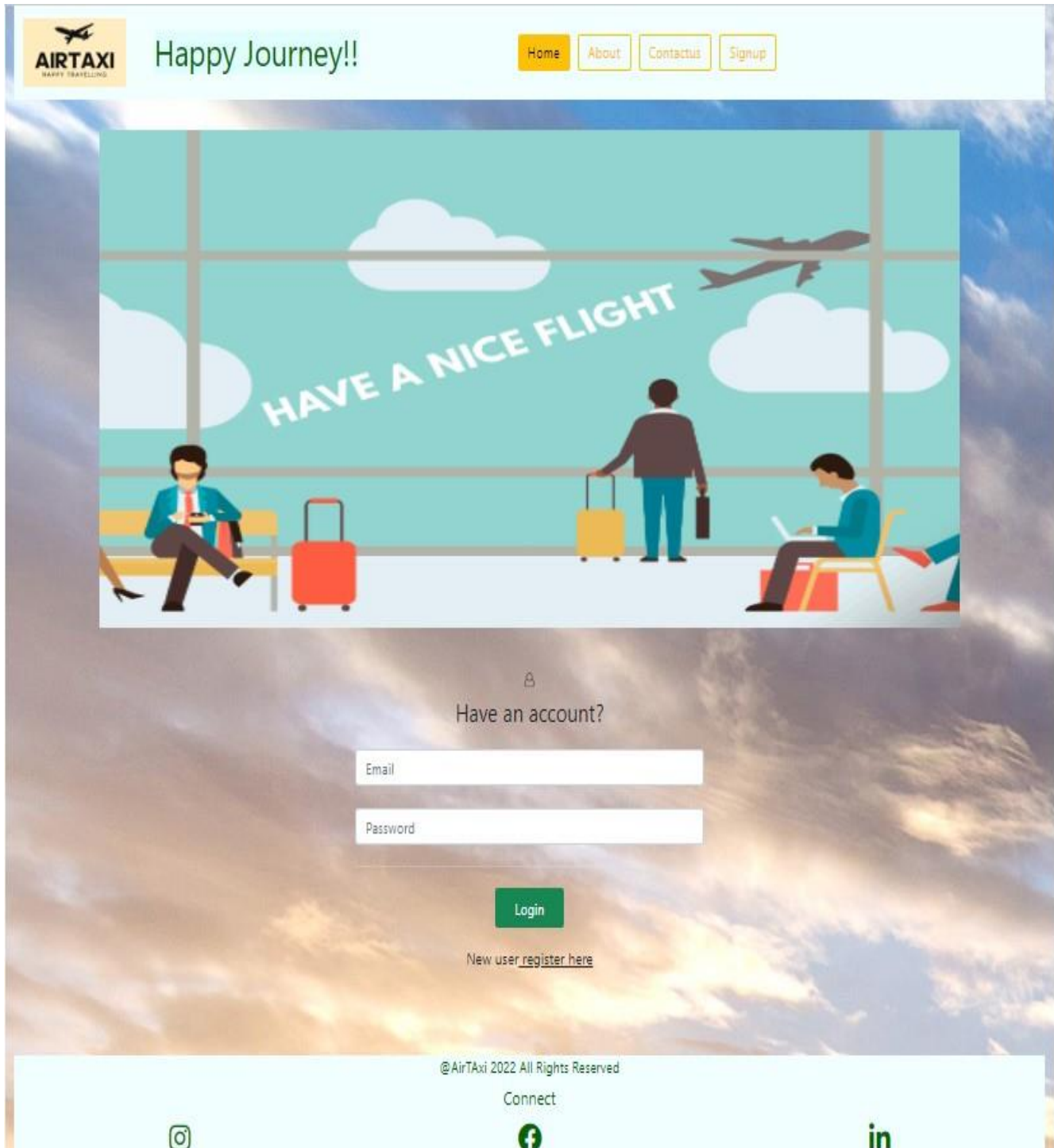
## Level 2 DFD:

Level 2:

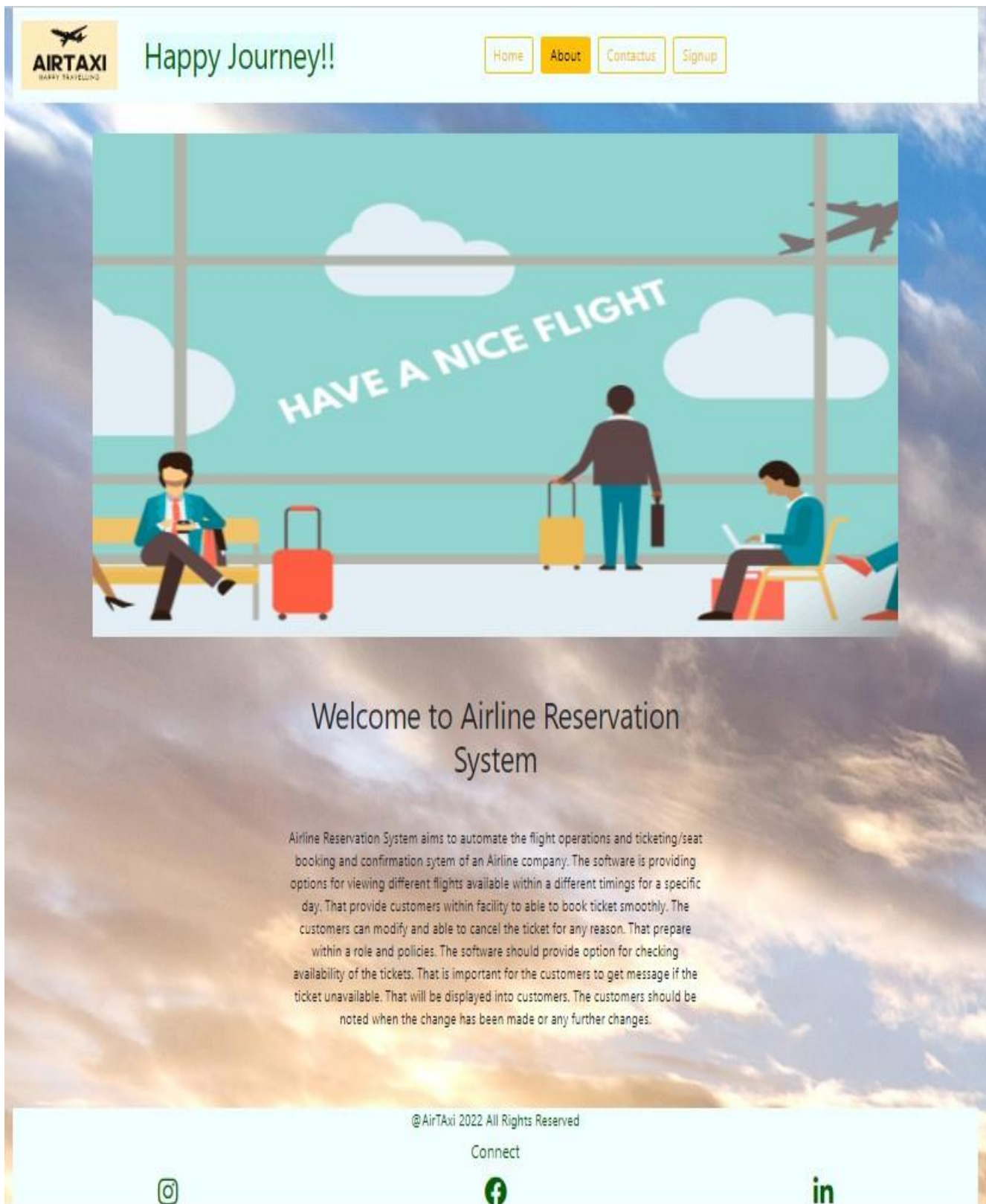


## ➤ Interfaces:

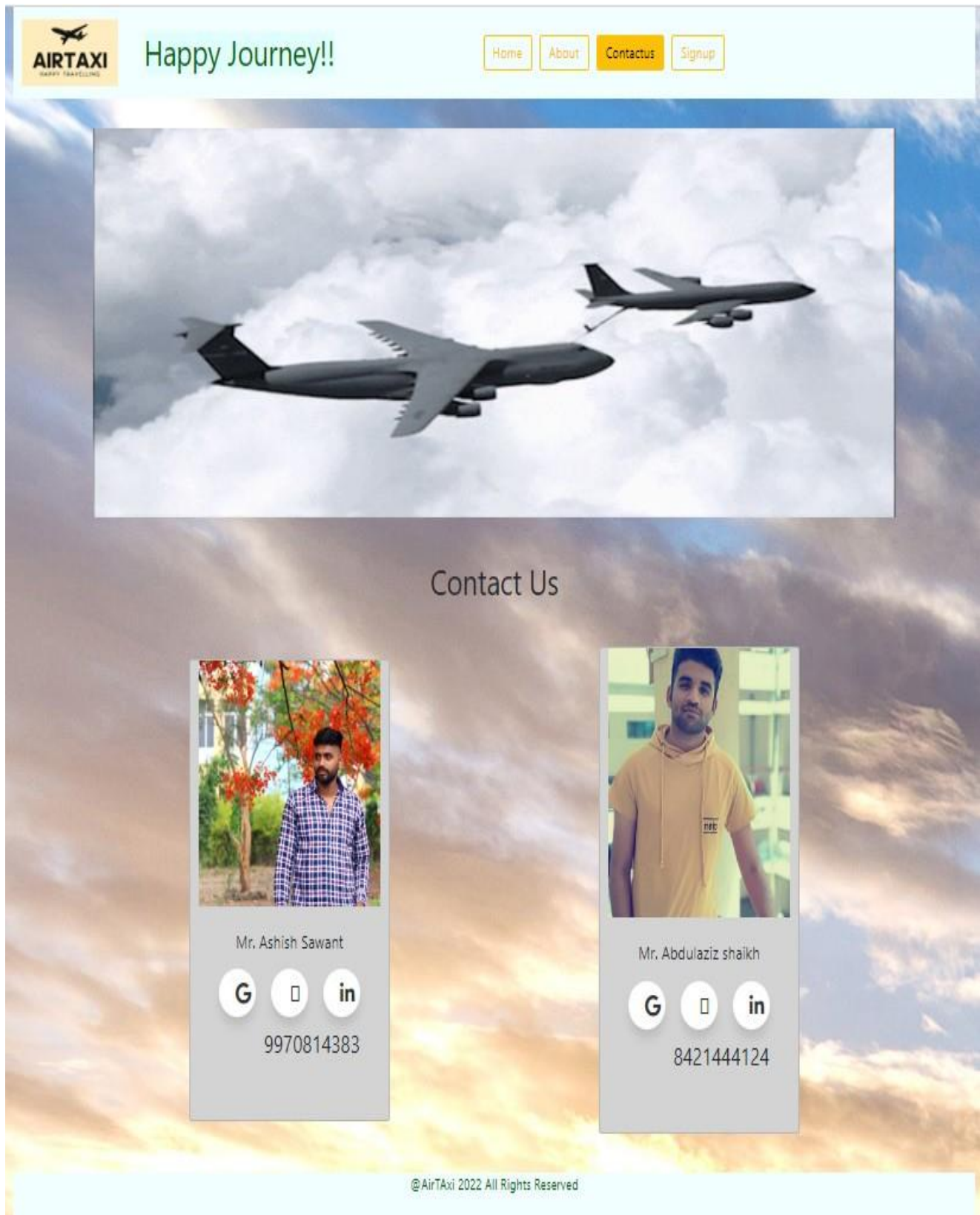
### Home Page:



## Aboutus Page:




## Contactus Page:






## Signup Page:

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### SignUp

First Name

Last Name

Email




Password

Mobile Number

Signup

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## Admin Page:



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Admin Actions ▾

[Update Flight Schedule](#)[Cancel Flight](#)[Passenger List](#)[Add Airline](#)

[Logout](#)



### Scheduled Flights


Airline Name	Airline Number	From	To	Departure Date	Arrival Date	Departure Time	Arrival Time
JetBlue Airways	kv1	Pune	Mumbai	2022-09-28	2022-09-28	09:00:00	10:00:00
indigo	kv2	Brngluru	Rajstan	2022-09-28	2022-09-28	03:00:00	07:00:00
AirAsia	kv3	Delhi	Kolkata	2022-09-28	2022-09-28	03:00:00	07:00:00
GoAir	kv4	Bhopal	Chandigarh	2022-09-29	2022-09-29	12:00:00	03:00:00

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## Add Flights Page:

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Update Flight Schedule  
Cancel Flight  
Passenger List  
Add Airline



### Add Airline

Airline Name:

Airline Number:

Departure Date:

Arrival Date:

From City:

To City:

Departure Time(24 hrs format):

Arrival Time(24 hrs format):

Capacity:




Economy Fare:

Business Fare:

Add Airline

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## CancelFlight Page:

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Admin Actions -

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[Logout](#)



### Flights List

Airline Name	Airline Number	From	To	Departure Date	Arrival Date	Departure Time	Arrival Time	Action
JetBlue Airways	kv1	Pune	Mumbai	2022-09-28	2022-09-28	09:00:00	10:00:00	<a href="#">Cancel</a>
indigo	kv2	Brngluru	Rajstan	2022-09-28	2022-09-28	03:00:00	07:00:00	<a href="#">Cancel</a>
AirAsia	kv3	Delhi	Kolkata	2022-09-28	2022-09-28	03:00:00	07:00:00	<a href="#">Cancel</a>
GoAir	kv4	Bhopal	Chandigarh	2022-09-29	2022-09-29	12:00:00	03:00:00	<a href="#">Cancel</a>

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## Update Flight Page:

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### Scheduled Flights


Airline Name	Airline Number	From	To	Departure Date	Arrival Date	Departure Time	Arrival Time	Action
JetBlue Airways	kv1	Pune	Mumbai	2022-09-28	2022-09-28	09:00:00	10:00:00	<a href="#">Update Flight Schedule</a>
indigo	kv2	Brngluru	Rajstan	2022-09-28	2022-09-28	03:00:00	07:00:00	<a href="#">Update Flight Schedule</a>
AirAsia	kv3	Delhi	Kolkata	2022-09-28	2022-09-28	03:00:00	07:00:00	<a href="#">Update Flight Schedule</a>
GoAir	kv4	Bhopal	Chandigarh	2022-09-29	2022-09-29	12:00:00	03:00:00	<a href="#">Update Flight Schedule</a>

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## Customer Homepage:

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### Search Flight

From

Pune

Destination

Mumbai

Departure Date

20-09-2022

Passengers

1

Type of Seat

Economy




Economy

Business


Search

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## Customer Profile Edit Page:

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[Logout](#)





Edit Profile

First Name

Last Name

Prasad

Sawant

Email

prasad123@gmail.com




Password

prasad@123

Mobile Number

9616711257

Save Profile




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## BookingFlight Page:

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### Search Flight

From

Pune

Destination

Mumbai

Departure Date

28-09-2022

Passengers

1

Type of Seat




Economy

Search

Airline Name	Airline Number	From	To	Departure Date	Arrival Date	Departure Time	Arrival Time	Economy Fare	Business Fare	Book Flight
JetBlue Airways	kv1	Pune	Mumbai	2022-09-28	2022-09-28	09:00:00	10:00:00	1500	3500	<a href="#">Book Flight</a>

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## Customer and Card Details Page:

The screenshot displays a web interface for entering customer and card details. The background is a sunset over an airport tarmac. The interface consists of three main sections: Passenger 1 Details, Ticket Summary, and Enter Card Details.

**Passenger 1 Details**

Passenger Name: Prasad

Age: 25

Gender: MALE

Save

**Ticket Summary**

Airline Name: JetBlue Airways

Route: Pune - Mumbai

Travellers: 1

Base Fare: 1500

Taxes: 270

Total Fare: 1770

**Enter Card Details**

Name on Card: Prasad

Card Number: 7744112255889966

Expiry Date: 09-10-2022

CVV: 945

Confirm Booking


Make Payment and Confirm Booking

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## Cancel Booking Page:




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Cancel Booking

Booking History






### Bookings


Booking Id	Airline Id	User Id	Booking Date	Departure Date	Arrival Date	Total Fare	Action
1	9	5	2022-09-27	2022-09-28	2022-09-28	1770	<a href="#">Cancel Booking</a>
2	9	5	2022-09-28	2022-09-28	2022-09-28	1770	<a href="#">Cancel Booking</a>

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## Booking History Page:



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[Cancel Booking](#)[Booking History](#)






### Bookings

Booking Id	Airline Id	User Id	Booking Date	Departure Date	Arrival Date	Total Fare	Status
1	9	5	2022-09-27	2022-09-28	2022-09-28	1770	Cancelled
2	9	5	2022-09-28	2022-09-28	2022-09-28	1770	Active

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## The test of report is given here under:

Sr. no	Test Case Title	Description	Expected Outcome	Error Message	Result
1	Login Page-Admin	If User email=Admin email, Password= Admin Password	If Validated allow for Admin Home Page If not redirect to same page	Username and password required	Passed
2	Login Page – User	If User email=User email, Password= User Password	If Validated allow for User Home Page If not redirect to same page	Username and password required	Passed
3	Show Details of user	Admin can see status of given user.	User Details	No Error	Passed
4	New user registration	Should not allow any control to be empty if not null and OTP sent & verified the user.	If validated Allow to go to login page	Validation Error	Passed
6	Log out	User / Admin can logout by using Logout link	Successfully logout message	No Error	Passed

- **Future Scope**

1. Live tracking of customer's booking
2. Forgot Password
3. Revenue calculation from tickets sales

## **References**

- <https://reactjs.org/>
- <https://reactstrap.github.io/>
- <https://spring.io/projects/spring-boot>
- <https://docs.oracle.com/en/java/>