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# **Software Requirements Specification**

**for**

# **Airline Reservation System**

**Version 1.0 approved**

**Prepared by**

**Lavin Rupani (2003147)  
Soham Sanghvi (2003150)  
Mihir Shah (2003157)**

**Thadomal Shahani Engineering College**

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# **1. Introduction**

The name of the project is Airline reservation system and this software aims at providing information to all levels of management in the system. The project is Airline Reservation System (ARS). The software intends to provide aid to the overall booking system. Reduce the manual work that goes into ticket reservations. Also make the software more user-friendly so that it's easily accessible to people.

## **1.1 Purpose**

The purpose of this document is to build an online system to manage flights and passengers to ease the flight management. Create a database, which will further help in improving customer experience. Reduce the manual work, i.e make everything digitized. Increasing efficiency of the traditional booking system. Track all essential information about customers and quick updates on the flights. Customers can modify, update or cancel tickets at ease. Tickets availability status is well equipped, with changing its status instantly on booking alterations.

## **1.2 Document Conventions**

- Python - Programming Language
- MySQL - Distributed Database
- IEEE - Entity Relationship
- OS - Operating System

## **1.3 Intended Audience and Reading Suggestions**

This project is a college supervised project. But it can be used by developers for developing real time airline management systems for companies. Also marketing staff can utilize it and even introduce new marketing strategies that can be applied to the system. The product scope, function and perspective is very essential to be read for a thorough understanding of the software.

## **1.4 Product Scope**

The purpose of the online airline reservation system is to ease flight management. The software is intended to be user friendly, so that it is convenient for everyone to reserve tickets. The system is based on a relational database with its flight management and reservation functions. We will have a database server supporting hundreds of major cities around the world as well as thousands of flights by various airline companies. The software will display the precise status of seats to be reserved on the flight. Above all, we hope to provide a comfortable user experience along with the best pricing available.

## **1.5 References**

[https://en.wikipedia.org/wiki/Airline\\_reservations\\_system](https://en.wikipedia.org/wiki/Airline_reservations_system)  
<https://www.kapturecrm.com/airlines-management/>  
<https://www.capterra.com/airline-reservation-system-software/>

## 2. Overall Description

### 2.1 Product Perspective

The product perspective of the airline reservation system is firstly managing the flight details. Flight arrivals, departures, delays. In case of delay the people boarding must be informed. The terminal/gate flight is going to be boarding. The availability or vacancy on each flight. The maintenance of customer databases. All essential details like number, email etc. So in case of ticket reservation or cancellation they are well informed electronically too. The information can also be used to provide a more personalized experience to each customer. Reservations and cancellations must be included and updated in the seat availability of a flight. All such transactions must have a case number and also flight details like flight number, arrival and departure time.

### 2.2 Product Functions

This project is mainly intended for two types of audiences, One is the user and the other is the administrator of the website. The website also provides instructions to the user on how to book airline tickets or motels along with the different packages. Some of the functions of the Airline Reservation System, such as creating, maintaining and updating the database are available only to the administrator.

#### Administrator Activities:

- **Login/Logout:** The administrator has to login first in order to be able to make changes to the Airline Reservation System, by adding, deleting or modifying the data in the Airline Reservation System database. After making the necessary changes, he then has to logout of the system, in order to prevent misuse of the data.
- **Add/Delete/Modify Customer Information:** The Admin has the authority to modify customer details or to delete or to add the account as the user registers or unregisters on the website.
- **Add/Delete/Modify Flight Information:** The Administrator also has the sole rights to add, delete or modify the flight information. Sometimes, flights get cancelled for some reason, so such flights would be removed from the list of flights available to the customer. Similarly, whenever any flight information has to be modified or if any new flights need to be added to the database, these operations are performed by the administrator.
- **Cancellation of Reservations:** Sometimes, after making a reservation, a customer might cancel the reservation he has made. So, the administrator also handles such special situations and sends the customer an e-mail confirmation after deleting the specific transaction.

### 2.3 User Classes and Characteristics

The User of the system has to enter specific details in order to book their flight. The user can select the city where they want to travel with the given date/time of travel from the database. A route from city A to city B is a sequence of connecting flights from A to B such that:

- a) there are at most two connecting stops, excluding the starting city and destination city of the trip,
- b) the connecting time is between one to two hours. This system will have two perspective, User and Admin.

#### The User can:

- Make a new Flight reservation.
- One-way/Round-Trip.

- Enter their persona details.
- Flexible Date/time.
- Cancel an existing reservation.

**The Admin can:**

- It can allot the user a particular flight.
- Get all flights for a given airport.
- Schedule a Flight or view other flights.
- Calculate total sales for a given flight.
- Add/Delete a flight.
- Update the flight details and the flight cost.

## 2.4 Operating Environment

Operating environment for the airline reservation system is as listed below.

- Distributed database.
- Operating system: Windows.
- Database: sql + database.
- Platform: vb.net/Java/PHP

## 2.5 Design and Implementation Constraints

- Prospective clients in Asia and other parts of the world where the connection speed and availability is poor may find it hard to access the website of flight companies and book tickets.
- In much of the less developed part of the world many people still use the traditional method of purchasing tickets from the offices of travel agents in stead of booking ticket online.
- Machine failures such as lost connection or unresponsive program can sometimes also cause the disappearance of all the flight itinerary.
- The customer might not be able to get correct or enough information from the website alone as it is not done face to face with a person who knows everything about the connections, offers and company policies.
- There is also the issue of security: it is sometimes possible that somebody can steal your credit card information but developers are improving the security of the system more and more with the advancement of technology

## **3. External Interface Requirements**

### **3.1 User Interfaces**

- Front-end software: Vb.net version
- Back-end software: SQL

### **3.2 Software Interfaces**

1. Python - Programming Language.
2. MySQL- Distributed Database.
3. IEEE - Entity Relationship.
4. OS - Operating System.

### **3.3 Communications Interfaces**

This project supports all types of web browsers. We are using simple electronic forms for the reservation forms, ticket booking etc.

## **4. System Features**

### **4.1 User Accounts**

The passenger, who will henceforth be called the ‘user’, will be presented with 3 choices by the reservation system, as the first step in the interaction between them. A user can choose one of these and his choice would be governed by whether he is a guest or a registered user and whether he wants to check the availability of tickets or also block/buy them. The terms ‘registered user’ and ‘guest’ are described below.

### **4.2 Registration and Creation of User Profile**

The system shall require a user to register, in order to carry out any transactions with it except for checking the availability of tickets. It will ask the user for the following information at the least – a user id, a password, first name, last name, address, phone number, email address, sex, age, preferred credit card number. The system will automatically create a ‘sky miles’ field and initialize it to zero in the user’s profile.

### **4.3 Checking Availability**

After logging in a user (either a registered user or a guest), the system shall request him to enter the following details – origin city and destination city. “City” is a generic term and refers to a city or town as the case may be. The origin and destination cities would be entered as text.

#### **4.4 Making Reservations/ Blocking/ Confirmation**

After having taken the user Checking Availability, the system will now ask the user if he wishes to block/buy the ticket. If yes, and if the user has been a guest, he will have to first register and become a registered user and then log onto the system. If the user is already a registered user, and if he has logged on already, he can block/buy the ticket, but if he has been acting as a guest, he will have to log on.

#### **4.5 Confirm Ticket**

A user who has earlier blocked a ticket, is required to either confirm the ticket before two weeks of the departure date or the ticket stands cancelled. The system accesses DB-user and charges the price of the ticket to the credit card number of the user. It simultaneously generates a confirmation number and displays it for the user to note down. The ticket has been reserved.

#### **4.6 Reschedule Ticket**

The system shall present the user with an option to re-schedule his travel party's trip. In order to do this, the system first logs on the user and requests his confirmation number. It will not allow a user to reschedule a blocked ticket but only a confirmed ticket. Using this, it queries DB-reservation and presents the details of the trip to the user, including but not limited to origin city, destination city, date of departure and date of arrival (in case the trip is around trip).

#### **4.7 Cancellation**

The system shall also give the user an option to cancel a confirmed ticket or blocked ticketing into account the number of travelers in his party) from the sky miles in his profile.

#### **4.8 Update Profile**

The system shall enable the user to update his profile at any time. Changes can be made infields including but not limited to address, phone number and preferred credit card number.

#### **4.9 View Ticket Status**

The system shall allow a user to view all the information about his trip. After logging him on, it asks for his blocking number or his confirmation number. It accesses DB-reservation and retrieves the details of the trip and presents them to the user in a convenient format, including any last-minute changes to the flight timings etc. Such changes will be highlighted.

#### **4.10 Query Flight Details**

The system shall allow any user (registered or non registered) to access the details about the arrival and departure times of a flight by requesting the user to input the flight number and date. The system accesses the DB-schedule and presents the time of arrival and departure.