

TCSS 445 - DATABASES SYSTEMS DESIGN

PROJECT PROPOSAL

AIRLINE RESERVATION SYSTEM

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Team10

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INTRODUCTION

The purpose of the project, Airline Reservation System, is to search a flight, book a flight, pay for the reservation and check the reservation status of a passenger. Another purpose of this project is to maximize airline's profit based on the remaining days from the departure date and the remaining empty seats on the flight.

The problem is that an airline has many flights and the airline wants to track each flight with departure and arrival information, price, capacity, and the number of empty seats. The airline also wants to view all the reservations so that the airline can figure out how many passengers are going to be on board, how much the airline makes a profit for each flight, which passengers request a special meal and so on. For a prospective passenger, he or she wants to see only the flights that satisfy his or her trip schedule. The passenger also wants to assign a seat. The Department of Homeland Security of a country wants to track a passenger who is not a citizen of the country and does not have a returning ticket.

The Airline Reservation System is a web based software that tracks flight between different airport, actual selling price, capacity of a flight, and the number of days before the flight leaves when a reservation is booked. The system will track a passenger's reservation status, contact information, and each passenger's service requests, such as meal option, unaccompanied minor, bassinet wheel chair, or assist passengers who have disabilities.

The actual selling price that is shown to a passenger is always the base price if the flight is more than two weeks away from the departure date. If there is less than two weeks from the departure date and the capacity of the flight is over 75 percent, then the price would be twice of the base price so that the airline makes more profit. If there is less than two weeks from the departure date and the capacity of the flight is less than 50 percent, then the price is half of the base price so that the airline could fill the flight and makes more profit. Otherwise, the selling price is the base price of each flight.

USERS OF AIRLINE RESERVATION SYSTEM

Based on an interview with a staff of reservation center at Korean Air and personal experience as a passenger service agent, three different major levels of users are able to use the Airline Reservation System. Each user has different purposes to access to the system.

1. Passengers / Travel Agent

A travel agent or prospective passenger who are interested in traveling by air will use the Airline Reservation System to find any flight that matches to the user's searching conditions, departure city, departure date, destination, and one way or round trip. This user is also able to book a flight, pay for the flight, and update his or her reservation.

2. Administrative Staff of the Airline

An administrative staff of the airline will use this system to add or update a flight information including flight number, capacity, departure time and city, arrival time and city, and base price. This user also keeps track of the number of empty seats on each flight so that they can adjust the selling price of each flight.

3. Passenger Service Agent at Check-in Counter

A passenger service agent of the airline wants to access this system to check-in passengers of the flight. The agent will check a passenger's flight number and assigned seat. The agent also tracks the passengers' special service requests and deliver the General Documents which includes flight and all passengers' information to flight attendances and the Department of Homeland Security.

USERS AND SYSTEM REQUIREMENTS

Based on researching the Delta Airline's website and experience as a passenger service agent, the Airline Reservation System requires the following:

- **Users** – Will be able to log in, find a flight, book a flight, request special service, assign a seat, pay for the flight, and check the booking status.
- **Searching a Flight** – A user should be able to search a flight by departure city and date, arrival city, and returning date only if a user looking for tickets for round trip.
- **Booking a Flight**– A user should be able to book a flight by departure city and date, arrival city, and returning date if a user wants a round trip. The user will be required to put full name, date of birth, contact information into the system. The user will be able to assign a seat and request special services. For international flights, a user is required to provide passport number and the issued country.
- **Paying for a Flight** – A user will be able to pay with credit or debit card after completing to book a flight.
- **Viewing a Reservation** – An airline will track each passenger's booking status including contact information, price paid, special service requests, and seat assignment of each flight. A passenger should be able to view his or her reservation.
- **Updating Selling Price** – An airline will track the number of empty seats on a flight and the number of days from the departure date so that the airline will update the selling price.
- **Adding or Updating a Flight** – An airline should be able to add or update a flight with following information: the type of flight, domestic or international, flight number, the number of seats, departure city and country, departure time, arrival city and country, arrival time, and base price.

All users are required to log into the Airline Reservation System except an anonymous user. An anonymous user is able to search a flight, but it is restricted to any other feature. A passenger who want to book a flight or has booked a flight has to log into the system so that the passenger can see the confirmed reservation. A staff at the check-in counter has to log into the system to view a passenger's reservation status or to find any other flight to help customers. An administrative staff of the airline must log into the system as an admin so that this user can add or update flight and update selling price.

Below contains a table outlining the capabilities of all users.

	Anonymous	Passenger	Check-in Counter	Administrative Staff
Searching a Flight	X	X	X	X
Booking a Flight		X		
Paying for a Flight		X		
Viewing a Reservation		X	X	X
Updating Selling Price				X
Adding/Updating a Flight				X