

FINAL PROJECT 2 – Spring 2017

Project Requirement – Design, Development & Implementation Airline Reservation System

Overview & Business Objectives

- ❑ Create an **Airline Reservation System Three-Tiered Web Application** named EZTravel.com.
 - ✦ This **Airline Reservation System** is designed to allow customers or travel agencies to conveniently book flights via an online system similar to other online reservations systems like Orbitz, Expedia, etc.
 - ✦ The application is to be designed to support dozens of major cities around the world as well as hundreds of flights by various airline companies. In addition, the great user experience in booking flights along with the best pricing available.
- ❑ This application will be divided into several projects (PROJECT 1, PROJECT 2(Final Project in CST3504) etc.) based on Agile Development principles in which we breakup the implementation of features and functionalities by pieces.
 - ✦ In this PROJECT 1, you will create the [ER/EER model](#), in addition to the [Logical Normalized Model](#). ✦ Future PROJECT(S) will include Physical Model Diagram and Implementation.

Business Requirements

- ❑ A Business Analyst was hired by Mr. Rodriguez to compile the list of requirements based on the results of interviews and conversations with the various business stakeholders.
- ❑ Below are the requirements captured by the Business Analyst:
 - ✦ This EZTravel.com **Airline Reservation System** is designed to allow customers (passengers) or travel agencies (on behalf of the customer/passenger) to conveniently book flights.
 - ✦ The application is to support dozens of airports in major cities around the world as well as hundreds of flights by various airline companies.
 - ✦ This website needs to capture information on the following passenger types of passengers:
 - A regular passenger is identified by a passenger identification number, passenger name composed of first, middle & last name. Also, Address which include the following components: address, city, state and zip code. Also, gender, contact phone & email address. We also need to store the credit card information which is composed of the credit card number, credit card company name, and credit card expiration date. Promotional Discount code from other businesses or organizations.
 - Frequent-flyer passenger who is identified by a passenger identification number, passenger name composed of first, middle & last name. Also, Address which include the following components: address, city, state and zip code. Also, gender, contact phone & email address. We also need to store the credit card information which is composed of the credit card number, credit card company name, and finally credit card expiration date. In addition to Frequent-flyer number, total mileage balance, mileage expiration date. Note that frequent-flyer members get special prices and cannot leverage any promotional discounts from other businesses or organizations.
 - Travel agency passenger who is identified by a passenger identification number, passenger name composed of first, middle & last name. Also, Address which include the following components: address, city, state and zip code. Also,

gender, contact phone & email address. We also need to store the credit card information which is composed of the credit card number, credit card company name, and finally credit card expiration date. In addition, the travel agency ID which booked the flight, travel agency name, agency address, agency phone, agency rep who booked the ticket & travel agency discount code & discount amount.

- US military passenger who is identified by a passenger identification number, passenger name composed of first, middle & last name. Also, Address which include the following components: address, city, state and zip code. Also, gender, contact phone & email address. We also need to store the credit card information which is composed of the credit card number, credit card company name, and finally credit card expiration date. In addition, US Military ID & Branch of the military (Navy, Airforce, Army Marines, etc.), and Military discount code. Note that military personnel and their family members get special prices & military discounts and cannot leverage any promotional discounts from other businesses or organizations
- ✦ Most people have more than one credit card. Therefore, a passenger can use any of the many types of major credit card he or she has. In addition, the credit card can be owned by the passenger, spouse or someone else who co-owns the credit card. Or the card can be owned by the passenger and a corporate entity/company.
- ✦ Each of these passenger profiles can make a booking or reservation for a flight via the online system.
- ✦ A passenger books or reserves a flight. For each reservation or booking made by a passenger, we wish to capture a reservation ID, booking Date of reservation, seat number for flight, total cost of flight, travel class (economy, business or first class) & travel class ID. In addition, booking status (confirmed, cancelled, stand-by, etc.) & booking status ID.
- ✦ A passenger can book many flights, and a flight can be booked by many passengers. But each reservation or booking is for one customer and one flight only
- ✦ The flight reserved by a customer is identified by flight number, destination city, flight date, departure time, arrival time, flight time
- ✦ A flight is delivered by an Airline. An airline can have many flights but one flight can only be delivered by one airline. A flight will be delivered by an airplane from the airline. A flight is targeted for a destination airport. Or a flight may be arriving from an airport of origin, before it departs to the destination.
- ✦ An airplane land in many airports and an airport can receive many planes. Nevertheless, there are restriction were some airlines cannot land in certain airports.
- ✦ Airport is identified by Airport code, Name, state, city
- ✦ Airplane is identified by Airplane ID & Aircraft Type, Number of seats, Airport in which this type of aircraft can land. ✦ Airline is identified by Airline code, name, headquarters address.
- Additional requirements and assumptions:
 - ✦ In this scenario, we are assuming each flight has only a route with one leg only. In other words, we are dealing with non-stop only flights. Future version of this project will add features for multiple stops or legs.
 - ✦ Make any necessary assumptions. If you have any questions, ask the sponsor Prof. Rodriguez.