AIRLINE RESERVATION SYSTEM Application Development

ELF / HTD Training Programs

Full Stack – Use Cases

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1. INTRODUCTION

This document outlines a Project. The project is to develop online AIRLINE RESERVATION SYSTEM (ARS). This document contains the work flow of the system and gives guidelines on how to build the functionality gradually in each of the course modules.

1.1 Setup Checklist for Project

Minimum System Requirements

- Intel Pentium 90 or higher (P166 recommended)
- Microsoft Windows 95, 98, or NT 4.0, 2k, XP, Windows 7
- Memory: 32MB of RAM (64MB or more recommended)
- Internet Explorer 6.0 or higher

1.2 Instructions

➢ The code modules in the mini project should follow all the coding standards.
➢ You can refer to your course material
➢ The total time required to complete this project is 50 hrs.
➢ Since this project work will span over couple of months, you will need to take care of maintaining the code

2. PROBLEM STATEMENT

The current system is manual, this system is slow, time consuming and it is very difficult for each person to book through office agents. Users inquire about the tickets through phones and it is very difficult for the user to remember all the details that they received through phones. It is very difficult to calculate how many peoples registered and how many seats on a particular plane are vacant. This requires quite a lot of time and wastage of money as it requires quite lot of manpower to do.

2.1 Objective

2.1.1 General Objective

To automate the process of airline ticket reservation, booking and airline management hence minimize errors resulting from manual system operations

2.1.2 Specific Objective

- To study the current system identifying its inefficiencies
- To determine the requirements for the new system
- To design an online airline reservation information system to facilitate online booking and flight scheduling
- To implement the developed web based airline information system
- To test and validate the developed system by use of case study

2.1.3 Scope of the Study

The developed system will facilitate online booking; keep customer records, provides an online menu on flight schedules, flight destinations and their prices, show alternative links to other partner airlines and will have page dedicated to customer queries and replies. The system excludes catering for calculating staff salary and other management issues.

2.2 Abstract of the Project

This project is aimed at developing an Airline Reservation System (ARS) for customers. This system can be used to search flight details, reserve flight, and update/cancel any reservation. This is an integrated system that contains both the user component and the administration component. There are features like report generators etc in this system.

3. IMPLEMENTATION

3.1 System Design Objectives

The Airline Reservation System (ARS) is a software application to assist an airline with transactions related to making ticket reservations, which includes blocking, reserving, canceling and rescheduling tickets.

From the viewpoint of the airlines the system provides the following

➢ The system should minimize repetitive work done by the system administrator and reservation clerks.

➢ The system should maintain customer information in case of emergency, e.g. flight cancellation due to inclement weather.

➢ The system should minimize the number of vacant seats on a flight and maximize flight capacity utilization.

➢ The system should reduce effort and frustration for travellers in scheduling a trip, especially by reducing the search effort for the flight they need to take.

➢ The system should make it easy for travellers to check the ticket status or make changes to their trip.

3.2 Functional Requirements

The following requirements were captured for the intended use of the system.

User account

The registered user can directly do the booking of flights and if there is a new user he may register or he only sees the flight details. But for the reservation of ticket he must register first.

Creation of new user account

When there is a new customer he should fill the form containing field like Name, Address, and Contact No., Gender, Email and also User ID and Password.

Checking Availability

To check the available flight, the user should input the origin city and destination city, date of journey.

Reservation of Flight

After providing all information the system will ask user for confirmation. After confirming the information, the seats get reserved.

Cancelling/Rescheduling of Ticket

To cancel the reservation, the customer should provide the details about Ticket no and flight no

4. System implementation

The ARS provides the following types of easy-to-use, interactive, and intuitive graphical and telephonic interfaces.

- The ARS provides an easy-to-use, intuitive Graphical User Interface (GUI) as part of the Administrator's working desktop environment.
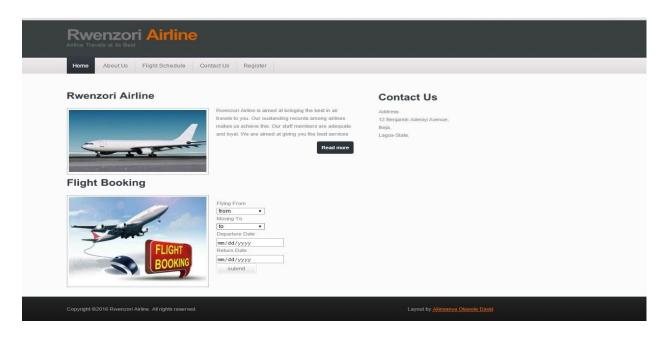- The ARS also provide an interactive Graphical User Interface, on the World Wide Web for the general customers.

The system working scenario is as follows:

- The customer should register himself in order to proceed to book ticket service.
- The customer needs to input all the required particular details during the registration process.
- Upon successful login, the customer will be registered officially to the web service and he can login using his username and password. The guest is only permitted to check flight availability.

4.1 User's environment

a) Welcome Page

This appears when the URL of Rwenzori Airlines is typed in any browser. While on this page customers can choose to register and continue to book tickets and flights or view flight schedules, journey details and access the contact us page. However, for a user to book a ticket or a flight, he/she must be registered first.

b) Registration Form

This form is used by customers (Passengers) to register before booking a flight or ticket. The user must first register. To access this page, the customer clicks on the register link on the home page. The customer Id and Customer password fields are mandatory, which means the customer must fill them before adding the record

c. Customer Search Form

This interface is accessed by clicking on your info link on the home page. On this interface the customer is required to enter his or her id and password to find his/her record. This record gives detailed information of what was entered during registration; it also provides any booking and flight information if any.
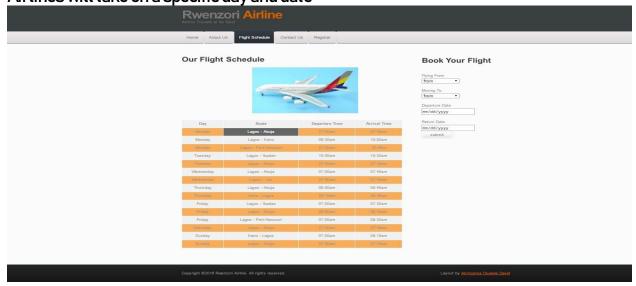
d. Customer Search result

This interface is as a result of a successful search for a customer record. This interface contains all the information that was entered during registration and any other flight, ticket, schedule and journey information in case the customer had already booked a flight. This interface is accessed by entering the correct customer id and password and clicking on find record

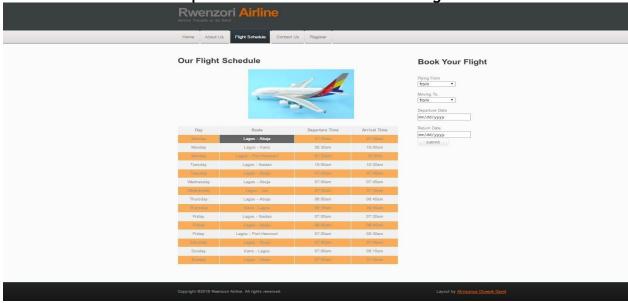|	
Table:	CUSTOMER
Id * :	41
Custid:	RWZALN 987811
Surname:	Akinsanya
Oname:	O1us
Email:	akins.davids@yahoo.com
Nationality:	Nigeria
Residence:	Nigeria
Phoneno:	0909876543
Dob:	12-09-1980

Table Information

e. Journey Details

This interface is accessible by both registered and non-registered users to view the journey details. It's accessed by clicking on the Journeys link on the top menu of the system. While on this page both registered and non- registered users can view Journey details and for purposes of booking the users are required to note the Journey Id as it will be required in case the user wants to book a ticket and a flight. This interface shows the Journeys that Rwenzori Airlines will take on a specific day and date
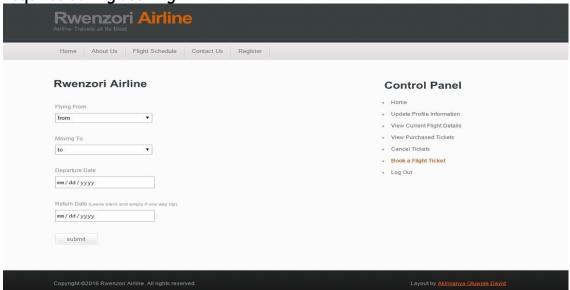
f. Schedule Details

This interface is accessible by both registered and non-registered users to view the schedules for Rwenzori airlines on a specific date. It's accessed by clicking on the schedules link on the top menu on the system. While on this page's users are required to take note of the schedule Id as it will be required in case a user is to book a flight or ticket.
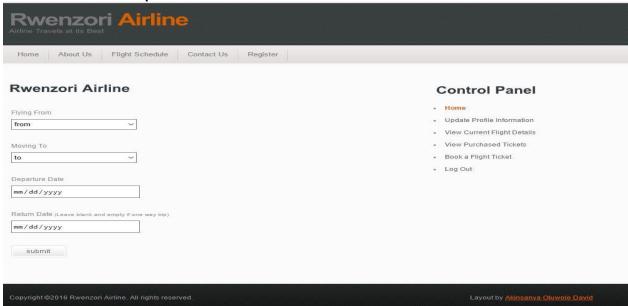

g. Flight/Ticket Form

This interface is accessed by clicking on flights link on the top menu on the system. This Interface is accessed by users who want to book ticket, flights and those who have already booked flights. For purposes of booking the user must be registered and should have in mind the Journey Id for the Journey he/she wants to take as well as the schedule Id as this is required during booking.
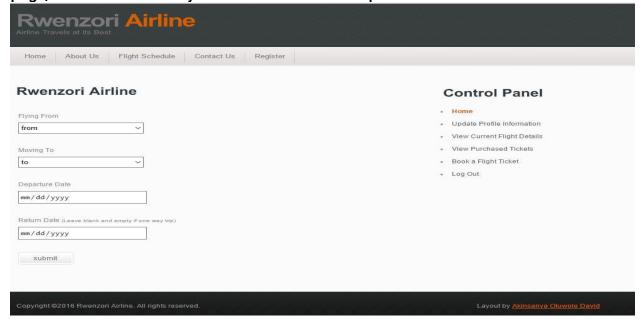
h. Flight Booking Form

This accessed by clicking on Flight reservations on flights page/interface. This form is used by the registered customers to book flight, a registered. All fields on this form are mandatory hence the user is expected to fill all the fields
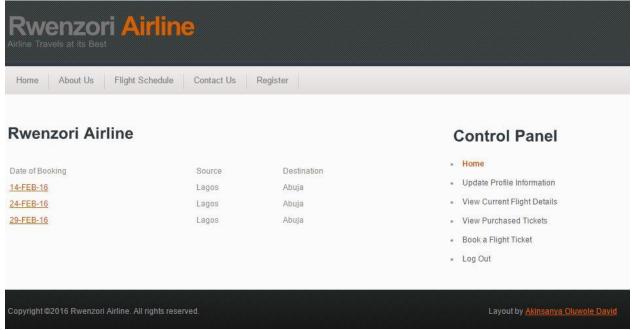

i. Ticket Booking Form

This interface is accessed by clicking on the ticket Reservations link button on the Flights page. This form is used by registered customers to book and reserve tickets. All fields on this page/form are mandatory and hence the user is expected to fill all of them
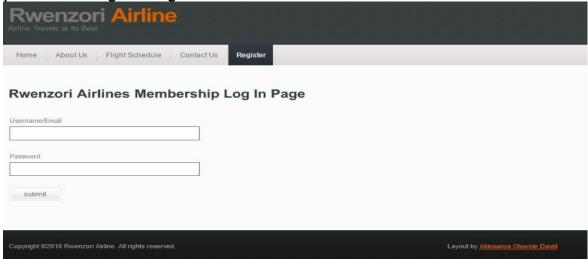
j. Ticket Details

This interface appears after a successful ticket booking process. The user is requiring to note the ticket Id as it will be required during Flight booking
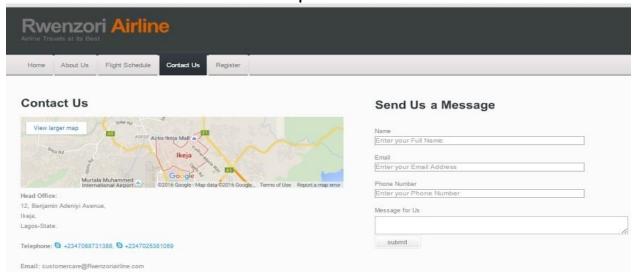

k. Ticket Cancelation Form

This form is accessed by clicking on cancel reservation button on the flights page. This form is used by customers who had already booked a ticket to cancel their ticket in case they want to do so. To achieve this customer will be required to provide his Id and Ticket Id that had been provided during booking.
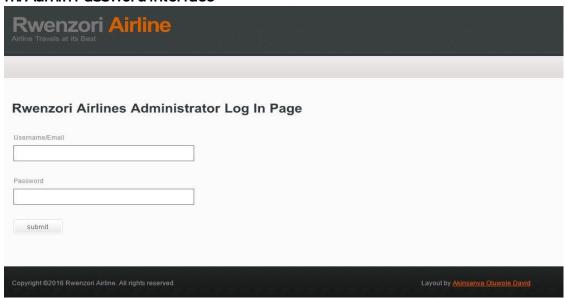
l. Contact us page

This interface is accessed by clicking on contact link on the system menu. As specified in the project scope that the Rwenzori Airlines system will have a page dedicated to user quarries. On this page a customer or user whether registered on not can post anything for which he/she is not satisfied. Information sent here will be received by the administrator and presented to Rwenzori Airlines management for consideration. Fields with * are mandatory hence must be filled before the user cam post his or her comment .

4.2 Administrator Environment

This is restricted environment; it is used by the administrator to change system content. It"s accessed by clicking on administrator link on the system menu. Access to this environment requires an admin password. Once the correct admin password is entered the person will have access to modify/delete and all control of the system.
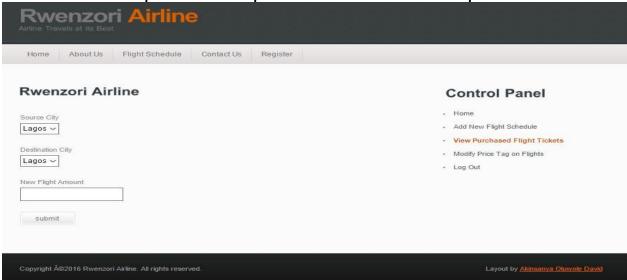
m. Admin Password Interface

n. Administrators Home

This is the administrator's home interface; it's accessed when a correct admin password is entered in the interface above. Once on this interface the administrator can schedule flights, edit ticket information, change passwords, update journey details, schedule details, change database passwords and control every aspect of the system.
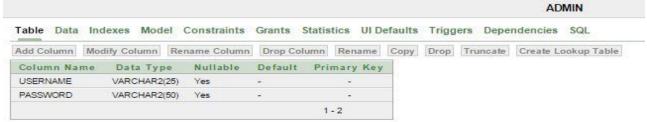

c. Change Price Interface

This interface is accessed by clicking on modify price button on the administrator's home interface. This interface is used by the administrator to modify price. To modify the price, the administrator must provide the old price and then feed in the new price.
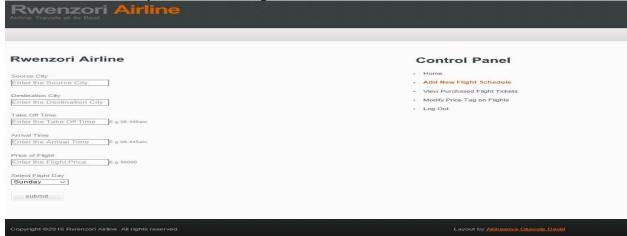
p. Database Interface

Used by the administrator to test configure and creates databases for the system. It's accessed by clicking the database button on the administrator's home interface
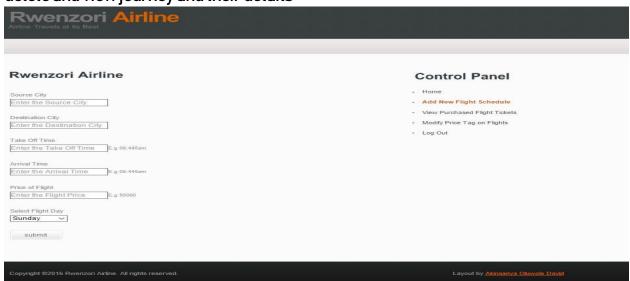

q. Add Schedule Interface

This interface is used by the administrator to add flight schedules in the system. Schedules added here can then available for booking by the customer. In here the administrator can add a new schedule or update an existing schedule

r. Journey Entry Form

This is the form used by the administrator to add journeys into the system. Journeys added here can then be available to customers for booking. This form can as well be used to update, delete and view journey and their details
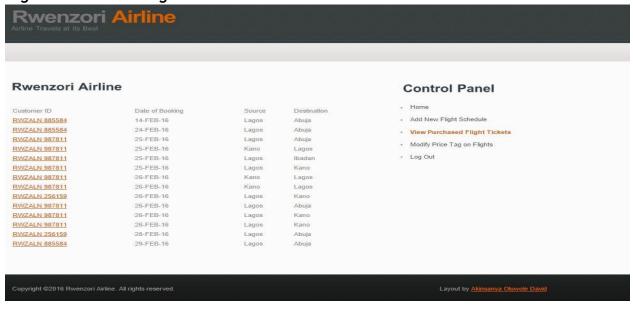
s. Ticket Adding Form

This form is used by the administrator to add tickets to the system; Tickets added here can then be available for booking by the customers. It can also be used for viewing booked Tickets, update ticket information and delete tickets

t. Flight Information Interface

This interface is used by the administrator to view booked schedules, Tickets, Journey and flights. This interface gives a record of what has been booked and what is still available.

5. Application of Airline Reservation System

Computer Reservations Systems (CRSs) are used for hosting airline seat inventory and seat reservation transactions. Originally designed, owned and operated by airlines, the use of CRSs had been extended to travel agents as a distribution tool. Over the years CRSs have evolved into Global Distribution Systems (GDSs) that host inventory of multiple airlines and other modes of travel and travel related associated services such as room reservation, ticket reservation systems for football games, train reservation for reserving train seats and many more others.

6. Conclusion

Before modern computing, the reservation system was done using manual means. This meant that a person about to travel had to spend a lot of unnecessary time waiting in queues in order to book their tickets. The manual process of reservation was also prone to human errors, which lead to a lot of dissatisfaction amongst travellers. Nowadays competition is so fierce between airlines that there are lot of discounts and a lot of luxuries given to customers that will give an edge to that particular airline. The online airline reservation automates these processes of booking airline tickets online, thus reducing the time wasted as well as the errors that are involved in the manual process. People will argue that online airline reservation system are expensive, and create unfair competition between other airlines that don't have them. From the researchers view, online airline reservation is one the best innovation that has taken place in the airline industry and those companies that have not yet embraced airline reservation system ought to lose out, they may sight, additional costs, maintenance cost and the cost of development as their drawbacks.