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Travel Star

Software Requirements Specification



CS5391-ROUND ROCK GROUP

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1. Introduction

1.1. Purpose

This document serves as an agreement between the customer (Travel Star Agency) and the developer regarding the formal requirements for the customer’s online booking system, hereinafter referred to as the system.

1.2. Scope

The primary function of the system is to allow the user to book flight tickets and hotel rooms, find flight deals, and search for flight status. The System also allows the user to register, login, redeem and accumulate mileage based on the travel and provides feedback for the System.

The system is standalone and has no integration with other systems.

1.3. References

IEEE Std 830-1998

[1] “*Manuscript Templates for Conference Proceedings*”, Available:
<https://www.ieee.org/conferences/publishing/templates.html>, 2018

1.4. Overview

Section 2 of this document contains the overall description of the system, including the hardware/software specification, general requirements and their rational. Section 3 of this document describes each individual requirement in detail.

2. Overall Description

2.1. Product Perspective

The system is a typical 3-tier web application, where the user accesses web server using browser, and web server acquires related data from database server.

2.2. Product Functions

2.2.1 Create an Account/Register

2.2.1.1. Description

This function allows a user to create an account with the system so that the system can store user information, previous order information and accumulated mileage details. For registration, the user needs to provide first name, middle name (if any), Last name, email address, username, password, and default credit card information (optional).

2.2.1.2. Rationale

The purpose of this function is to allow the system to identify the user, facilitate and trace the reservation.

2.2.2 Login

2.2.2.1. Description

The system allows a user to login under a pre-registered account using username and password.

2.2.2.2. Rationale

The purpose of this function is to allow the user manager the account and trace the reservation history.

2.2.3 Book a Flight

2.2.3.1. Description

This function allows the user to search for flights according to departure airport, destination airport, departure date(dd/mm/yyyy), return date(dd/mm/yyyy), number of passengers, and select flights, and make reservation with payment information.

2.2.3.2. Rationale

The purpose of this function is to allow the customers to book a flight.

2.2.4 Book a Hotel

2.2.4.1. Description

This function allows the user to search for hotels according to destination, check-in and check-out dates(dd/mm/yyyy), number of rooms, and make reservation with payment information.

2.2.4.2. Rationale

The purpose of this function is to allow the user to book a hotel.

2.2.5 Book Flight and Hotel Together

2.2.5.1. Description

This function allows the user to book flight and hotel together so that there can be 20% discount from the original total price.

2.2.5.2. Rationale

The purpose of this function is to encourage the user to have bundle reservation.

2.2.6 Check Flight Status

2.2.6.1. Description

This function allows the user to check the flight status using flight number and departure date.

2.2.6.2. Rationale

The purpose of this function is to get the user prepared for specific flight.

2.2.7 Accumulate Mileage

2.2.7.1. Description

This function allows a user to accumulate mileage that he/she has traveled.

2.2.7.2. Rationale

The purpose of this function is to encourage the user to make more flight reservation through the system.

2.2.8 Redeem Mileage

2.2.8.1. Description

This function allows a user to purchase a plane ticket using the mileages accumulated. 25,000 miles can be redeemed for a domestic flight and 50,000 for an international flight.

2.2.8.2. Rationale

The purpose of this function is to encourage the user to make more flight reservation through the system.

2.2.9 Finding Deals

2.2.9.1. Description

This function allows user to search for deals (flight on sale) according to source airport, destination airport, time period and the price range.

2.2.9.2. Rationale

The purpose of this function is to help to the user find flight deal.

2.2.10 Feedback

2.2.10.1. Description

This function allows a user to give feedback of his/her experience with the website. The user can send in comments and a number in 1-10 (1 is the lowest) to show his/her satisfaction with the website.

2.2.10.2. Rationale

The purpose of this function is to get feedback from the user and make improvement according.

2.3. User Characteristics

The user of the system is expected to have basic knowledge of computer and internet operation along with payment ability. Besides that, there is no specific educational or occupational restrains for the user.

2.4. Constraints

There is no specific constraint for the developer to implement the system.

2.5. Assumptions and Dependencies

There is no specific assumption and dependency for normal operation of the system.

3. Specific Requirements

This Section describes the functional requirements and non-functional requirement of the system in detail.

3.1 Functional Requirements

The system has 10 functional requirements as following.

3.1.1 Create an Account

Function	Create an Account
Description	See section 2.2.1 for description
Inputs	User name, password, Email, mailing address, First name, Middle name (if any), Last name, Credit card type/number/expiration date
Source	User
Output	User record
Destination	System database
Requires	None
Pre-condition	The web page is open and displayed on the user's screen
Post-condition	Registration status (success or failure)
Side-effects	None

3.1.2 Login

Function	Login
Description	See section 2.2.2 for description
Inputs	User name, password
Source	User
Output	User identification
Destination	System
Requires	None
Pre-condition	The web page is open and displayed on the user's screen
Post-condition	Login status (success or failure)
Side-effects	None

3.1.3 Book a Flight

Function	Book a Flight
Description	See section 2.2.3 for description
Inputs	Trip type (one way/round trip), departure airport, departure date, destination airport, return date, number of travelers, travelers name and birthday, credit card type/number/expiration date,
Source	User
Output	Order record
Destination	System database
Requires	User login (3.1.2)
Pre-condition	The web page is open and displayed on the user's screen
Post-condition	Flight information (flight number, departure time, flight time, price) for selection, and order status (success or failure)
Side-effects	None

3.1.4 Book a Hotel

Function	Book a Hotel
Description	See section 2.2.4 for description
Inputs	Destination, check-in date, checkout date, Number of rooms, number of people, travelers name and birthday, credit card type/number/expiration date,
Source	User
Output	Order record
Destination	System database
Requires	User login (3.1.2)
Pre-condition	The web page is open and displayed on the user's screen
Post-condition	Hotel information (name, location, price) for selection, and order status (success or failure)
Side-effects	None

3.1.5 Book Flight and Hotel

Function	Book Flight and Hotel
Description	See section 2.2.5 for description
Inputs	departure airport, departure date, destination airport, return date, number of travelers, travelers name and birthday, credit card type/number/expiration date,
Source	User
Output	Order record
Destination	System database
Requires	User login (3.1.2)
Pre-condition	The web page is open and displayed on the user's screen
Post-condition	Flight and hotel information for selection, and order status (success or failure).
Side-effects	None

3.1.6 Check Flight Status

Function	Check Flight Status
Description	See section 2.2.6 for description
Inputs	Flight number, departure date
Source	User
Output	Flight status
Destination	User's screen
Requires	None
Pre-condition	The web page is open and displayed on the user's screen
Post-condition	Flight status on user's screen
Side-effects	None

3.1.7 Accumulate Mileage

Function	Accumulate Mileage
Description	See section 2.2.7 for description
Inputs	Order record of flight
Source	System
Output	Total mileage
Destination	System database
Requires	User login (3.1.2) and Book flight (3.1.3)
Pre-condition	The web page is open and displayed on the user's screen
Post-condition	Mileage shown in user information after login
Side-effects	None

3.1.8 Redeem Mileage

Function	Redeem Mileage
Description	See section 2.2.8 for description
Inputs	Mileage
Source	System for the user account
Output	Order record
Destination	System database
Requires	User login (3.1.2) and Book flight (3.1.3)
Pre-condition	The web page is open and displayed on the user's screen
Post-condition	Mileage deducted according to flight information
Side-effects	None

3.1.9 Finding Deals

Function	Finding Deals
Description	See section 2.2.9 for description
Inputs	Departure airport, destination airport, Start time, End time, price range
Source	User
Output	Order record
Destination	System database
Requires	User login (3.1.2)
Pre-condition	The web page is open and displayed on the user's screen
Post-condition	Flight information for selection and order status (success or failure)
Side-effects	None

3.1.10 Feedback

Function	Feedback
Description	See section 2.2.10 for description
Inputs	Name, email, Rating from 1 to 10, and feedback
Source	User
Output	Feedback record
Destination	System database
Requires	None
Pre-condition	The web page is open and displayed on the user's screen
Post-condition	Feedback status
Side-effects	None

3.2 Non-functional requirements

3.2.1 Performance

The system supports 200 concurrent users and response time for each user is less than 1 second.

3.2.2 Reliability

The system maintenance time (down time) is less than 2 hours per week.

3.2.3 Security

The system only provides HTTPS connection (minimum version TLS 1.0) and user credential information are encrypted in database.