**Airline Reservation system**

**A CSCI313 Project**



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**Table of Contents**

**Table of Contents ii**

**Revision History ii**

**1. Introduction 1**

1.1 Purpose 1

1.2 Scope of the project 1

1.3 Technologies Used 1

1.4 Target Audience 1

1.5 Document Overview 1

**2. Overall Description**

2.1 Product Perspective

2.2 User Characteristics

2.3 Constraints

2.4 Assumptions and Dependencies

**3. Functional Requirements**

**3.1 User**

**1.1 Purpose of the Document**

Our aim in this document is to describe the Airline reservation system, It describes the project's objectives, scope, technologies used, target audience, and overall system architecture.

**1.2 Scope of the Project**

The Airline Reservation System's major purpose is to simplify the flight booking process for customers. This includes functions such as searching for flights, selecting seats, making reservations, and processing payments. Furthermore, it may include services such as managing flight schedules, maintaining client profiles, and creating booking reports.

**1.3 Technologies Used**

* Database - (MongoDB)
* Frontend: HTML, CSS, JavaScript
* Version Control: Git, GitHub

**1.4 Intended Audience**

1. Customers: Individuals looking to book flights for personal or business travel.

2. Developers: Individuals who design and maintain the system.

3. Stakeholders and Bosses: People who make system decisions.

4. Testers: Individuals who ensure that the system functions properly.

5. Support: Individuals who assist consumers with their concerns.

6. Businesses: Enhancing the customer experience.

7. Sales and marketing personnel are those who inform others about the system.

8. Analysts: People who study how well the system is doing

**1.5 Document Overview**

This Software Requirements Specification (SRS) describes a description of specialized software developed to let clients book flights more efficiently. This article is intended to assist you in comprehending the system's goal, features, benefits, and functionality.

The system makes it easier to search for available flights, choose seats, make reservations, and process payments. It may also include features for organizing airline schedules, keeping customer profiles, and creating booking data.

\*\*Chapter 2: Overall Description\*\*

\*\*Product Perspective\*\*

The product perspective for an airline reservation system is designed to help users to simplify the flight booking process for customers. This includes functions such as searching for flights, selecting seats, making reservations, and processing payments. Furthermore, it may include services such as managing flight schedules, maintaining client profiles, and creating booking reports.

\*\*\*\*

the airline reservation system will provide users with the following features:

\* Flight Search and Availability

\* Reservation and Booking

\* Seat Selection

\* Booking Management

\*\*User Characteristics\*\*

The airline reservation system is designed for the following users:

\* Passengers

\* Administrators and Airline Staff

\* Travel Agents

\* Mobile Users

\* Corporate Travel Managers

\*\*Constraints\*\*

The airline reservation system is subject to the following constraints:

\* Regulatory and Legal Constraints

\*Security Constraints

\* Infrastructure Constraints

\* Financial Constraints

\*\*Assumptions and Dependencies\*\*

The airline reservation system is based on the following assumptions and dependencies:

\* Users have reliable internet access to use the online reservation system.

\* Users have devices (computers, smartphones, tablets) that are compatible with the system's software and web browsers.

\* Successful integration with airline databases is necessary for real-time updates on flight schedules, availability, and pricing.

**Chapter 3: Functional Requirements**

As a prospective traveler, I want to effortlessly create a new account on the airline reservation system, providing necessary personal information for a streamlined booking experience.

As a customer, I want a secure and convenient online payment process to complete my ticket booking.

As a customer, I want the flexibility to modify my reservations, including changes to tickets types, dates.

As a customer, I want the ability to cancel my reservations, when necessary, with clear information on any associated fees.

As a User should be able to search for flights based on criteria such as date, destination, and class. The system must allow for the selection and booking of flights.

**Chapter 4: Non-Functional Requirements**

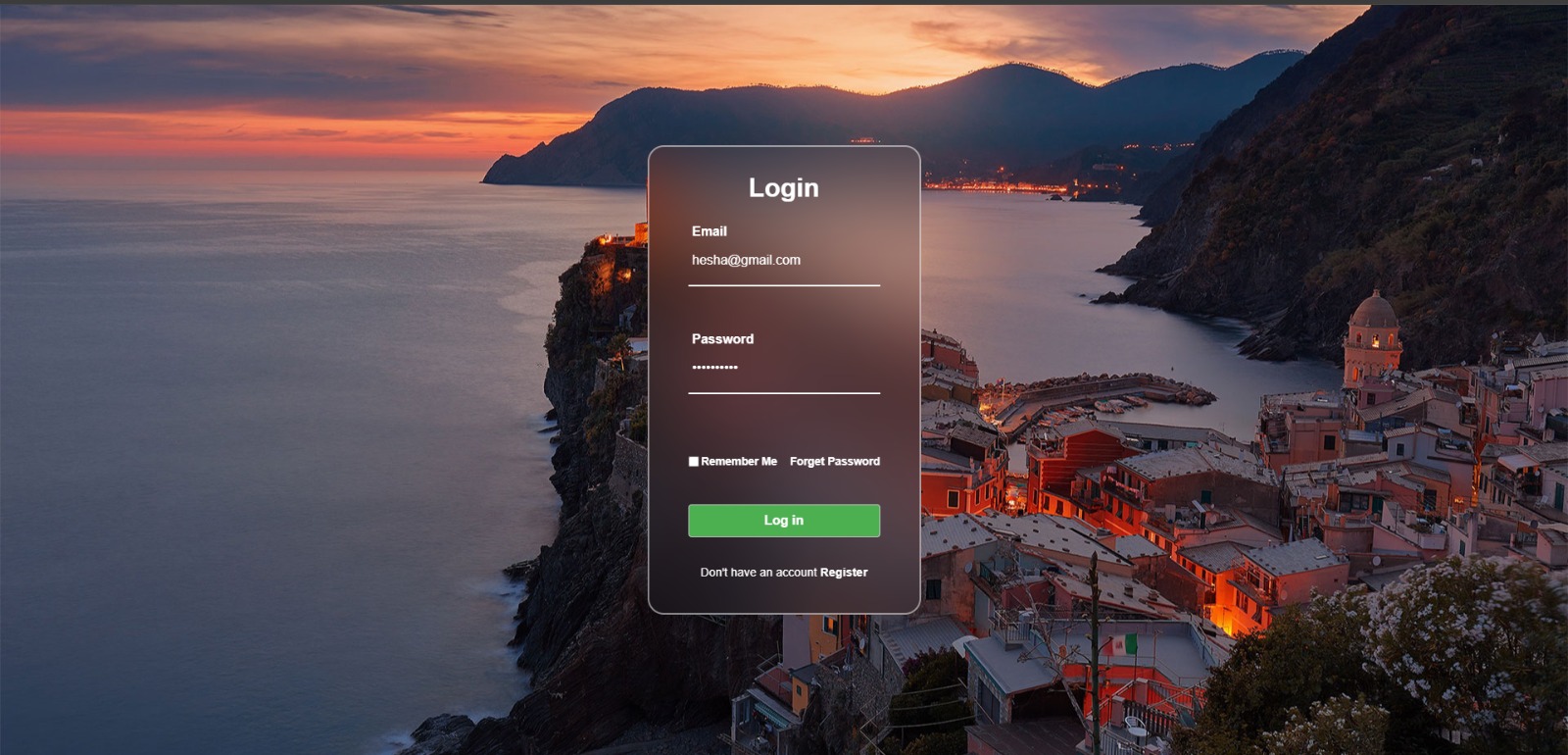
As a system user, I want the ticket search interface to respond within seconds to provide a responsive and efficient booking experience.

As a customer, I want the payment gateway integration to have an uptime of at least 99.9% to ensure seamless online payment processing.

As a customer, I want the system to have a booking success rate of at least 99.5% under normal operating conditions.

As a system administrator, I want all cancellation transactions to be logged for audit purposes, including user, timestamp, and reason for cancellation.

1.1 if he chooses to log in:



1.2 choose a reservation:

A group of red telephone booths

Description automatically generated

1.3 reservation and booking:  
  
A screenshot of a login screen

Description automatically generated

1.4 Booking confirmation:

A screenshot of a computer

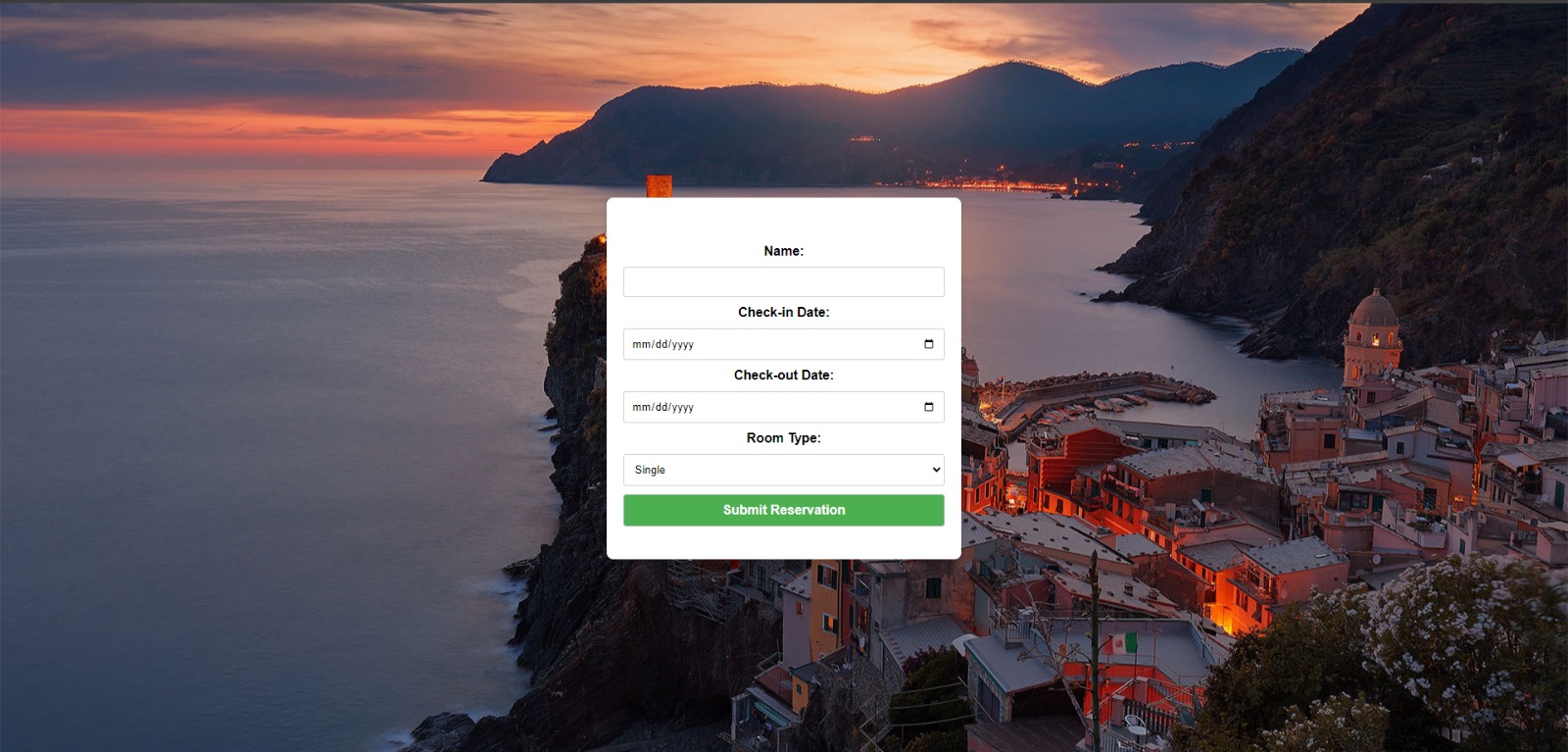
Description automatically generated

1.5 choose a reservation:

A group of red telephone booths

Description automatically generated

1.6 Choose a hotel:



2. The airline reservation system website's ticket booking boasts a user-centric interface created with HTML, CSS, and PHP, tightly integrated with a MySQL database. This intuitive web application enables users to effortlessly search for flights, complete bookings by entering passenger information and flight preferences, access comprehensive booking details, and conveniently cancel reservations, providing a seamless and visually engaging experience for travelers.

**3. Diagrams**

**3.1 Use Case Diagram**

A diagram of a flowchart

Description automatically generated

Sequence diagram:

A white paper with black lines

Description automatically generated

Class Diagram:   
A screenshot of a computer

Description automatically generated

Use Case #1

|  |  |
| --- | --- |
| User Case Name | Flight Reservation |
| Actors | Passenger |
| Main success scenario | 1. The Airline System displays the flight reservation interface, prompting the passenger to input their booking details. 2. The passenger provides the required information, including departure and destination airports, travel dates, and the number of passengers. 3. The system validates the input and presents available flight options based on the provided details. 4. The passenger selects a preferred flight from the list of available options. |
| Exceptions | * Invalid Input: If the passenger provides incomplete or invalid information, the system displays an error message and prompts the passenger to correct the details. |
| Actions | * The passenger initiates the flight reservation process by entering their travel details and selecting a preferred flight. |
| Pre-Conditions | * The passenger has access to the Airline System's reservation interface. * The passenger has a valid payment method if required for booking. |
| Post-Conditions | * The passenger successfully reserves a seat on the chosen flight. |

Use Case #2

|  |  |
| --- | --- |
| User Case Name | Flight Cancellation |
| Actors | Passenger, Airline System |
| Main success scenario | 1. The passenger accesses the airline's website or contacts customer support to initiate a flight cancellation. 2. The system prompts the passenger to log in or enter their booking reference and last name for verification. 3. The passenger selects the flight they wish to cancel. |
| Exceptions | Late Cancellation: If the cancellation request is made close to the departure time and is subject to specific rules, the system notifies the passenger of potential penalties. |
| Actions | * - The passenger initiates the flight cancellation process through the airline's website or customer support. |
| Pre-Conditions | * The passenger has an existing flight reservation. |
| Post-Conditions | * The passenger's flight reservation was successfully canceled. * The system updates the reservation status and, if applicable, processes any refunds. |

Use Case #3

|  |  |
| --- | --- |
| User Case Name | Hotel Reservation |
| Actors | Guest, Hotel Reservation System |
| Main success scenario | 1. The guest accesses the hotel's website, mobile app, or contacts the hotel directly to make a reservation. 2. The system prompts the guest to enter details such as check-in and check-out dates, number of guests, and room preferences. 3. The guest provides the required information. |
| Exceptions | Room Unavailability: If the selected room is not available for the chosen dates, the system suggests alternative options and prompts the guest to make another selection. |
| Actions | * The guest initiates the hotel reservation process through the hotel's digital platforms or direct communication. |
| Pre-Conditions | * The guest has access to the hotel's reservation system. |
| Post-Conditions | * - The guest successfully reserves a room at the hotel. * - The hotel updates its records with the new reservation information. |

Use Case #4

|  |  |
| --- | --- |
| User Case Name | Hotel Booking Cancellation |
| Actors | Guest, Hotel Reservation System |
| Main success scenario | 1. The guest accesses the hotel's website, mobile app, or contacts the hotel directly to initiate a booking cancellation. 2. The system prompts the guest to log in or enter their reservation details for verification. 3. The guest provides the necessary information to identify their booking. |
| Exceptions | - Late Cancellation: If the cancellation request is made close to the check-in date and is subject to specific rules, the system notifies the guest of potential penalties. |
| Actions | * - The guest initiates the hotel booking cancellation process through the hotel's digital platforms or direct communication. |
| Pre-Conditions | * - the guest has a valid reservation with the hotel. * - The cancellation is initiated within the timeframe allowed by the hotel's policies. |
| Post-Conditions | * - The guest's hotel reservation is successfully canceled. * - The hotel updates its records with the cancellation information. |

Link of the video:  
https://drive.google.com/drive/folders/1UaA4WCQRcecMPrO6rQO0lvNrQv5Px0UG?q=parent:1UaA4WCQRcecMPrO6rQO0lvNrQv5Px0UG%20sharedwith:public

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| **TEST CASE 1:**   |  |  | | --- | --- | |  | | | **Test Case ID: Awelmara\_1** | **Test Designed by: Hesha** | | **Test Priority (Low/Medium/High): high** | **Test Designed date: 27/12/2023** | | **Module Name: login** | **Test Executed by:** | | **Test Title: log-in** | **Test Execution date: 27/12/2023** | | **Description: verify log-in with valid username and password** |  | |  |  | |  |  | | **Pre-conditions:**  User has a valid account | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Step** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | | 1 | Open the website. |  | Able to the sign-up page | As expected | Pass | | 2 | Choose log-in |  | Able to see the login page | As expected | Pass | | 3 | Enter username | Username: [Hesha@gmail.com](mailto:Hesha@gmail.com) | Credential can be entered | As expected | Pass | | 4 | Enter password | Password :\*\*\*\*\*\*\* | Credential can be entered | As expected | Pass | | 5 | Click on the log-in button |  | User logged in | User logged in successfully | Pass |  |  |  | | --- | --- | | **TEST CASE 2:** | | | **Test Case ID: tanymara\_2** | **Test Designed by: aly** | | **Test Priority (Low/Medium/High): high** | **Test Designed date: 27/12/2023** | | **Module Name: login** | **Test Executed by: aly** | | **Test Title: log-in** | **Test Execution date: 27/12/2023** | | **Description: verify log-in with invalid username and password** |  | |  |  | |  |  | | **Pre-conditions:**   * User does not have a invalid username and password | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Step** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | | 1 | Open the website. |  | Able to the sign-up page | As expected, | Pass | | 2 | Choose log-in |  | Able to see the login page | As expected, | Pass | | 3 | Enter username | Username: [aly@gmail.com(invalid](mailto:aly@gmail.com(invalid)) | Credential can be entered | As expected, | Pass | | 4 | Enter password | Password: \*\*\*\*\*\*\* (invalid) | Credential can be entered | As expected, | Pass | | 5 | Click on the log-in button |  | User logged in | unsuccessfully login, system displays the message “invalid” User remains on the login page | Fail | | |
| **TEST CASE 3:**  **Test Case ID: nextstep\_1** | **Test Designed by: marawan** |
| **Test Priority (Low/Medium/High): high** | **Test Designed date: 27/12/2023** |
| **Module Name: Flight Booking** | **Test Executed by: marawan** |
| **Test Title: Test the ability to search for flights and book a flight in the airline reservation system** | **Test Execution date: 27/12/2023** |
| **Description: Existing flight data in the system** |  |
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|  |  |
| **Pre-conditions:**   * **Ensure the user is logged in or has a valid account.** * **Existing flight data in the system** * **The flight availability** | |

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| **Step** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Navigate to the flight search page | User= [maro@gmail.com](mailto:example@gmail.com) | User should User is on the flight search page able to login | User should User is on the flight search page able to login | Pass |  |
| 2 | Select travel dates | Password: 1234 | Dates are selected | Dates are selected | Pass |  |
| 3 | Enter origin airport code |  | Origin airport is entered | Origin airport is entered | Pass |  |
| 4 | Enter destination airport |  | destination airport is entered | destination airport is entered | Pass |  |
|  | Click on the Search button |  | Available flights are displayed | Available flights are displayed | Pass |  |

**post-condition:** User successfully searches for a flight, selects a flight, enters passenger details, and books the flight. The booking details are stored in the system.

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| --- | --- |
| **TEST CASE 4:** | |
| **Test Case ID: nextstep\_2** | **Test Designed by: omar** |
| **Test Priority (Low/Medium/High): high** | **Test Designed date: 27/12/2023** |
| **Module Name: Flight Booking** | **Test Executed by: omar** |
| **Test Title: Verify behavior with invalid flight booking data** | **Test Execution date: 27/12/2023** |
| **Description: Test the behavior of the system when users attempt to book a flight with invalid or missing information.** |  |
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| --- | --- | --- | --- | --- | --- | --- |
| **Step** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Navigate to the flight search page | User should choose the flight | User is on the flight search pag |  |  |  |
| 2 | Select travel dates- Enter origin airport code- Enter destination airport |  | Dates are selected.  Origin airport is entered.  destination airport is entered | As expected, | Pass |  |
| 3 | Click on the Search button |  | Available flights are displayed | The system displays a “its not add to the cart | Fail |  |

**TEST CASE 5:**

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| --- | --- |
|  | |
| **Test Case ID: hatel\_1** | **Test Designed by: mohamed** |
| **Test Priority (Low/Medium/High): high** | **Test Designed date: 27/12/2023** |
| **Module Name: Hotel Reservation** | **Test Executed by: mohamed** |
| **Test Title: Verify successful hotel reservation** | **Test Execution date: 27/12/2023** |
| **Description: Test the system's ability to successfully make a hotel reservation with valid information.** |  |
|  |  |
|  |  |
| **Pre-conditions:**  User is logged in with valid credentials | |

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| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** |
| 1 | Navigate to the hotel search page | Enter a search term for hotel | Able to Search for an item | As expected, | Pass |
| 2 | Enter valid check-in and check-out dates |  | Check-in Date and check out | As expected, | Pass |
| 4 | Click on the Search button | Click the "view cart" button | Available hotels are displayed | As expected, | Pass |