SIBA CAMPUS
SRI LANKA INTERNATIONAL BUDDHIST ACADEMY
(Higher Educational Institute of Sri Dalada Maligawa)

BSc in Information Technology

IT 250 - Database Management System

Software Requirements Specification

ABC Flight Booking System

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1. Introduction

1.1 Purpose

The ABC Flight Booking System is a comprehensive software solution designed to streamline the process of managing flights for airlines, airports, and travel agencies. This documentation serves as a guide for users and administrators to understand and utilize the system effectively.

The software is providing options for viewing different flights available within a different timing for a specific day. That provide customers within facility to able to book ticket smoothly. The customers can modify and able to cancel the ticket for any reason. That prepare within a role and policies. The software should provide an option for checking availability of the tickets. That is important for the customers to get a message if the ticket is unavailable. That will be displayed to customers. The customers should be noted when the change has been made or any further changes.

1.2 Scope

The airline booking website is an application stored in the user server. The purpose of the website is to resolve the client to allow website users to perform tasks related to booking an airline flight. The system enables to perform the following functions:

- Automation of flight operations
- Automation of ticketing / seat booking
- Confirmation system
- Cancellation
- Improved and optimized service

1.3 Overview

The system allows users to perform various tasks such as flight scheduling, booking management, and passenger information handling. It provides a centralized platform for real-time collaboration and data management across different departments involved in flight operations.

2. Overall Description

2.1 Problem Statement

Developing an ABC FLIGHT BOOKING SYSTEM- AFB for an airline company that wants to automate its flight operations and ticketing / seat booking and confirmation system.

2.2 Existing System

Before the automation the system suffered from following drawbacks:

- ❖ The existing system is highly manual and involves a lot of paperwork and calculations and therefore may have errored us. This led to consistency and accuracy.
- ❖ The data may be lost, stolen or destroyed because it is stored on paper.
- ❖ The existing system consumes a lot of time causing inconvenience to customers and the staff.
- ❖ It's difficult to update, delete, or view the data due to its manual nature.
- ❖ Increasing the number of passengers leads to difficulty in maintaining and retrieving details.

2.3 Proposed System

The AFBS is proposed with the following,

- The computerization of the reservation system will reduce a lot of paperwork and hence load on the hence the load on airline admin and staff.
- The machine will perform all the calculations. Hence the chances of error are nearer to zero.
- The passenger, reservation, cancellation list can be easily retrieved and any required addition, deletion, updating can be performed easily and fast.

2.4 Product Functions

Booking agents with varying levels of familiarity with computers will mostly use this system. With this on mind, an important feature of this software is that it will be relatively simple to use.

The scope of this product encompasses:

- SEARCH: This function allows the booking agent to search for airplanes and tickets' availability between two cities, i.e., departure city and arrival city, the date of departure, preferred time and number of passengers.

- SELECTION: This function allows a particular airplane to be selected from the displayed list. All details such as;
  - Airplane number
  - Date, time and place of departure.
  - Date, time and place of arrival.
  - Fare per head etc.

- Review: If seats are available, then system prompts for the booking. All the information including total fare with taxes and flight details are reviewed.

- Traveler Information: The details of all passengers supposed to travel including name, address, contact number, email etc.

- Payment: It asks the agent to enter the various credit card details of the person making the reservation i.e.

  - Credit card type.
  - Credit card number.
  - Expiration date of the card
  - The name on the card etc.

- Cancellation: The system allows the passenger to cancel a reservation and register the information regarding his/her ticket. It includes Confirmation no, name, date of journey, fare deducted.

2.5 User Characteristics

2.5.1 User requirements

- User properties like Name, Email, Contact Number,
- Associated with Credit Card information.
- Flight properties like Departing/Arriving City, Departure/Arrival dates and times, and an identifying Flight Number.
- Flight Seat properties of identifying seat number, reserved and flight
- Associated to Flight-by-flight number.

2.5.2 User Education Level

At least user of the system should be comfortable with English Language.

2.5.3 User's Technical Expertise

User should be comfortable using general purpose applications on the computer system.

2.6 Constraints

System constraints:

- The system is a web base, so it will run on a web browser i.e., IE, Chrome, Firefox etc.
- The system will run under any OS with internet functionality.

2.7 Assumption and Dependencies

- The booking agent will have a valid username and password to access the system.
- The software needs a booking agent to have complete knowledge of OFMS.
- Software is dependent on access to internet.

3. Requirement Specification

This section highlights the functional requirements, non-functional requirements and other requirements.

3.1 Functional Requirements

3.1.1 Performance requirements

- User Satisfaction: The system is such that it stands up to the user's expectations.
- Response Time: The response of all operations is good.
- Error Handling: Response to user errors and undesired situations has been taken care of to ensure that the system operates without halting.
- Safety and Robustness: The system is able to avoid or tackle disastrous actions. In other words, it should be foul proof.
- Portable: The software should not be architecture specific. It should be easily transferable to other platforms if needed.
- User Friendliness: The system is easy to learn and understand. A native user can also use the system effectively, without any difficulties.

3.1.2 Design constraints.

There are a number of factors in the client's environment that may restrict the choices of a designer. Such factors include standards that must be followed, resource limits, operating environment, reliability and security requirements and policies that may have an impact on the design of the system.

- **Standard Compliances** This specifies the requirement for standards the system must follow. The standards may include the report format and accounting properties.

- **Hardware Limitations** Hardware limitations can include the types of machines to be used, the operating system available on the system, languages support and limits on primary and secondary storage.

- **Reliability and Fault Tolerance** Fault tolerance requirements constrain system design, with recovery requirements ensuring system properties in failure. Reliability requirements are crucial for critical applications.

- **Security** Security requirements in defense and database systems restrict commands, control data access, require passwords and cryptography, and maintain system logs for different access levels.

3.1.3 Hardware Requirements

For the hardware requirements like memory restrictions, cache size, the processor, RAM size etc... those are required for the software to run.

MINIMUM Hardware Requirements

- Processor Pentium IV
- Hard Disk Drive 100 GB
- RAM 1 Gb

PREFERED HARDWARE REQUIREMENTS

- Processor Core i3
- Hard Disk Drive 500 GB
- RAM 4 GB

3.1.4 Software Requirements

Any window-based operating system with DOS support is primary requirements for software development. Windows 7 and up are required. The system must be connected via LAN and connection to internet is mandatory.

3.1.5 Other Requirement

- Security
- Portability
- Correctness
- Efficiency
- Flexibility
- Testability
- Reusability

3.2 Non-Functional Requirements

3.2.1 Security

The system should log out customers after inactivity, prevent cookies containing passwords, and restrict access to back-end servers to authenticated management only.

3.2.2 Reliability

The project's reliability relies on the reliability of its components, with the main pillar being the database backup and the stability of the container and OS.

3.2.3 Availability

The system should be accessible 24 via web browser, with server downtime being limited. It should be customer-friendly, working 24 hours a day, and provide replacement pages and backups in case of hardware or database failure.

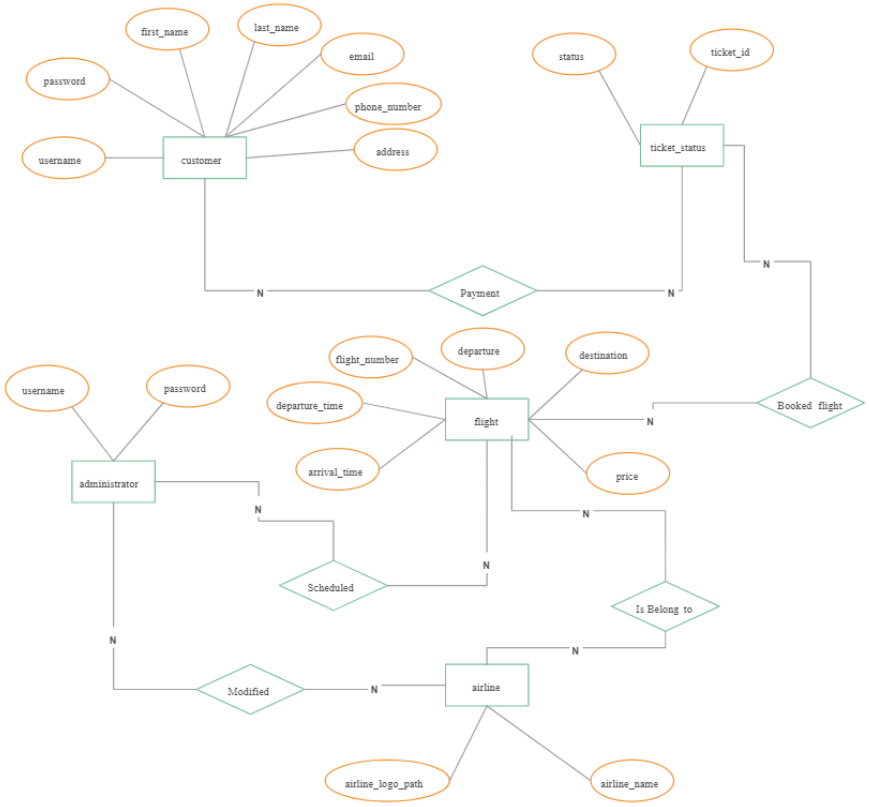
3.2.4 Maintainability

In case of a failure, a re-installation of the system will be done. Also, the software design is being done with modularity in mind so that maintainability can be done efficiently.

3.2.5 Supportability

The code and supporting modules of the system will be well documented and easy to understand. Online user documentation and Help system requirements will be provided.

4. ER Diagram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5. Conclusion

In conclusion, the ABC Flight Booking System serves as a pivotal tool for airlines, airports, and travel agencies to streamline their flight operations and enhance overall efficiency. Through its comprehensive features such as flight scheduling, booking management, passenger information handling, and reporting capabilities, the system empowers users to manage every aspect of flight operations with ease and accuracy.

By providing a centralized platform for real-time collaboration and data management, the system facilitates seamless communication and coordination among different departments involved in flight operations. This not only improves productivity but also ensures a smooth and hassle-free travel experience for passengers.

The ABC Flight System is a flexible, scalable solution for the aviation industry, fostering innovation and excellence in flight operations management. Its robust features, user-friendly interface, and dedicated support are poised to revolutionize digital flight management.

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