



Dr. D.Y. Patil School of MCA

Charoli (BK), PUNE- 412105

**SAVITRIBAI PHULE PUNE UNIVERSITY
MASTER OF COMPUTER APPLICATION**

**Project Report on
“Airline Reservation System”**

**Under The Guidance Of
“Prof. Urmila Kadam”**

BY

Suraj Shinde (244)

Class: MCA-I (Sem-II)

Year: 2022-2023



DR. D.Y. Patil School of MCA Charholi (Bk), Lohegaon,
Pune – 412105

Certificate

This is to certify that Mr. Suraj Shinde (244) Student of the class MCA-I (Sem-II) has successfully completed the Mini Project entitled “**Airline Reservation System**” during the academic year 2022-2023

Prof. Urmila Kadam

Project Guide

Prof. Ashok Deokar

HOD

Dr. E. B. Khedkar

Director

Examiner 1

Examiner 2

Place : Pune

Date :

1. Introduction

1.1 Introduction

Airline reservation system is a modern way and improved method in which clients can easily access all information about flights without manual efforts. Most people now days travel by means of air, hence this project aims at simplifying their needs by offering a wide range of airlines and timings where they can choose from and book their travels. The online reservation system gives all details of flight schedules, cost, time, seats and check-in details making it easier for the traveler. The outcome was implemented using programming languages like PHP, html, and database management system {MySQL}, this improved method will help solve the manual system drawbacks which included time consuming and other manual errors. Hence it is more efficient

1.2 Existing System and Limitation of the Existing system

Existing System:

The existing system for airlines reservation typically involves manual processes, such as calling or physically visiting the airline ticket office to book a ticket, which can be time-consuming and inefficient. In addition, traditional airline reservation systems may have limited availability of seats and flight information, which can result in missed opportunities for customers to book preferred flights.

Limitation of the Existing system:

- **Manual Booking Process:** The existing system may rely heavily on manual processes for booking flights, which can be time-consuming and prone to human errors.
- **Limited Accessibility:** The current system may lack accessibility features for individuals with disabilities, such as visual impairments or mobility issues.
- **Lack of Online Booking:** If the existing system does not support online booking, customers may be limited to making reservations through phone calls or physical ticket counters, which can be inconvenient in today's digital age.

- **Security and Data Privacy:** If the existing system lacks robust security measures and data privacy protocols, customer information and payment details could be at risk of unauthorized access or breaches.

1.3 Need for the proposed system

The need for a modern, automated airline reservation system has become increasingly important as the demand for air travel has grown. A new system can offer real-time updates and availability of flights, allowing customers to quickly and easily book flights from the convenience of their computer or mobile device. Such a system can also provide airlines with important insights and data on customer behavior and preferences, enabling them to optimize pricing and flight schedules to meet demand.

2. Proposed System

2.1 Problem Statement

The existing airline reservation system faces several challenges that hinder its efficiency and user experience. These challenges include manual booking processes, limited accessibility, lack of online booking options, inefficient seat management, and inadequate integration with other airline systems. Additionally, the system may lack real-time updates, suffer from security and data privacy concerns, and fail to provide self-service options or a seamless user experience. These limitations restrict the system's ability to handle a large number of users, adapt to changing business rules, and integrate with external services. Therefore, there is a need for an enhanced airline reservation system that overcomes these limitations and provides a more efficient, user-friendly, and secure platform for airline bookings.

2.2 Objective of Proposed system

- To provide a user-friendly interface that makes it easy for customers to book flights, access information.
- To simplify the process of booking flights and make it easy for customers to search for available flights.
- To automate many of the manual processes involved in airline reservations, such as ticketing.
- To improve the overall efficiency of airline operations.
- To provide real-time information about flight availability, pricing, and schedules.
- To provide airlines with detailed data and analytics about customer behavior and preferences.s

2.3 Functional and Non-Functional Requirements

- User Registration and Authentication:
- Maintain user profiles with personal information and preferences.
- Provide a search interface for users to find flights based on criteria such as date, destination, and departure location.

- Enable users to select flights, choose seating preferences, and book tickets securely.
- Manage seat inventory for each flight and display seat availability to users during the booking process.
- Support the addition, modification, and cancellation of flights by airline administrators.
- Update flight status (e.g., delayed, canceled) and notify affected users.
- User-friendly interface
- High availability and reliability
- High security to protect user data

2.4 Scope of the system

- **Flight information:** The system should provide real-time information about flight schedules, availability of seats, and pricing.
- **Booking and reservation:** Customers should be able to make reservations and book flights easily through the system. The system should be able to handle a large volume of transactions efficiently and accurately.
- **Payment processing:** The system should support various payment options and ensure secure and reliable processing of transactions.
- **Customer management:** The system should be able to manage customer profiles, including personal and contact information, booking history, and preferences.
- **Flight management:** The system should allow airlines to manage their flights, including scheduling, seat allocation, and pricing

2.5 Module Specification

- Admin
- Customer
- Flights
- Airlines
- Feedback
- Ticket

2.6 Operating Environment

Hardware Configuration

- **Processor:** Intel core i3
- **Ram :** 4 GB
- **Hard-Disk:** 100 GB

Software Configuration :

- **Front-End:** HTML, CSS, PHP.
- **Backend:** MySQL.
- **Operating System:** Windows 7 and above
- **Ide :** VS Code

3. Requirement Determination and Analysis

3.1 Feasibility Study

- **Technical feasibility:** The system should be technically feasible, meaning that it can be developed and implemented with the available technology and resources. This includes evaluating the hardware and software requirements, system scalability, and security considerations.
- **Economic feasibility:** The system should be economically feasible, meaning that the benefits of the system outweigh the costs of development, implementation, and maintenance. This includes evaluating the return on investment (ROI), cost-benefit analysis, and total cost of ownership (TCO) over the system's life cycle.
- **Operational feasibility:** The system should be operationally feasible, meaning that it can be effectively integrated into existing operations and processes. This includes evaluating the system's impact on the organization's workflow, staff training requirements, and potential risks and challenges.
- **Legal feasibility:** The system should be legally feasible, meaning that it complies with all relevant laws, regulations, and industry standards. This includes evaluating data privacy and security regulations, intellectual property rights, and contractual obligations.

4. System Analysis and Design

4.1 Entity Relationship Diagram :

4.2 Use Case Diagram:

4.3 Class Diagram:

4.4 Sequence Diagram:

4.5 Activity Diagram:

4.6 Module Hierarchy Diagram:

4.7 Component Diagram:

4.8 Deployment Diagram:

4.9 Web site map Diagram:

4.10 Table Specification [Data Dictionary]:

1. Table Name: Admin

This table is used to store details about the admin

Sr. No	Field	Data Type	Size	Constraint	Description
1.	admin_id	Int	11	PRIMARY KEY	Admin Id
2.	admin_uname	varchar	20	UNIQUE KEY	Admin Name
3.	admin_email	varchar	50	UNIQUE KEY	Admin Email
4.	admin_pwd	varchar	100	NOT NULL	Admin password

2. Table Name: Airline

This table is used to store details about the Airline (company) names

SR. No	Field	Data Type	Size	Constraint	Description
1.	airline_id	int	11	PRIMARY KEY	Airline Id
2.	name	Varchar	20	UNIQUE KEY	Airline Name
3.	seats	int	11	NOT NULL	Airline Seats

3. Table Name: cities

This table is used to store details about the city names

SR. No	Field	Data Type	Size	Constraint	Description
1.	c_id	int	11	PRIMARY KEY	City Id
2.	city	varchar	20	UNIQUE KEY	City Name

4. Table Name: feedback

This table is used to store details about the Feedback from the users.

SR. No	Field	Data Type	Size	Constraint	Description
1.	feed_id	int	11	PRIMARY KEY	Feedback Id
2.	email	varchar	50	UNIQUE KEY	User Email
3.	q1	varchar	250	NOT NULL	Question 1
4.	q2	varchar	20	NOT NULL	Question 2
5.	q3	varchar	250	NOT NULL	Question 3
6.	rate	int	11	NOT NULL	Ratings

5. Table Name: Reservation

This table is used to store details about the Reservation

SR. No	Field	Data Type	Size	Constraint	Description
1.	reser_id	int	11	PRIMARY KEY	Reservation Id
2.	user_id	int	11	FOREIGN KEY	User Id
3.	flight_id	int	11	FOREIGN KEY	Flight Id
4.	seat_no	varchar	10	NOT NULL	Seat No
5.	cost	int	11	NOT NULL	Cost of Flight

6. Table Name: users

This table is used to store details about the Users

SR. No	Field	Data Type	Size	Constraint	Description
1.	user_id	int	11	PRIMARY KEY	User Id
2.	user_name	varchar	20	UNIQUE KEY	User Name
3.	email	varchar	50	UNIQUE KEY	User Email
4.	password	varchar	100	NOT NULL	User Password

7. Table Name: Flight

This table is used to store details about the Flight

SR. No	Field	Data Type	Size	Constraint	Description
1.	flight_id	int	11	PRIMARY KEY	Flight Id
2.	admin_id	int	11	FOREIGN KEY	Admin Id
3.	arrival	datetime		NOT NULL	Arrival Time
4.	departure	datetime		NOT NULL	Departure Time
5.	destination	varchar	20	NOT NULL	Destination Name
6.	source	varchar	20	NOT NULL	Source Name
7.	airline	varchar	20	NOT NULL	Airline Name
8.	seats	varchar	110	NOT NULL	Seat No
9.	price	int	11	NOT NULL	Ticket Price

4.11 User Interface Design and Reports:

5. Drawbacks and Limitation

- **Reliance on Internet Connectivity:** The system heavily depends on stable internet connectivity. In case of network issues or outages, users may face difficulties in accessing or using the system for booking or managing reservations.
- **System Downtime:** Scheduled maintenance or unexpected system failures can result in temporary unavailability of the reservation system, impacting users' ability to make bookings or modifications.
- **Limited Personalized Assistance:** Unlike traditional ticketing counters or phone support, the system may lack personalized assistance for complex bookings or special requests. Users might miss the human touch or feel frustrated if they encounter difficulties that require human intervention.
- **Integration Challenges:** Integrating the airline reservation system with other airline systems, such as flight management or baggage handling, can be complex. Incompatibilities or difficulties in data exchange may arise, impacting overall operational efficiency.
- **Data Security and Privacy:** Protecting customer information, including personal details and payment data, is crucial. Inadequate security measures can lead to unauthorized access, data breaches, or privacy concerns.
- **System Complexity and Updates:** Over time, as new features and functionalities are added, the system may become more complex. Users may find it challenging to navigate or understand the new additions, requiring ongoing user training or improved user interfaces.
- **Limited Offline Functionality:** The system may heavily rely on real-time connectivity, making it difficult to operate or access certain features when offline or in areas with poor internet connectivity.

6. Proposed Enhancement

- **User-Friendly Interface:** Design a user interface that is intuitive, easy to navigate, and visually appealing. Simplify the booking process with clear instructions and guidance at each step.
- **Mobile Application:** Develop a dedicated mobile application for the airline reservation system to cater to the growing number of users who prefer to book flights using their smartphones or tablets. Ensure the app is responsive, user-friendly, and offers offline functionality where possible.
- **Personalization and Customization:** Implement features that allow users to customize their preferences, such as seat selection, meal options, or special requests. Provide personalized recommendations based on user history and preferences.
- **Real-Time Flight Updates:** Integrate real-time data feeds to provide users with up-to-date information on flight schedules, delays, gate changes, and cancellations. Send proactive notifications and alerts to users regarding any changes to their booked flights.
- **Seamless Integration with External Systems:** Enhance integration capabilities with other airline systems, such as baggage handling, loyalty programs, and flight management. Ensure seamless data exchange and synchronization to improve operational efficiency.
- **Accessibility Features:** Ensure the system complies with accessibility guidelines, allowing users with disabilities to easily access and use the reservation system. Implement features such as screen reader compatibility, keyboard navigation, and color contrast options.
- **Intelligent Fare Management:** Incorporate dynamic pricing algorithms to optimize fare management based on demand, seasonality, and competitor pricing. Offer personalized deals and discounts to loyal customers or based on historical booking patterns.

7. Conclusion

In conclusion, the airline reservation system plays a crucial role in facilitating seamless and efficient flight bookings for customers. However, it is essential to recognize the limitations of the existing system and identify areas for improvement. By addressing these limitations and implementing proposed enhancements, the airline reservation system can provide a superior user experience, streamline operations, and stay competitive in the dynamic airline industry.

Key areas of focus for enhancement include user-friendly interfaces, mobile applications, real-time flight updates, seamless integration with external systems, accessibility features, personalization options, self-service capabilities, intelligent fare management, social media integration, and advanced analytics and reporting. These enhancements aim to optimize the booking process, offer personalized services, improve accessibility, provide real-time information, and empower users to manage their bookings efficiently.

8. Bibliography

- www.Google.com
- www.youtube.com
- www.javatpoint.com
- www.apache.org
- www.w3schools.com
- www.php.net

9. Annexures

- **User Interface Mockups:** Visual representations or wireframes of the proposed user interface designs for different screens and functionalities within the reservation system.
- **Data Flow Diagrams:** Diagrams that illustrate the flow of data and information between various components, modules, and external systems within the reservation system.
- **Database Schema:** A schema or diagram showcasing the structure and relationships of the database tables, entities, and attributes used in the reservation system.
- **Use Case Scenarios:** Detailed use case descriptions or scenarios that outline the interactions between different actors (users, administrators, system) and the system functionalities within the airline reservation system.
- **Sample Reports:** Examples of reports or analytics generated by the system, such as sales reports, booking trends, or occupancy rates, to demonstrate the system's reporting capabilities.
- **Integration Specifications:** Documentation or specifications outlining the protocols, APIs, or data formats required for integrating the reservation system with external systems, such as payment gateways or flight management systems.
- **Test Cases:** A set of predefined test cases and expected results to validate the functionality and performance of the reservation system during the testing phase.