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# Flight Ticket Booking And Cancellation System

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*Abstract –* **Airline reservations system is an integrated passenger processing system, including inventory, fares, ticket-less operations and credit card transactions. All communications are via TCP/IP network protocol enabling the using of both intranet and internet communications worldwide.The solution includes several standard items, which are combined to provide an integrated solution with interfaces to other business systems. The system is based on open architecture, using industry standard equipment and software. The open nature of VRS allows the addition of new systems and features, ensuring that the VRS system can be adapted to keep up with the changing requirements of the airline business. The VRS suite of software includes the functions of Reservations, Flight inventory, Fares, Ticketing-Ticket less module. All user/agents are allocated a SINE code, which is used during sine-on and then appended to all transactions carried out by the agent for security purpose. Different security levels may be assigned so that different agents can access different areas of the system and also different records in the case where a travel agent is only allowed to review PNRs that have been created by that agency. Flights may be entered as far ahead as required without limitation using the flight inventory GUI. Native transactions support reservations up to 1 year ahead. The flights may be specified within a particular date range and may be used to display different classes of service and different fares within a specific seating class. Sell from availability when it has been displayed and a simple entry is used to sell seats. A direct sale may be made using a long hand entry if the flight details are fully known.**

*Keywords* **-Login, Reservation, Admin, User, SQL Connection, Operations, Flights, Domestic and International Flights, Reservation, Ticket Review, Tickets Cancellation, Add Flight, Reports.**

## I. INTRODUCTION

The Airline Reservation System (ARS) is a computerized system used to store and retrieve flight-related information, manage passenger reservations, and streamline airline operations. It enables travellers to book flights, check seat availability, and manage their itineraries efficiently. Airlines and travel agencies worldwide rely on these systems to enhance customer experience and optimize business processes. With advancements in technology, modern ARS integrates web-based platforms, cloud computing, and artificial intelligence to provide real-time data and improve service delivery. The primary objective of this system is to automate airline operations, reduce manual workload, and ensure a seamless booking process for customers.

Airline reservation systems have evolved significantly from manual booking methods to sophisticated digital platforms. The first computerized reservation systems emerged in the 1960s, offering airlines a structured approach to managing passenger bookings. Today, these systems have

expanded to support dynamic pricing, real-time seat availability, and multi-airline coordination through Global Distribution Systems (GDS).

With the increasing demand for air travel, an efficient airline reservation system plays a crucial role in ensuring smooth and hassle-free experiences for passengers. The system must be able to handle high volumes of data while maintaining security and accuracy. Modern ARS solutions integrate artificial intelligence, predictive analytics, and cloud computing to improve operational efficiency and customer satisfaction. Additionally, the adoption of mobile-friendly platforms allows travellers to make bookings conveniently from their smartphones, increasing accessibility and ease of use.

This document explores the development and implementation of an advanced airline reservation system, focusing on its features, technological infrastructure, and benefits to airlines and passengers. By leveraging state-of-the-art technology, the proposed system aims to enhance user experience, optimize airline management, and ensure seamless connectivity across multiple platforms.

## II. LITERATURE SURVEY

Several studies have explored the evolution and impact of airline reservation systems. Early reservation systems were manual and required extensive human intervention. The introduction of Computerized Reservation Systems (CRS) in the 1960s, such as the SABRE system developed by American Airlines, revolutionized the airline industry. CRS later evolved into Global Distribution Systems (GDS), which facilitated ticket bookings across multiple airlines and travel agencies.

Modern airline reservation systems leverage cloud computing and AI-powered chatbots to enhance user experience. Research has shown that integrating blockchain technology can improve security and transparency in ticket transactions. Studies also highlight the role of machine learning in predicting flight demand and optimizing pricing strategies. Furthermore, the shift towards mobile applications has significantly increased customer engagement and accessibility.

Additionally, a study by Wang et al. (2020) highlights the role of big data analytics in forecasting airline demand and adjusting pricing strategies dynamically. This ensures optimal seat utilization and maximizes airline revenue. Another research by Smith & Lee (2021) explores the impact of online travel agencies (OTAs) on direct airline bookings, showing that airlines must continuously enhance their own booking platforms to remain competitive.

Security concerns have also been a focus of research, with multiple studies emphasizing the need for enhanced encryption techniques and biometric authentication to prevent fraud and unauthorized access. According to recent literature, biometric verification methods, such as facial recognition and fingerprint scanning, have shown promising results in increasing both security and passenger convenience.

Another significant development is the integration of chatbots and virtual assistants powered by AI, which improve customer service efficiency. A report by Johnson et al. (2022) discusses how AI-driven chatbots can handle up to 80% of customer inquiries, reducing operational costs and response times for airline companies.

## III. PROPOSED METHODOLOGY

Using the distributed technology we can handle these problems easily. In general a distributed process means that a program in execution makes use of resources in other machine. The two technologies for distributed processing available are J2EE and .NET. In the Airline reservation system J2EE is used for managing distributed systems. So that even if the Airline system has lot of branches and they are located at different places, we can handle the management of service and guarantee.

The proposed system for the problem is Airline reservation system, a web based system that allows online reservations. The system is divided into three layers namely presentation layer, business

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layer and data layer. The presentation layer is at the client side. At server side, business layer and data layer reside.

The system requires a server side technology for its implementation. J2EE platform is chosen for implementing the system. At server side   Servlet plays the role for business layer and JDBC for the data layer.

## IV. SYSTEM ARCHITECTURE
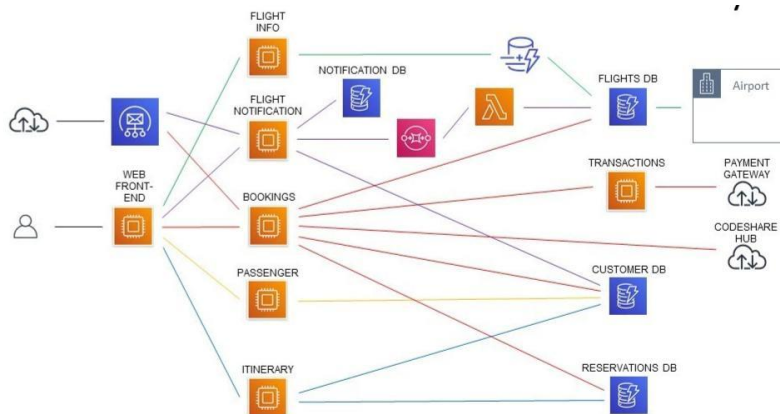


## V. METHODOLOGY

OMT consists of building a model of an application domain and then adding implementation details to it during the design of a system. The Methodology has the following stages:

1. **Analysis**: The analysis model is a concise, precise abstraction of what the desired system must do, not how it will be done.

2. **System Design**: The system designer makes high-level decisions about the overall architecture, during system design; the target system is organized into subsystems based on both the analysis structure and the proposed architecture.

3. **Object Design**: The object designer builds a design model based on the analysis model but containing implementation details. The designer adds details to the design model in accordance with the strategy established during system design.

4. **Implementation**: The object classes and relationships developed during object design are finally translated into a particular programming language, database, or hardware implementation.

The OMT methodology uses three kinds of models to describe a system.

1. **Object Model**: The object model describes the static structure of the objects in a system and their relationships. The object model contains object diagrams.

2. **Dynamic Model**: The dynamic model describes the aspects of a system that change over time. The dynamic model contains state diagram

3. **Functional Model**: The functional model describes the data value     transformations within a system. The functional model contains data flow diagrams.
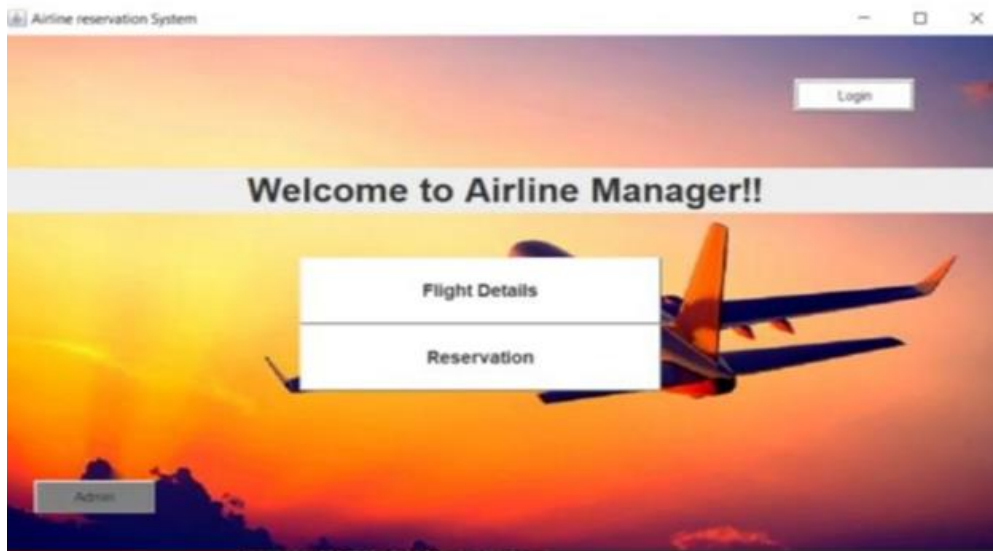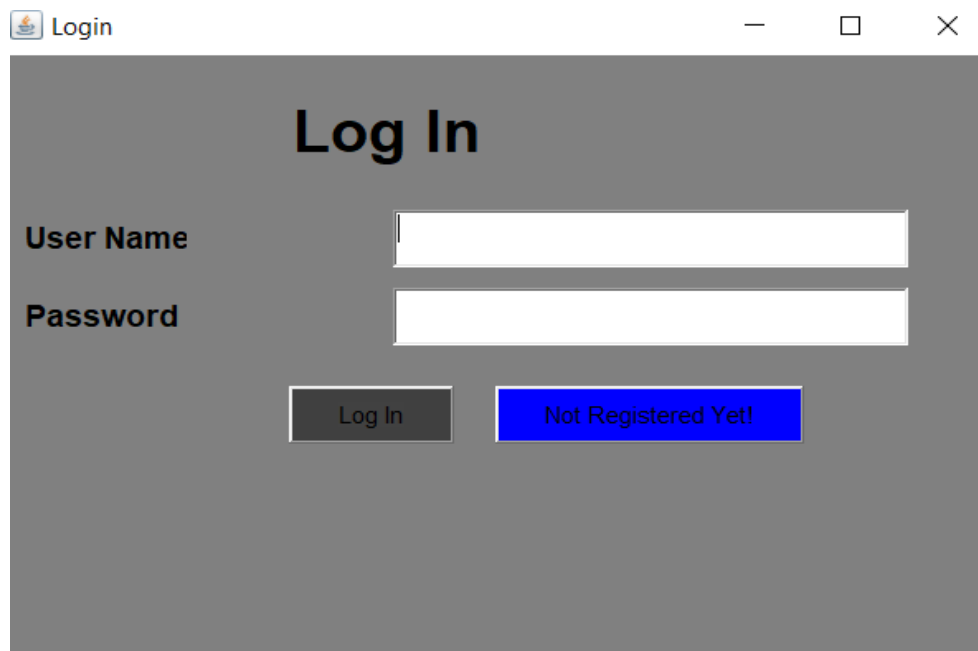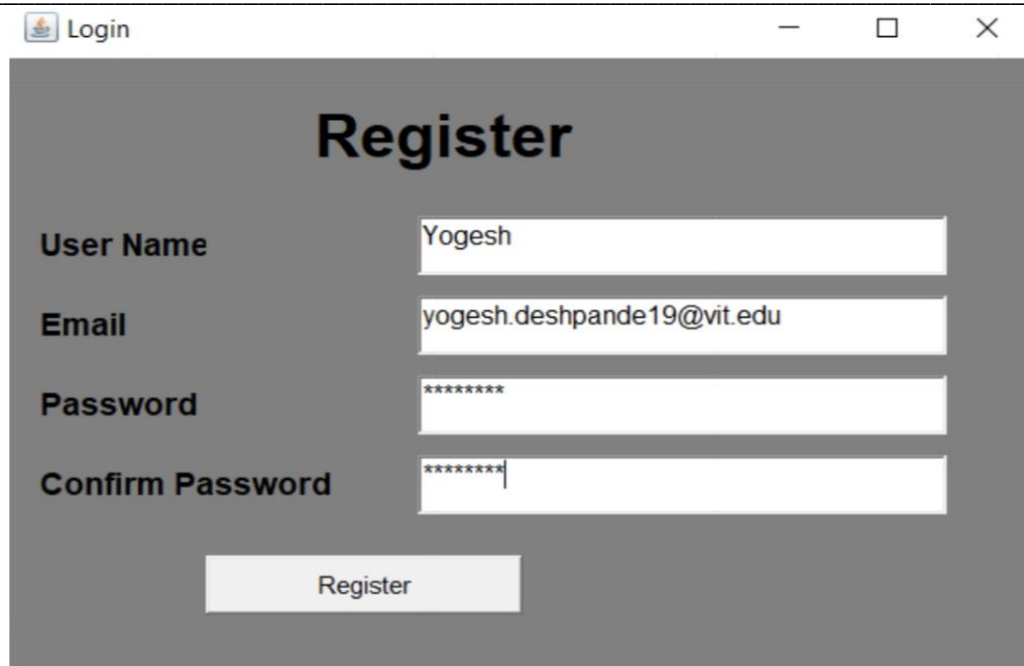
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**R**ESULT

A. **User:**



Fig 1. Main Page

Fig 2. Login Page
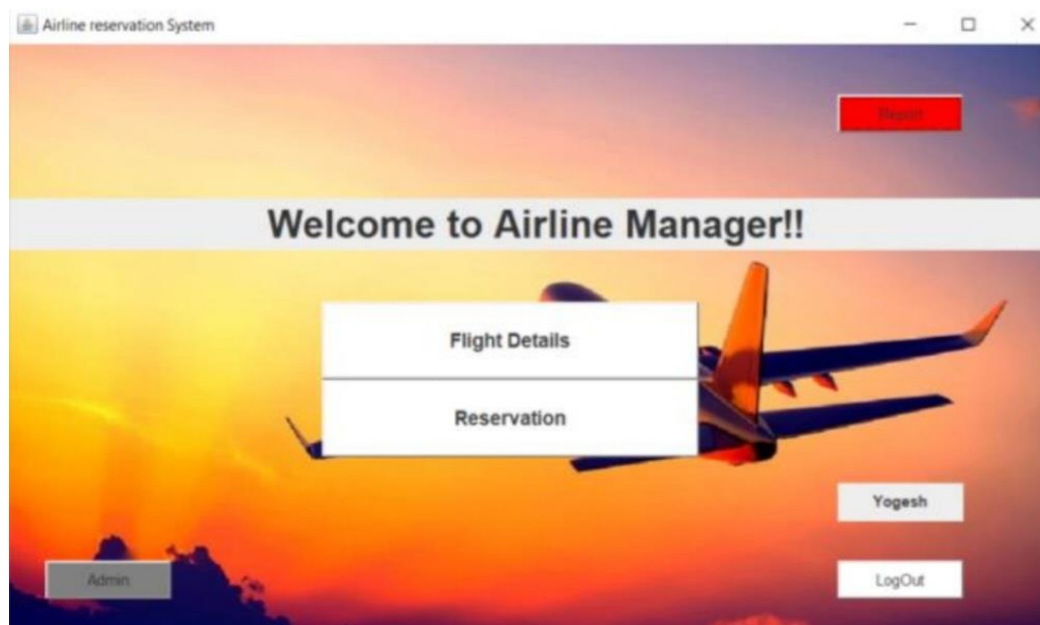
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Fig 3. Registration Page



Fig 4. Logged In

Fig 5. Flight Details
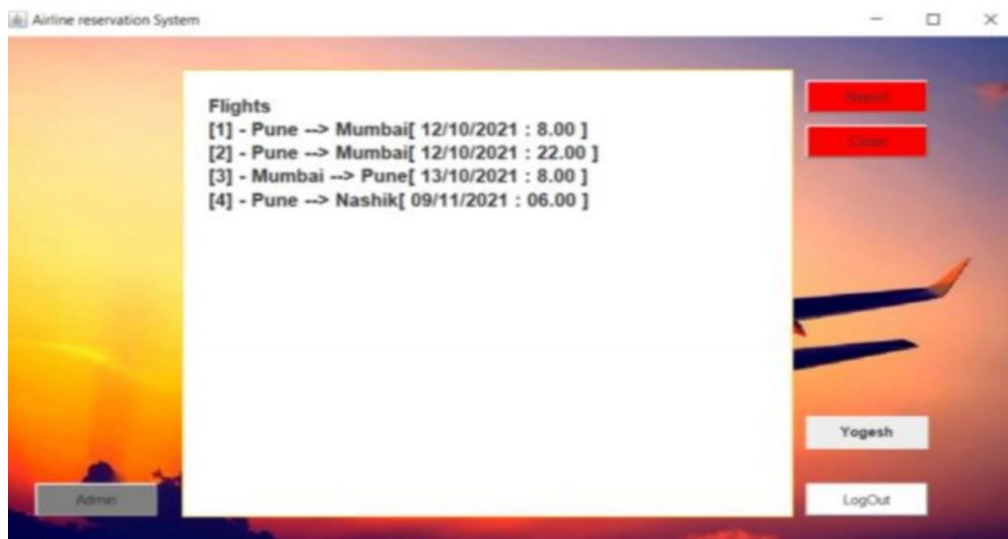


Fig 6. Domestic Flights

Fig 7. Reservation



Fig 8. Booking Ticket

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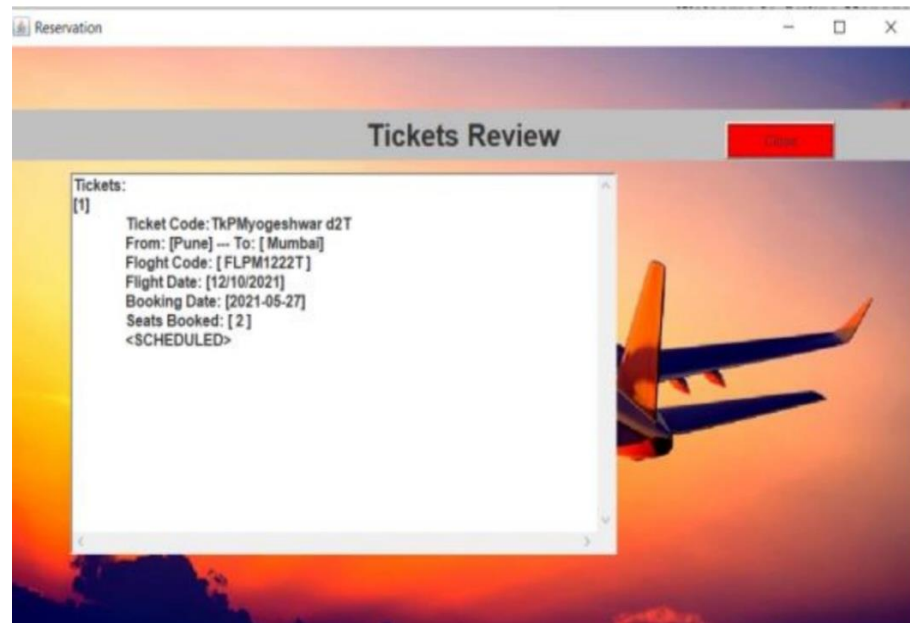*Science & Technology" – Organized by RKCE*
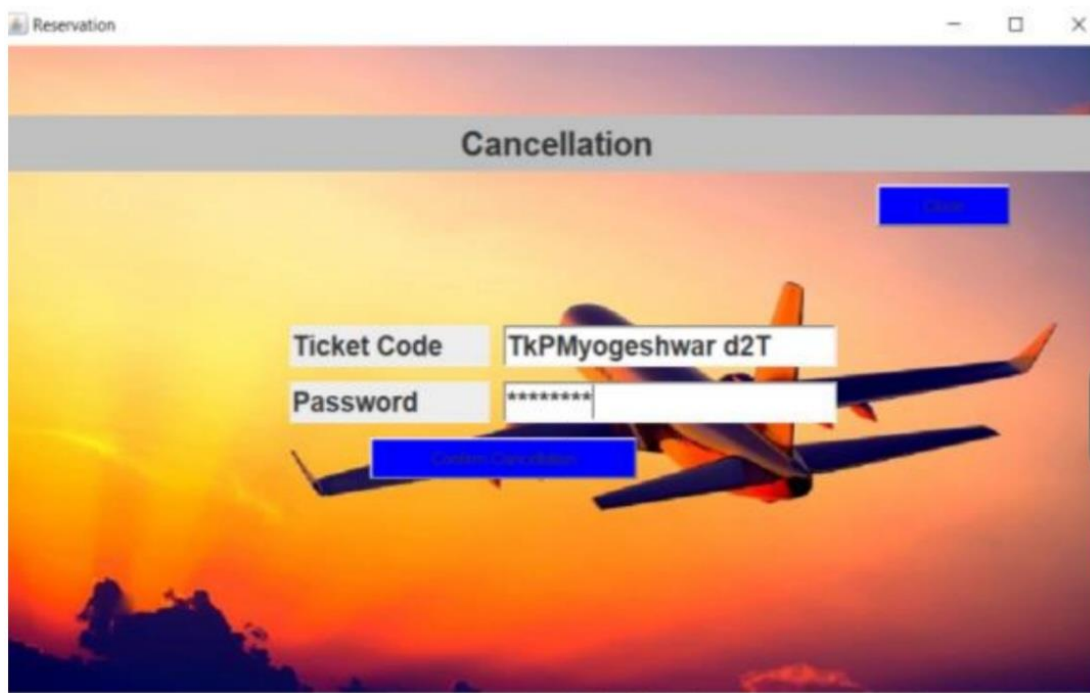
Fig 9. Ticket Review
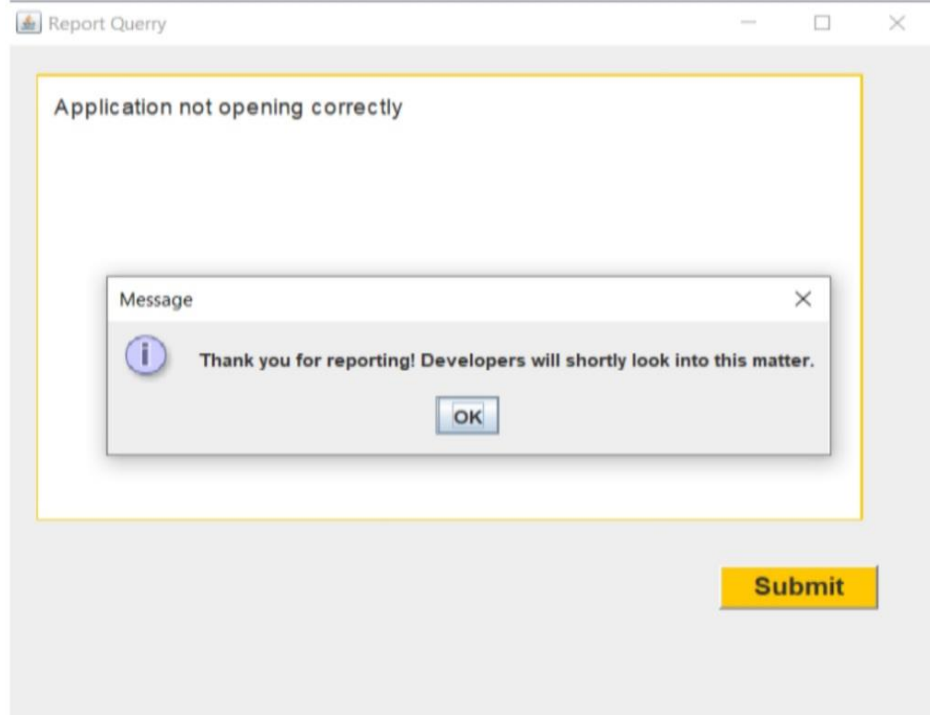


Fig 10. Ticket Cancellation

Fig 11. Reporting Issue

## VI. CONCLUSION

In conclusion, airline reservation systems play a crucial role in modern air travel by streamlining the booking process, managing flight schedules, handling passenger data, and ensuring smooth operations. These systems enhance efficiency, improve customer experience, and optimize airline revenue through features like real-time seat availability, pricing adjustments, and seamless integration with global distribution network.

sAs technology evolves, airline reservation systems continue to improve with artificial intelligence, automation, and cloud computing, making air travel more accessible and convenient. However, challenges such as cybersecurity threats, system downtime, and data management must be addressed to ensure reliability and customer satisfaction.Ultimately, a well-designed airline reservation system is essential for both airlines and passengers, providing a seamless and efficient travel experience.

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