Airline Management System - Project Description

1. Introduction

The Airline Management System is a relational database project designed to manage and streamline airline operations. It enables efficient handling of flight schedules, passenger bookings, employee assignments, baggage tracking, and airline details. This system ensures data integrity, reduces redundancy, and improves decision-making for airline companies.

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2. Objectives

Flight Management: Store and track flight details, schedules, and statuses.

Passenger Management: Maintain passenger information and travel history.

Ticket Booking System: Manage ticket reservations, seat allocation, and pricing.

Employee & Crew Management: Assign pilots, flight attendants, and ground staff.

Baggage Handling: Track baggage associated with each passenger.

Real-time Queries: Retrieve flight details, passenger lists, and booking reports efficiently.

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3. Features

a) Flight Management

Stores flight number, departure & arrival times, airport details, and status.

Tracks flights by airline and schedule changes.

b) Passenger Management

Stores personal details, passport number, nationality, and travel history.

Links passengers with ticket bookings.

c) Ticket Reservation System

Allows passengers to book, modify, and cancel tickets.

Stores details like seat number, ticket price, and travel class (Economy, Business, First Class).

d) Employee & Crew Management

Stores pilot, flight attendants, and ground staff details.

Links employees to flights for crew assignment.

e) Baggage Tracking

Stores baggage weight and passenger details.

Links baggage to specific flights and passengers.

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4. Technologies Used

Database: MySQL / PostgreSQL / SQL Server

Query Language: SQL (Structured Query Language)

Optimization: Indexing, Stored Procedures, Views

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5. Use Cases

1. Passenger books a flight → System assigns a ticket, seat, and baggage allowance.

2. An airline schedules a new flight → System updates the database with route details.

3. A flight crew is assigned to a flight → Employees are linked to the flight.

4. A passenger wants to check flight details → Queries retrieve departure & arrival times.

5. An administrator wants to see airline performance → Reports on flight delays & bookings.

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6. Benefits

✅ Improved Efficiency – Automates flight scheduling and ticketing.
✅ Data Accuracy – Reduces errors in passenger and flight records.
✅ Faster Retrieval – Queries optimize flight searches and reports.
✅ Scalability – Can be expanded for international airlines and large passenger volumes.

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7. Conclusion

The Airline Management System is a comprehensive database solution for managing airline operations. By integrating flight management, passenger bookings, employee tracking, and baggage handling, this system enhances efficiency, reduces costs, and improves customer service for airline companies.

Let me know if you need modifications or more details!