

SQL Project Report: Airline Reservation System

Submitted By: Alok Kumar

Project Title: Airline Reservation System

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1. Introduction

This project is a database management system for an Airline Reservation System built using MySQL. It manages flight schedules, seat bookings, and customer data efficiently using SQL queries, views, and triggers.

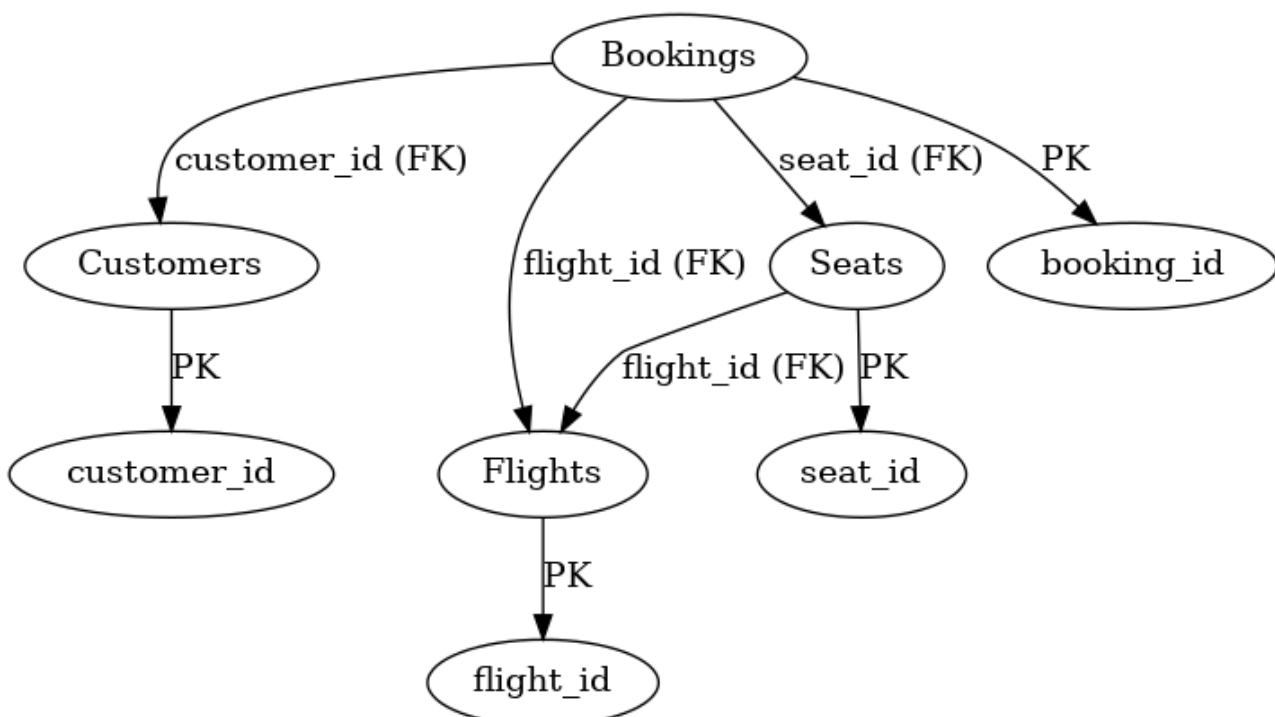
2. Objective

To design a SQL-based database system that allows airline companies to manage flight data, seat bookings, and customer records with the help of optimized queries and relational integrity.

3. Tools Used

- MySQL Workbench
- ER Diagram Tool: Graphviz / dbdiagram.io
- FPDF for report generation

4. ER Diagram



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5. Database Tables

- Flights: Contains flight details (flight_id, airline_name, route, times)
- Customers: Stores passenger info (customer_id, name, contact)
- Seats: Records seat numbers linked to flights
- Bookings: Tracks who booked which seat on which flight

6. SQL Features Implemented

- Primary and Foreign Key Constraints
- CHECK Constraints for booking status
- Triggers to auto-update seat availability on booking cancellation
- Views to show available flights
- Sample queries for flight search and booking summary

7. Sample Queries

- `SELECT * FROM Flights;`
- `SELECT seat_number FROM Seats WHERE is_booked = FALSE;`
- JOIN queries to display customer bookings
- Trigger for auto-cancel seat release

8. Conclusion

This Airline Reservation System project provides a strong foundation for building real-world flight booking systems. It uses normalized schema, constraints, and triggers to maintain data integrity and make the system efficient.