Project Report: Airline Reservation System Using SQL

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# 1.Introduction

project is about creating an Airlines Reservation System using SQL. It is designed to manage the booking of flight seats by storing and handling the data such as flights, passengers, and payments. The system helps airlines keep track of available seats and organize passenger information by using SQL. This project applies real-world database concept like tables, relationships, and stored procedure to make the system efficient.

# 2. Objectives

1.Design schema: Flights, Customers, Bookings, Seats.

2.Normalize schema and define constraints.

3.Insert sample flight and booking records.

4.Write queries for available seats, flight search.

5.Add triggers for booking updates and cancellations. 6.Generate booking summary report

# 3. System Design

The system uses multiple relational tables:  
• Airports: Airport code and location  
• Aircrafts: Plane models and capacity  
• Flights: Flight schedule and route  
• Passengers: Customer details  
• Reservations: Seat bookings  
• Payments: Fare tracking

# 4. Tools & Technologies Used

- MySQL   
- MySQL Workbench   
- SQL (DDL, DML, Stored Procedures)

# 5. Steps Involved in Building the Project

1. understanding the problem

Identifying the key requirements of an airline system like passengers, flights, seat booking and payments.

2. Database design

Decide on tables needed

Passengers, flights, reservations, and payments.

3. Creating database and tables

Writing SQL create table statements

Make sure all tables are linked properly.

4. Inserting sample data

Using SQL insert into statement to insert data into specific tabular columns of respective table.

5. write stored procedure

Check if the seat is already booked. If not, insert into Reservations and Payments.

Return status using an OUT parameter

6. Sample Queries

SELECT seat\_number FROM Reservations WHERE flight\_id = 101 AND status = 'Confirmed';  
 CALL BookSeat (101, 202, '12A', 5500.00, @status);  
 SELECT @status;

# 6. Conclusion

This SQL-based project demonstrates how a relational database can effectively manage airline bookings. Using procedures and constraints, it enforces business rules and maintains data integrity. The system is scalable and can be extended with a user interface or cloud deployment.