The project description prepared by

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Database Project Requirements

You asked to deliver hard copy document included the following points:

R#1

- **Business and System Requirements Specification**
- **Define Stakeholder and their Requirements**

R#2

- **Design your ERD for your System according to the Functional requirements**
- **Deliver your ERD as a A3 hard copy**

R#3

- **Design your DB schema**
- **Document all of your data dictionary**

R#4

- **Make Different Reports using Select Queries DQL Define and print them and add screenshot of the output**
- **Print their corresponding Relational Algebra**
- **Use Aggregate, Set Operators, Conditions, Joins ,……..etc.**

#Bonus

- **Make A GUI implementation for your system to include the ALL DML statements**
- **You were asked to enhance your GUI or DB as your system required.**
- **Make some views and Synonyms.**
- **Apply user control to your DB**

#Bonus

- **Make A GUI implementation for your system.**
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· Make some views and Synonyms.
· Apply user control to your DB

You are asked to print your project documents in discussion day with cover page with a table includes your Team Leader, team members.

Project Requirements Description

1. Airline Reservation System

Project Overview:

An advanced airline reservation system that allows users to book flights, manage reservations, and track flight statuses. The system must support real-time flight availability, secure transactions, and flight tracking.

Functional Requirements:

1. **Passenger Management**:
    - Register new passengers with personal details (name, email, phone number, etc.).
    - Update passenger information.
    - View passenger details.
2. **Flight Management**:
    - Add new flights with details like origin, destination, departure/arrival times, and available seats.
    - Update or cancel flights.
    - Check flight status (scheduled, delayed, canceled, departed, etc.).
    - Track the number of available seats for each flight.
3. **Booking Management**:
    - Passengers can search for available flights based on destination and travel dates.
    - Book flights, assign seats, and generate booking confirmation.
    - Manage bookings: cancel reservations or update seat assignments.
    - Generate payment records linked to bookings.
4. **Payment Processing**:
    - Process payments for bookings (support multiple payment methods).
    - Track payment history and generate receipts.
5. **Reporting**:
    - Generate reports on flight occupancy, booking statuses, and revenue.
    - View real-time seat availability for flights.

Non-Functional Requirements:

1. **Scalability**: The system should handle a large number of simultaneous bookings and queries.
2. **Security**: Use encryption for sensitive data like payment details and passenger information.
3. **Performance**: Search results for available flights should be returned in less than 3 seconds.
4. **Reliability**: The system must maintain up-to-date seat availability in real-time to avoid overbooking.
5. **Availability**: The system should have 99.9% uptime for booking and flight management functions.

Advanced Features:

- Use **indexes** for faster queries on flight availability.
- Implement **triggers** to automatically change the flight status when the departure time passes.
- Design **stored procedures** for efficient booking management and payment processing.