**Subject area analysis**

The future database is designed for an airline company to efficiently manage its flights, reservations, passengers, crew, and airport operations. It will facilitate ticketing, flight scheduling, luggage tracking, crew assignments, and payment processing.

**Stored Information in the Future Database**

***1*.** **Passenger & Reservation Management**

* Passenger: Stores customer details such as name, contact information, and loyalty status.
* Reservation: Tracks booking details, including the passenger, flight, and payment information.
* Tickets: Contains information on seat class, refund eligibility, and links to reservations.
* Luggage: Stores baggage details and links them to a specific ticket.
* Payment: Records the payment method and links it to a specific reservation.

***2.*** **Flight & Crew Management**

* Flight: Maintains data on departure and arrival times, linked to an aircraft.
* Crew: Stores staff details, such as pilots, flight attendants, and their certifications.
* Flight\_Crew: Manages the many-to-many relationship between flights and assigned crew members.

***3***. **Airport & Aircraft Operations**

* Airport: Stores airport details, including location and runway information.
* Flight\_Airport: Represents the many-to-many relationship between flights and airports.
* Aircraft: Stores data on each aircraft’s model, registration number, and maintenance schedule.
* Aircraft\_Maintenance: Tracks maintenance tasks for each aircraft.

This database will provide the airline with:

* Efficient reservation management.
* Optimized crew assignments.
* Real-time flight tracking.
* Streamlined luggage tracking.
* Accurate financial records

**Constraints:**

* date\_of\_reservation >= CURDATE (CURDATE = current date)
* payment\_method can only be by Credit Card, Debit Card, Cash, QR payment
* luggage\_weight <= 50 kg
* airport\_name C(100)
* arrival\_time >= CURDATE

**Potential queries**

1. Find all payments for a reservation.
2. Calculate total revenue from payments.
3. Count payments by method (credit card, cash, etc.).
4. List reservations without payments.
5. Find passengers who paid more than a certain amount.
6. Show payment details with reservation and flight info.
7. List flights with unpaid reservations.
8. Find the most used payment method.
9. Show payments made in the last 30 days.
10. Total payments per passenger**.**