Air Cargo Analysis Project Report

Database and Setup

```
CREATE DATABASE AirCargo;
USE AirCargo;
```

Table Structures

customer

```
CREATE TABLE customer (
   customer_id INT PRIMARY KEY,
   first_name VARCHAR(50),
   last_name VARCHAR(50),
   date_of_birth DATE,
   gender VARCHAR(10)
);
```

passengers_on_flights

```
CREATE TABLE passengers_on_flights (
   aircraft_id INT,
   route_id INT,
   customer_id INT,
   depart VARCHAR(50),
   arrival VARCHAR(50),
   seat_num VARCHAR(10),
   class_id VARCHAR(20),
   travel_date DATE,
   flight_num VARCHAR(20)
);
```

ticket_details

```
CREATE TABLE ticket_details (
   p_date DATE,
   customer_id INT,
   aircraft_id INT,
```

```
    class_id VARCHAR(20),
    no_of_tickets INT,
    a_code VARCHAR(10),
    price_per_ticket DECIMAL(10,2),
    brand VARCHAR(50)
);
```

routes

```
CREATE TABLE routes (
    route_id INT PRIMARY KEY,
    flight_num VARCHAR(20),
    origin_airport VARCHAR(50),
    destination_airport VARCHAR(50),
    aircraft_id INT,
    distance_miles INT
);
```

SQL Queries and Outputs

- SELECT * FROM passengers_on_flights WHERE route_id BETWEEN 1 AND 25;
- SELECT SUM(no_of_tickets) AS total_passengers, SUM(no_of_tickets * price_per_ticket) AS total_revenue FROM ticket_details WHERE class_id = 'Business';
- SELECT customer_id, CONCAT(first_name, ' ', last_name) AS full_name FROM customer;
- SELECT DISTINCT c.customer_id, c.first_name, c.last_name FROM customer c INNER JOIN ticket_details t ON c.customer_id = t.customer_id;
- SELECT DISTINCT c.first_name, c.last_name FROM customer c INNER JOIN ticket_details t ON c.customer_id = t.customer_id WHERE t.brand = 'Emirates';
- SELECT customer_id FROM passengers_on_flights WHERE class_id = (SELECT class_id FROM passengers_on_flights WHERE class_id = 'Economy Plus' LIMIT 1);
- SELECT IF(SUM(no_of_tickets * price_per_ticket) > 10000, 'Revenue Crossed 10000', 'Revenue Not Crossed') AS revenue_status FROM ticket_details;
- CREATE USER 'new_user'@'localhost' IDENTIFIED BY 'password123';
  GRANT ALL PRIVILEGES ON AirCargo.* TO 'new_user'@'localhost';
  FLUSH PRIVILEGES;

- SELECT class_id, price_per_ticket, MAX(price_per_ticket) OVER (PARTITION BY class_id) AS max_ticket_price_per_class FROM ticket_details;
- CREATE INDEX idx_route_id ON passengers_on_flights(route_id);
- EXPLAIN SELECT * FROM passengers_on_flights WHERE route_id = 4;
- SELECT customer_id, aircraft_id, SUM(no_of_tickets * price_per_ticket) AS total_spent FROM ticket_details GROUP BY customer_id, aircraft_id WITH ROLLUP;
- CREATE VIEW business_class_customers AS SELECT customer_id, brand FROM ticket_details WHERE class_id = 'Business';
- DELIMITER $$
  CREATE PROCEDURE GetLongRoutes()
  BEGIN
  SELECT * FROM routes WHERE distance_miles > 2000;
  END $$
  DELIMITER ;
- SELECT customer_id, SUM(no_of_tickets) AS total_tickets, SUM(no_of_tickets * price_per_ticket) AS total_price FROM ticket_details GROUP BY customer_id;
- SELECT r.aircraft_id, AVG(r.distance_miles) AS avg_distance,
  AVG(passenger_counts.total_passengers) AS avg_passengers
  FROM routes r
  JOIN (
  SELECT aircraft_id, COUNT(DISTINCT travel_date) AS total_departures, COUNT(customer_id) AS total_passengers
  FROM passengers_on_flights
  GROUP BY aircraft_id
  HAVING total_departures > 1
) AS passenger_counts
  ON r.aircraft_id = passenger_counts.aircraft_id
  GROUP BY r.aircraft_id;

End of Project Report