**📘 Day 52 – SQL Challenge**

**Dataset: Airline Bookings & Flights**

**Passengers**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **PassengerID** | **Name** | **Country** | **JoinDate** | **LoyaltyTier** |
| 1 | Alice | USA | 2021-01-01 | Gold |
| 2 | Bob | India | 2021-03-10 | Silver |
| 3 | Charlie | UK | 2022-02-20 | Bronze |
| 4 | David | Canada | 2022-06-15 | Silver |
| 5 | Emma | India | 2023-01-05 | Gold |

**Flights**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FlightID** | **FlightNumber** | **Origin** | **Destination** | **FlightDate** | **Distance** |
| 101 | AI101 | DEL | NYC | 2023-01-10 | 7300 |
| 102 | AI102 | NYC | DEL | 2023-01-15 | 7300 |
| 103 | AI201 | LON | TOR | 2023-02-01 | 5600 |
| 104 | AI301 | DEL | LON | 2023-02-20 | 6700 |
| 105 | AI401 | TOR | DEL | 2023-03-01 | 7200 |

**Bookings**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **BookingID** | **PassengerID** | **FlightID** | **BookingDate** | **Status** | **Price** |
| 1 | 1 | 101 | 2023-01-05 | Confirmed | 1200 |
| 2 | 2 | 101 | 2023-01-07 | Cancelled | 0 |
| 3 | 3 | 103 | 2023-01-25 | Confirmed | 900 |
| 4 | 4 | 104 | 2023-02-15 | Confirmed | 1100 |
| 5 | 5 | 105 | 2023-02-25 | Confirmed | 1500 |
| 6 | 1 | 102 | 2023-01-12 | Confirmed | 1250 |
| 7 | 2 | 104 | 2023-02-18 | Confirmed | 1050 |
| 8 | 3 | 105 | 2023-02-28 | Cancelled | 0 |
| 9 | 5 | 101 | 2023-01-09 | Confirmed | 1300 |
| 10 | 4 | 103 | 2023-01-30 | Confirmed | 950 |

**❓ Day 52 Questions (Intermediate → Advanced)**

1. **Revenue by Route**  
   Calculate total confirmed revenue per **Origin-Destination pair**.
2. **Top Passengers by Spend**  
   List the top 3 passengers with the highest total confirmed spend.
3. **Cancellation Rate**  
   Find the percentage of cancelled bookings per route.
4. **Average Ticket Price by Loyalty Tier**  
   Compute the average confirmed ticket price for each loyalty tier.
5. **Monthly Revenue Trends**  
   Show monthly confirmed revenue and compare with previous month using LAG.
6. **Passenger Flight Count**  
   Find passengers who booked more than **2 confirmed flights**.
7. **Most Frequent Route**  
   Rank routes by number of confirmed bookings.
8. **Window Function – Booking Timeline**  
   For each passenger, show bookings along with the previous flight taken (LAG).
9. **Distance Insights**  
   Calculate total miles flown per passenger (sum of distances from confirmed bookings).
10. **Country-Wise Contribution**  
    Show revenue contribution from each passenger country and rank them.

**🎯 Bonus Challenge (Advanced)**

1. **Frequent Flyer Upgrade Eligibility**  
   A passenger is eligible for an upgrade if:

* They booked **≥ 2 flights in the last 90 days**
* AND their **average confirmed ticket price > $1000**  
  Write a query to flag such passengers.