SkyRoutes Profit Lab: Conclusion & Analysis Report

\*\*Project Title\*\*: SkyRoutes Profit Lab: Identifying Profitable Airline Routes

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\*\*Tools Used\*\*: MySQL, Power BI

\*\*Dataset\*\*: AirlineRoutesData.csv

# Overview

As a data analyst at SkyRoutes Airlines, I analyzed the operational and financial performance of flight routes to identify key profitability drivers. The analysis included SQL-based data extraction and Power BI visualizations focused on revenue, cost, occupancy, and profitability across both domestic and international flights.

# Key Findings

## 1. Top 10 Most Frequent Routes

Routes like DEL-BOM, BLR-HYD, and DEL-KOL had the highest number of flights. These high-frequency routes are primarily domestic.

## 2. Average Revenue, Cost, and Profit per Route

Some routes, despite generating high revenue, had lower profitability due to high operational costs. Example: A route might earn ₹5,00,000 in revenue but spend ₹4,90,000 in costs — resulting in very thin profit margins.

## 3. Underperforming Routes

Several routes showed negative average profit, indicating consistent losses. These routes need reevaluation in terms of demand, pricing, or aircraft used.

## 4. Occupancy Rate Analysis

The average occupancy rate across all routes was around X%. Some loss-making routes also had low occupancy (<60%), pointing to poor demand.

## 5. Monthly Profit Trend

Peaks in profitability were observed in Month X and Month Y, likely due to seasonal travel demand. A dip was observed during off-peak months (e.g., monsoon season).

## 6. Domestic vs. International Profitability

Domestic routes had more consistent but smaller profits. International routes had fewer flights but higher profit per flight, indicating better margins.

## 7. Revenue per Minute of Flight

Short-haul routes (under 90 minutes) delivered high revenue per minute. Some long-haul routes had lower revenue-per-minute due to longer durations and higher costs.

# Power BI Dashboard Summary

• Bar Chart: Top 10 profitable routes  
• Map: Visualized origin-destination pairs clearly with spatial patterns  
• Line Graph: Displayed monthly trends in profit per route  
• Gauge Chart: Showed overall average seat occupancy  
• Stacked Column: Compared cost and revenue for each route, highlighting imbalance in low-profit ones  
  
Filters Used:

Aircraft Type  
Flight Month  
Route Code

# Recommendations

• Phase out or restructure routes with consistent negative profitability  
• Boost marketing for routes with low occupancy but potential demand  
• Prioritize short-haul domestic routes with high revenue-per-minute  
• Optimize aircraft usage based on route type — smaller jets for short-haul, efficient long-range planes for international