Aviation Revenue Analytics Hub – Power BI Dashboard

1️⃣ Introduction

The Aviation Revenue Analytics Hub is an interactive Power BI dashboard developed to analyze airline booking and revenue performance. The objective of this project is to transform raw flight booking data into structured insights that support data-driven decision-making.

The dashboard enables analysis across customer demographics, travel classes, airlines, payment methods, and route efficiency.

2️⃣ Dataset Description

The dataset contains flight booking records with the following key fields:

- Booking ID
- Passenger Age
- Age Group (Created Column)
- Travel Class (Economy, Business, Premium Economy)
- Airline
- Departure City
- Arrival City
- Ticket Price
- Distance (KM)
- Payment Method

The dataset was cleaned and transformed using Power Query before building the data model.

3️⃣ Data Cleaning & Transformation

The following preprocessing steps were performed:

- Removed null and duplicate records
- Corrected data types (numeric, text, categorical)
- Created Age Group column for segmentation
- Verified revenue calculations
- Standardized category values

4️⃣ Data Modeling

- Built relationships between relevant fields
- Designed optimized model structure
- Used calculated measures instead of calculated columns where appropriate
- Applied filter context handling for percentage calculations

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5️⃣ Key DAX Measures

Some important DAX measures used in this project:

- **Total Revenue** = SUM(Ticket Price)
- **Total Bookings** = COUNT(Booking ID)
- **Average Ticket Price** = AVERAGE(Ticket Price)
- **Revenue per KM** = DIVIDE([Total Revenue], SUM(Distance))
- **Class % by Age** using filter context manipulation (ALL / ALLEXCEPT)

These measures enable dynamic and interactive analysis.

6️⃣ Dashboard Structure

Page 1 – Revenue Overview

Displays overall KPIs and revenue distribution across travel class, departure city, and payment methods.

Page 2 – Operational Analysis

Focuses on route performance, ticket pricing trends, and revenue segmentation by age group.

Page 3 – Customer Insights

Analyzes customer behavior, class contribution by age, and airline performance comparison.

7️⃣ Business Insights

- Specific age groups generate a higher share of total revenue.
- Premium travel classes contribute significantly to revenue despite lower volume.
- Credit card payments dominate booking transactions.
- Certain cities are major revenue contributors.
- Revenue per KM indicates route efficiency levels.

8️⃣ Limitations

- Dataset is sample-based and not real-time.
- No time-intelligence analysis (monthly or yearly trends).
- No predictive modeling included.

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9 Conclusion

This project demonstrates the ability to build a structured analytical dashboard using Power BI, apply DAX calculations, and extract meaningful business insights from raw aviation booking data. It highlights practical skills in data transformation, KPI design, and dashboard development.