CERTISURED

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Project Report

On

"Aircraft Activity"

Submitted for partial fulfilment of requirement for the award of course of

Full Stack Data Analytics

Submitted by

SHREYAS N

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"Documentation"

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Instructor	**CEO**	**Manager**

Signature with date

PROBLEM STATEMENTS

Data Overview:

Total Airline Operators: Identify the total number of airline operators present in the dataset.

Top Airline Operators: Determine the top 10 airline operators that handled the most airline operations based on the available data.

Publishers and Activity:

Airline Publishers: Identify the total number of airline publishers who are providing information about airline facilities

Top Airline Publishers: Find the top 5 airline publishers who have published data on the most aircraft activity.

Geographical Distribution:

Identify the regions where aircraft activity data is recorded in the dataset.

Flight Types:

Most Operated Flight Type: Determine the type of flight (e.g., domestic, international, cargo) that was operated the most overall.

Regional Flight Types: Analyse which type of flight was operated the most within each specific region.

Aircraft Analysis:

Aircraft Model Count: Count the total number of unique aircraft models that were operated across all regions.

Most Operated Aircraft Type: Identify the type of aircraft (e.g., passenger jet, cargo plane) that was operated the most.

Aircraft Body Types: Determine the various aircraft body types (e.g., narrow-body, wide-body) present in the dataset.

Manufacturers:

Top Aircraft Manufacturer: Identify the aircraft manufacturer that has manufactured the most aircraft represented in the data.

Specific Scenarios:

Specific Aircraft Landing: Analyse a particular scenario where an airline operator in a specific region operated a specific aircraft model, manufactured by a particular company, and the number of times it landed (potentially requires additional details about the data structure).

Heavy Landings: Find the top 10 aircraft models, manufactured by a particular company, that have landed with the heaviest weight.

Airline Operations:

Airline Flight Breakdown: For a particular airline, calculate the number of domestic flights, international flights, and total aircraft operations they conducted.

Manufacturer Focus:

Regional Jet Manufacturers: Identify all the aircraft manufacturers that have produced regional jets in the dataset.

Manufacturer of Boeing 747: Determine the manufacturer of the Boeing 747 aircraft.

Manufacturer of Airbus A320: Determine the manufacturer of the Airbus A320 aircraft.

Importing Necessary Libraries and connecting to My SQL process

IMPORTING NECESSARY LIBRARIES

```
import numpy as np
import pandas as pd
import matplotlib as mpl
import matplotlib.pyplot as plt
import seaborn as sns
import warnings
warnings.filterwarnings('ignore')
```

CONNECTING TO MY SQL

```
import mysql.connector
```

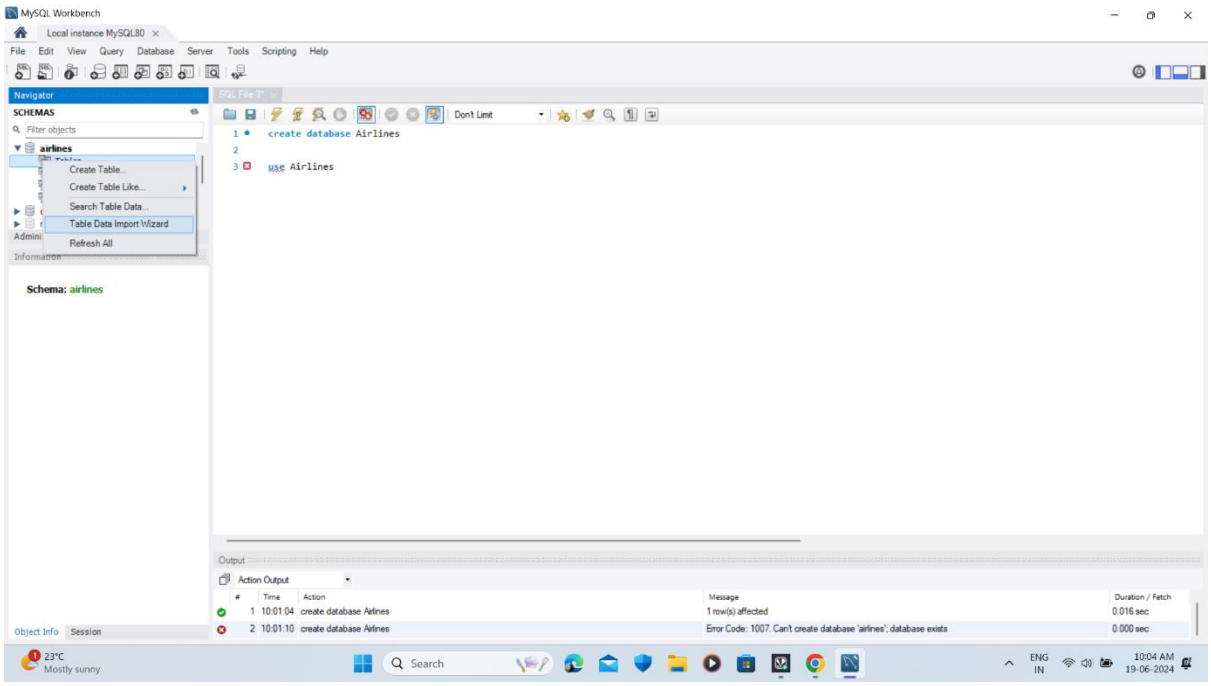
```
conn = mysql.connector.connect(
    host = 'localhost',
    user = 'root',
    passwd = 'Shreyas@1490',
    database = 'Airlines'
)
```

```
query = 'select * from airlines;'
```

Dumping the data to my SQL

For the first we must have to create a database and have to select and use the necessary database Then we have to refresh the schemas and once the database is visible have to right click and select on Table Data Import Wizard to import the data to my SQL

Fig: 1



Importing data process

Fig: 2

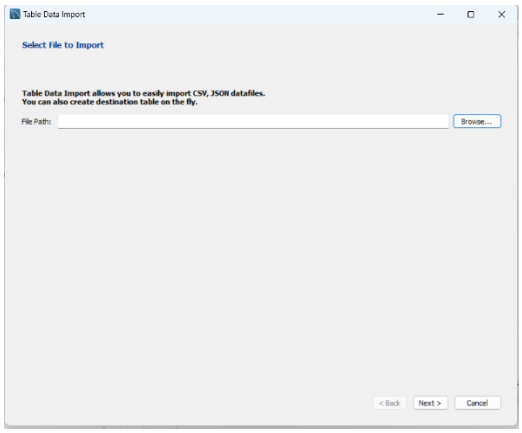


Fig: 3

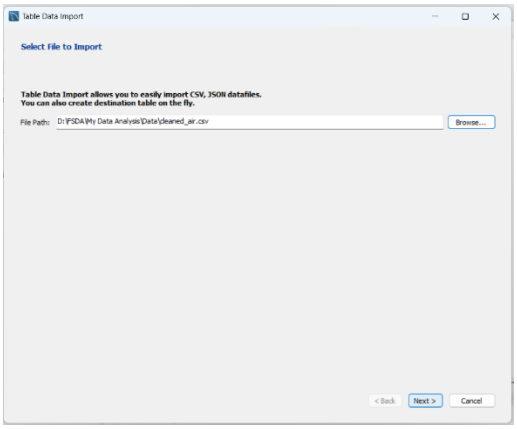


Fig: 4

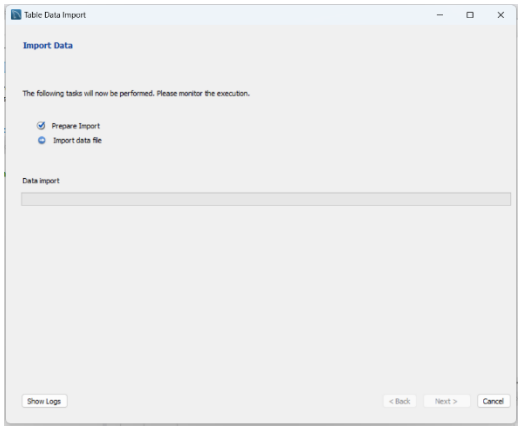


Fig: 5

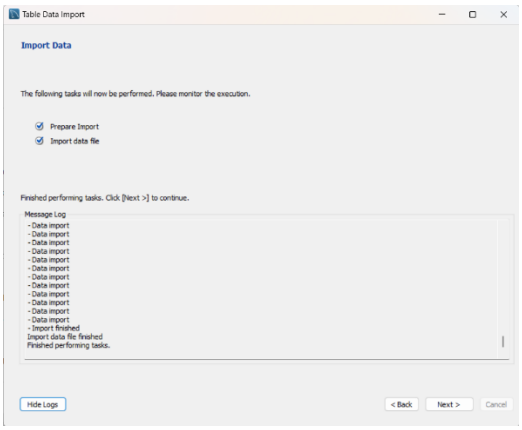
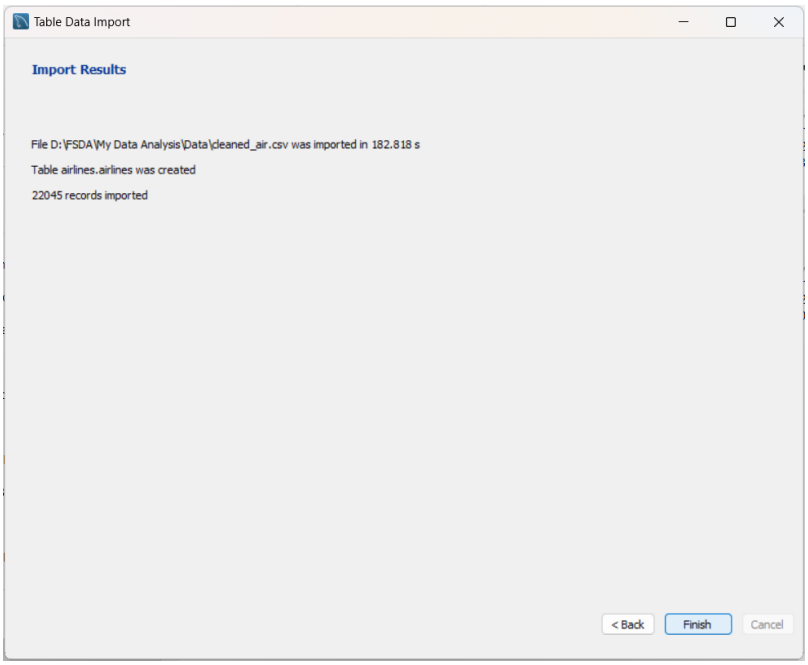


Fig: 6



Now the data has been imported to My SQL

Data Analysis

Data Summary

- Identified there are total 107 Airline Operators in the dataset
- We have listed the Top 10 Airline Operators
- Identified there are total 97 Airline Publishers in the dataset
- We have listed Top 5 Airline Publishers

Flight Activity

- Identified the list of regions in the dataset
- Most Operated Flight Types
- Most Operated Flight Type by Region

Aircraft

- Number of Aircraft Models: (Data not provided)
- Most Operated Aircraft Type: (Data not provided)
- Aircraft Body Types: (List of body types identified in the dataset)

Manufacturers

- Top Aircraft Manufacturer

Detailed Analysis

- Landing Counts by Region, Airline, Aircraft Model, and Manufacturer
- Top 10 Heaviest Landings by Aircraft Model and Manufacturer
- Airline Flight Operations (Domestic, International, Total)

Manufacturer Focus

- Identified and listed the manufacturers who have manufactured Regional Jets
- Boeing 747 Manufacturer: The Boeing Company
- Airbus A320 Manufacturer: Airbus

Graphs Used in the visualization of the current data

Fig: 7

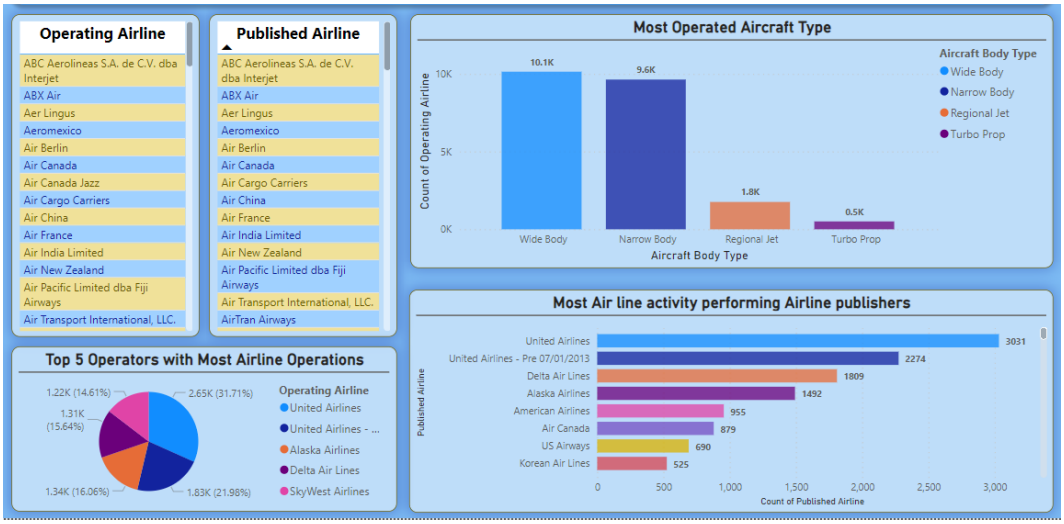


Fig: 8

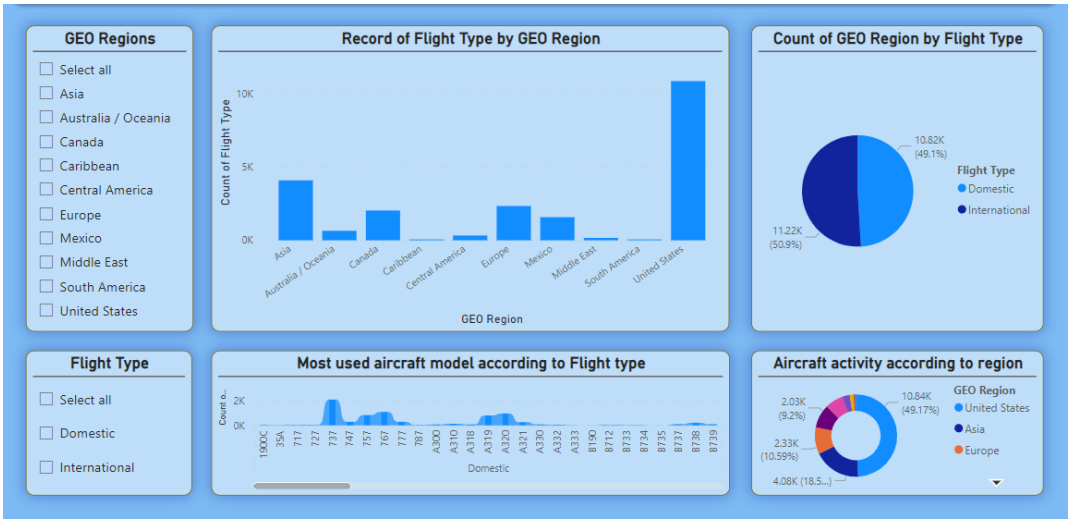


Fig: 9

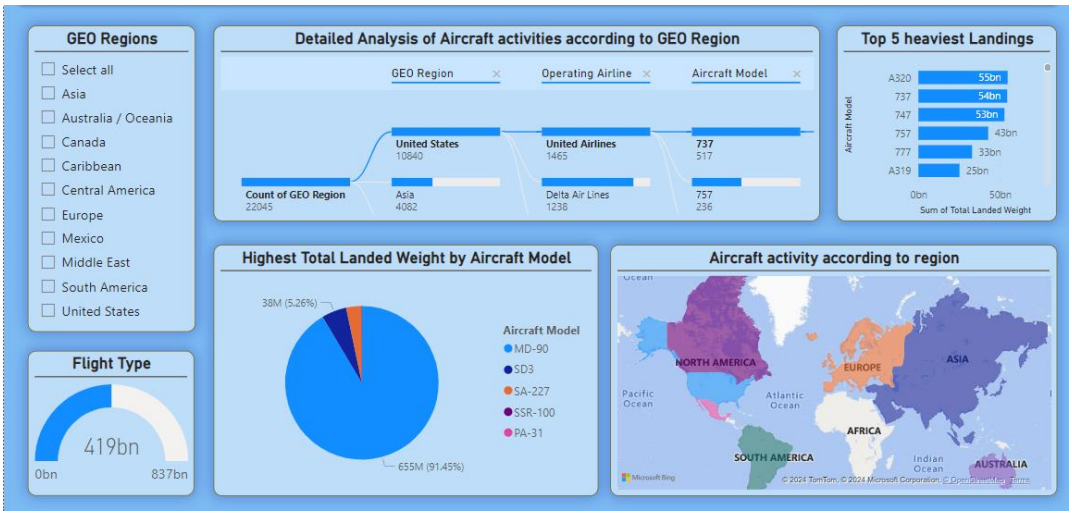


Fig: 10

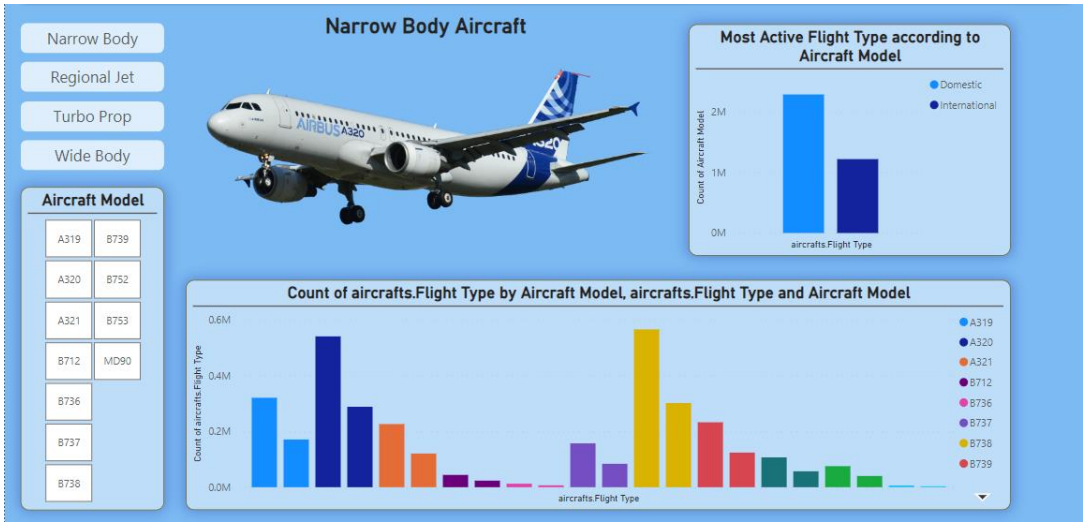


Fig: 11

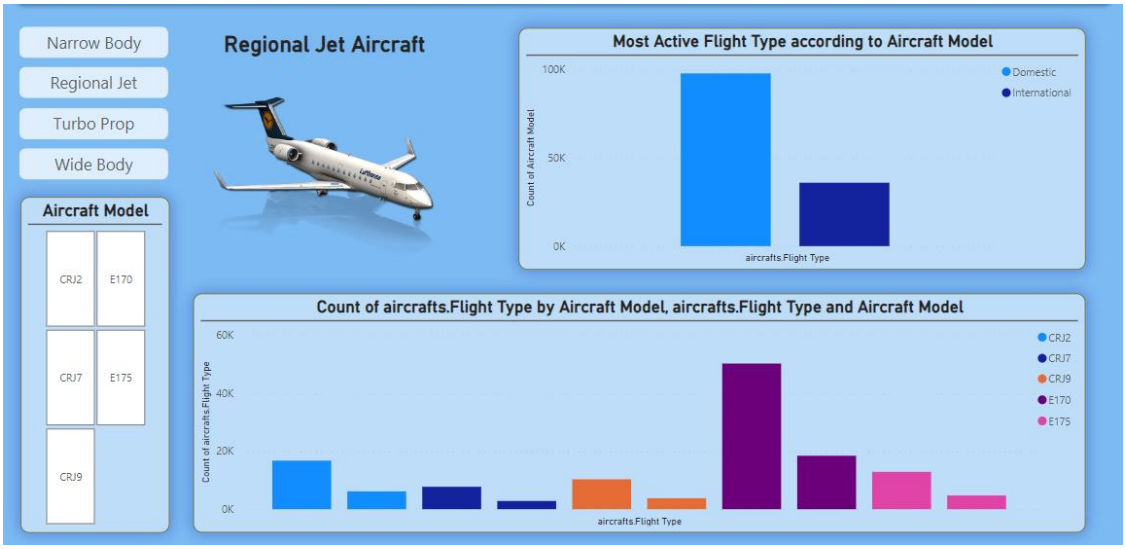


Fig: 12

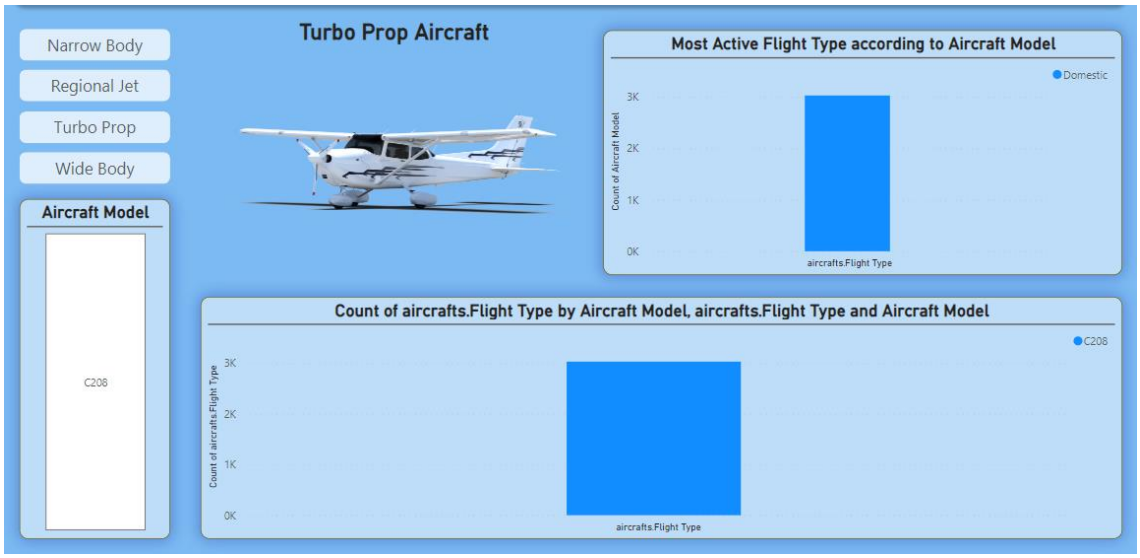
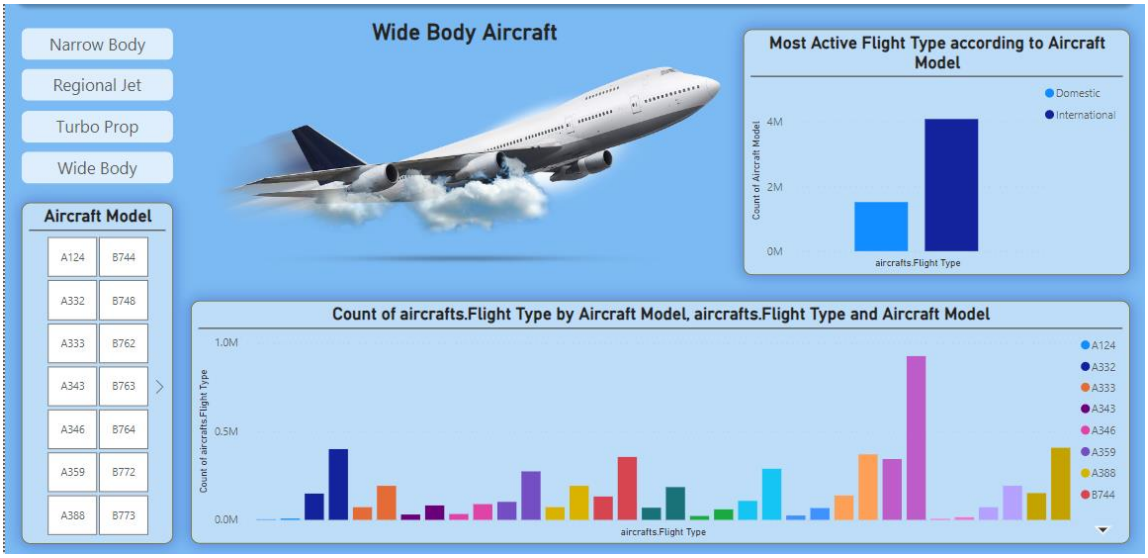


Fig: 13



Summary & Conclusion

Summary

- Airlines: Number of operators, top operators
- Airline publishers: Number of publishers, top publishers by activity
- Flight activity: Regions with activity, most frequent flight type overall and by region
- Aircraft: Number of models operated, most frequent aircraft type, body types
- Manufacturers: Top manufacturer overall, manufacturers of regional jets, 747 and A320 models
- Specific operations: Landings by airline, model, and manufacturer in a specific region
- Weight: Top 10 models with heavy landings
- Flight types: Domestic, international, and total operations by airline

Conclusion

This data offers valuable insights into the airline industry landscape. We can understand which airlines and publishers are dominant, what flight types are most common in different regions, and which aircraft are most frequently used. Additionally, we can identify leading manufacturers and analyse specific operations based on region, model, and manufacturer.