Airlines Flights

AIRLINE FLIGHTS MANAGEMENT

MAKING TRAVEL EASY AND MEMORABLE

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Airline Flights

AGENDA

MYSQL

- Data Collection
- Data Cleaning
- Transformation and Normalization

DashBoard

- Connection to Power BI
- Visualization

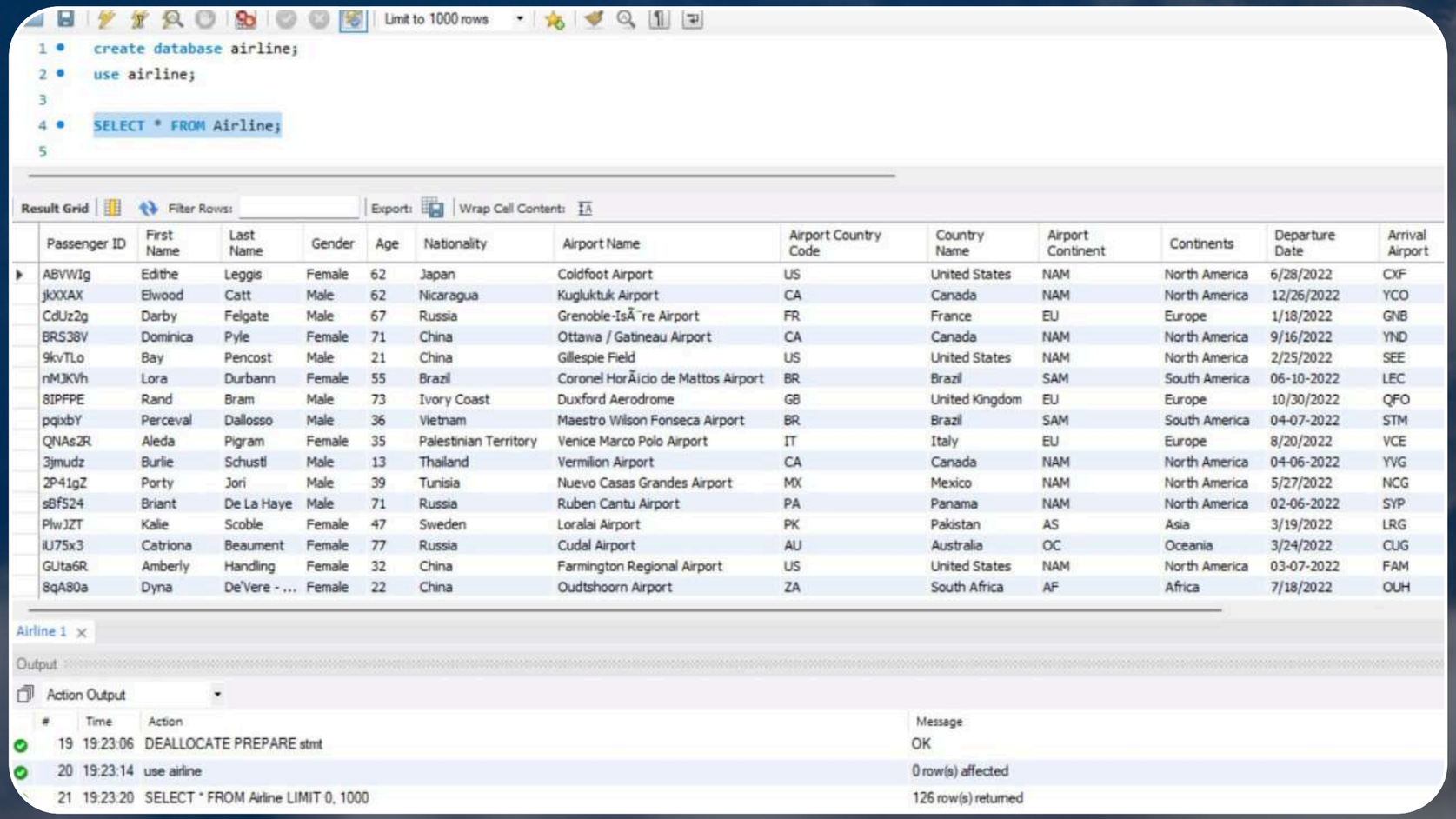
DataSet

Airline Dataset

Navigating the Skies: Exploring Insights from Synthetic Airline Data

https://www.kaggle.com/datasets/iamsouravbanerjee/airline-dataset

IMPORT DATA



```
1 • create database airline;
2 • use airline;
3
4 • SELECT * FROM Airline;
5
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Passenger ID	First Name	Last Name	Gender	Age	Nationality	Airport Name	Airport Country Code	Country Name	Airport Continent	Continents	Departure Date	Arrival Airport
ABVWIg	Edithe	Leggis	Female	62	Japan	Coldfoot Airport	US	United States	NAM	North America	6/28/2022	CXF
jkXXAX	Elwood	Catt	Male	62	Nicaragua	Kugluktuk Airport	CA	Canada	NAM	North America	12/26/2022	YCO
CdUz2g	Darby	Felgate	Male	67	Russia	Grenoble-IsÃ¨re Airport	FR	France	EU	Europe	1/18/2022	GNB
BRS38V	Dominica	Pyle	Female	71	China	Ottawa / Gatineau Airport	CA	Canada	NAM	North America	9/16/2022	YND
9kvTLo	Bay	Pencost	Male	21	China	Gillespie Field	US	United States	NAM	North America	2/25/2022	SEE
nMJKVh	Lora	Durbann	Female	55	Brazil	Coronel HorÃ¡cio de Mattos Airport	BR	Brazil	SAM	South America	06-10-2022	LEC
8IPFPE	Rand	Bram	Male	73	Ivory Coast	Duxford Aerodrome	GB	United Kingdom	EU	Europe	10/30/2022	QFO
pqixbY	Perceval	Dallosso	Male	36	Vietnam	Maestro Wilson Fonseca Airport	BR	Brazil	SAM	South America	04-07-2022	STM
QNAs2R	Aleda	Pigram	Female	35	Palestinian Territory	Venice Marco Polo Airport	IT	Italy	EU	Europe	8/20/2022	VCE
3jmudz	Burlie	Schustl	Male	13	Thailand	Vermilion Airport	CA	Canada	NAM	North America	04-06-2022	YVG
2P41gZ	Porty	Jori	Male	39	Tunisia	Nuevo Casas Grandes Airport	MX	Mexico	NAM	North America	5/27/2022	NCG
sBf524	Briant	De La Haye	Male	71	Russia	Ruben Cantu Airport	PA	Panama	NAM	North America	02-06-2022	SYP
PlwJZT	Kalie	Scoble	Female	47	Sweden	Loralai Airport	PK	Pakistan	AS	Asia	3/19/2022	LRG
iU75x3	Catriona	Beaument	Female	77	Russia	Cudal Airport	AU	Australia	OC	Oceania	3/24/2022	CUG
GUta6R	Amberly	Handling	Female	32	China	Farmington Regional Airport	US	United States	NAM	North America	03-07-2022	FAM
8qA80a	Dyna	De'Vere - ...	Female	22	China	Oudtshoorn Airport	ZA	South Africa	AF	Africa	7/18/2022	OUH

Airline 1

Output

Action Output

#	Time	Action	Message
19	19:23:06	DEALLOCATE PREPARE stmt	OK
20	19:23:14	use airline	0 row(s) affected
21	19:23:20	SELECT * FROM Airline LIMIT 0, 1000	126 row(s) returned

Data Cleaning

```
ALTER TABLE Airline
DROP COLUMN `Airport Continent`,
DROP COLUMN `Airport Country Code`;
```

Data Cleaning

```sql
SELECT *
FROM Airline
WHERE
    `First Name` IS NULL OR
    `Last Name` IS NULL OR
    Gender IS NULL OR
    Age IS NULL OR
    Nationality IS NULL OR
    `Airport Name` IS NULL OR
    `Country Name` IS NULL OR
    `Continents` IS NULL OR
    `Arrival Airport` IS NULL OR
    `Departure Date` IS NULL OR
    `Flight Status` IS NULL OR
    `Pilot Name` IS NULL;
```

Data Normalization and Transformation

1- Passenger Table

```sql
CREATE TABLE Passengers(Passenger_ID INT AUTO_INCREMENT PRIMARY KEY) AS
SELECT DISTINCT
    CONCAT(`First Name`, ' ', `Last Name`) AS Passenger_Name,
    Gender,
    Age,
    Nationality,
    `Airport Name` AS Airport_Name
FROM Airline;

ALTER TABLE Passengers
ADD COLUMN Number_of_Flights INT DEFAULT 0;
UPDATE Passengers
SET Number_of_Flights = ROUND(RAND() * 8 + 2);

ALTER TABLE Passengers
ADD COLUMN Travel_Class VARCHAR(20);
UPDATE Passengers
SET Travel_Class =
    CASE
        WHEN Passenger_ID % 3 = 0 THEN 'Economy'
        WHEN Passenger_ID % 3 = 1 THEN 'Business'
        ELSE 'First'
    END;
```

Data Normalization and Transformation

```
ADD COLUMN Ticket_Price DECIMAL(10,2);
UPDATE Passengers
SET Ticket_Price =
    CASE
        WHEN Travel_Class = 'Economy' THEN 1000.00
        WHEN Travel_Class = 'Business' THEN 1500.00
        WHEN Travel_Class = 'First' THEN 2000.00
        ELSE 1200.00
    END;

SELECT * FROM Passengers;
```

sult Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Passenger_ID	Passenger_Name	Gender	Age	Nationality	Airport_Name	Number_of_Flights	Travel_Class	Ticket_Price
1	Edithe Leggis	Female	62	Japan	Coldfoot Airport	3	Business	1500.00
2	Elwood Catt	Male	62	Nicaragua	Kugluktuk Airport	8	First	2000.00
3	Darby Felgate	Male	67	Russia	Grenoble-IsÃ¨re Airport	8	Economy	1000.00
4	Dominica Pyle	Female	71	China	Ottawa / Gatineau Airport	4	Business	1500.00
5	Bay Pencost	Male	21	China	Gillespie Field	9	First	2000.00
6	Lora Durbann	Female	55	Brazil	Coronel HorÃ¡cio de Mattos Airport	2	Economy	1000.00
7	Rand Bram	Male	73	Ivory Coast	Duxford Aerodrome	4	Business	1500.00
8	Perceval Dallosso	Male	36	Vietnam	Maestro Wilson Fonseca Airport	6	First	2000.00
9	Aleda Pigram	Female	35	Palestinian Territory	Venice Marco Polo Airport	5	Economy	1000.00
10	Burlie Schuetl	Male	13	Thailand	Vermilion Airport	5	Business	1500.00

sengers 3 ×

Apply

Data Normalization and Transformation

2- Airport Table

```sql
CREATE TABLE Airport(Airport_ID INT AUTO_INCREMENT PRIMARY KEY) AS
SELECT DISTINCT
    `Airport Name` AS Airport_Name,
    `Country Name` AS Country_Name,
    `Arrival Airport` AS Arrival_Airport,
    Continents
FROM Airline;

ALTER TABLE Airport
ADD COLUMN Total_Revenue DECIMAL(12,2);

UPDATE Airport ar
SET Total_Revenue = (
    SELECT SUM(p.Ticket_Price * p.Number_of_Flights)
    FROM Passengers p
    WHERE p.Airport_Name = ar.Airport_Name
);
```

Data Normalization and Transformation

```
95
96 •  SELECT * FROM Airport;
97
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Airport_ID	Airport_Name	Country_Name	Arrival_Airport	Continents	Total_Revenue
1	Coldfoot Airport	United States	CXF	North America	4500.00
2	Kugluktuk Airport	Canada	YCO	North America	16000.00
3	Grenoble-IsÃ¨re Airport	France	GNB	Europe	8000.00
4	Ottawa / Gatineau Airport	Canada	YND	North America	6000.00
5	Gillespie Field	United States	SEE	North America	18000.00
6	Coronel HorÃ¡cio de Mattos Airport	Brazil	LEC	South America	2000.00
7	Duxford Aerodrome	United Kingdom	QFO	Europe	6000.00
8	Maestro Wilson Fonseca Airport	Brazil	STM	South America	12000.00
9	Venice Marco Polo Airport	Italy	VCE	Europe	5000.00
10	Vermilion Airport	Canada	YVG	North America	7500.00
11	Nuevo Casas Grandes Airport	Mexico	NCG	North America	16000.00

Airport 4 ×

Output

Action Output

#	Time	Action	Message
35	19:44:19	ALTER TABLE Airport ADD COLUMN Total_Revenue DECIMAL(12,2)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0
36	19:44:19	UPDATE Airport ar SET Total_Revenue = (SELECT SUM(p.Ticket_Price * p.Number_of_Flights) FROM ...	125 row(s) affected Rows matched: 125 Changed: 125 Warnings: 0
37	19:44:24	SELECT * FROM Airport LIMIT 0, 1000	125 row(s) returned

Data Normalization and Transformation

3- Flight_Status Table

```
104 •   CREATE TABLE Flight_Status(FlightStatus_ID INT AUTO_INCREMENT PRIMARY KEY) AS
105     SELECT DISTINCT `Flight Status` AS Flight_Status
106     FROM Airline;
107
108 •   ALTER TABLE Flight_Status
109     ADD COLUMN Total_Number INT DEFAULT 0;
110
111 •   UPDATE Flight_Status fs
112     JOIN (
113         SELECT `Flight Status` AS Flight_Status, COUNT(*) AS Status_Count
114         FROM Airline
115         GROUP BY `Flight Status`
116     ) AS counts ON fs.Flight_Status = counts.Flight_Status
117     SET fs.Total_Number = counts.Status_Count;
```

Data Normalization and Transformation

```
9 •    SELECT * FROM Flight_Status;
0
1
```

sult Grid | Filter Rows: | Edit:

FlightStatus_ID	Flight_Status	Total_Number
1	On Time	43
2	Delayed	40
3	Cancelled	43

Data Normalization and Transformation

4- Pilot Table

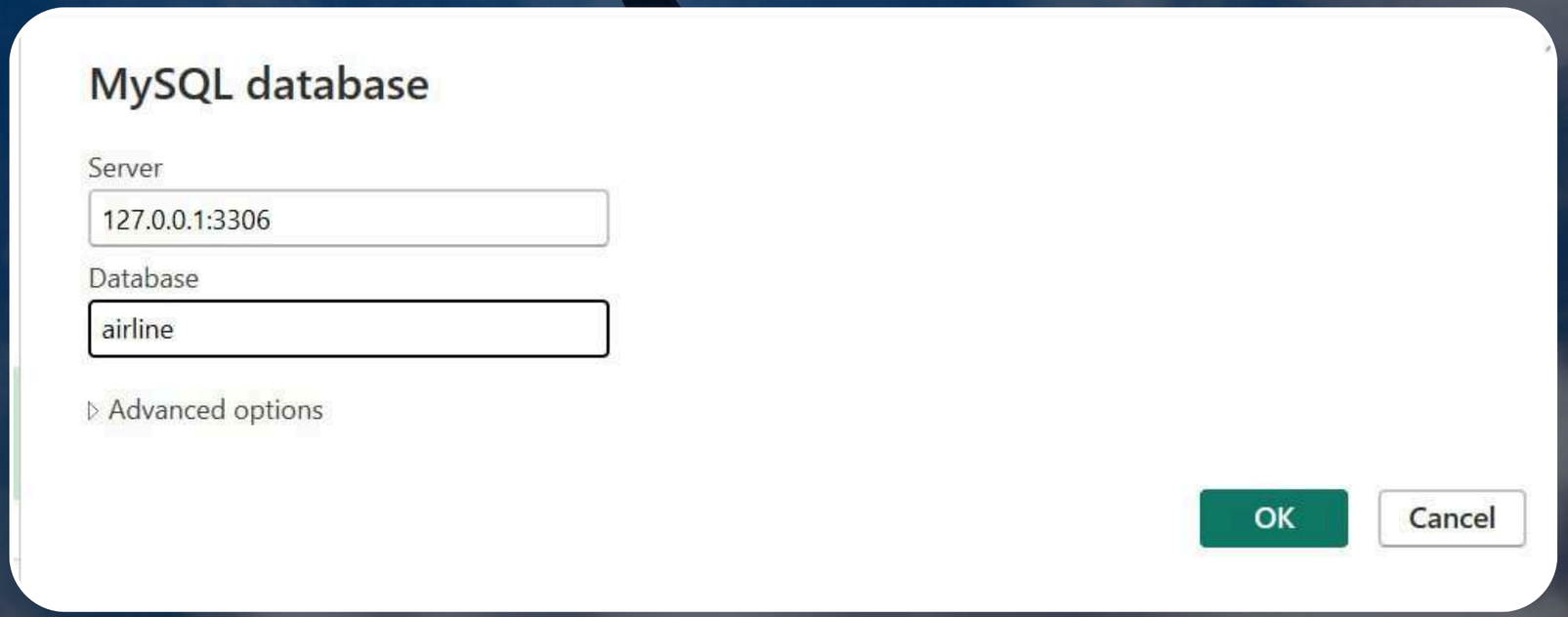
```
CREATE TABLE Pilot(Pilot_ID INT AUTO_INCREMENT PRIMARY KEY) AS
SELECT DISTINCT `Pilot Name` AS Pilot_Name
FROM Airline;

ALTER TABLE Pilot
ADD COLUMN Salary DECIMAL(10,2);

UPDATE pilot
SET salary = ROUND(RAND() * 5000 + 10000, 2);

SELECT * FROM Pilot;
```

sult Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

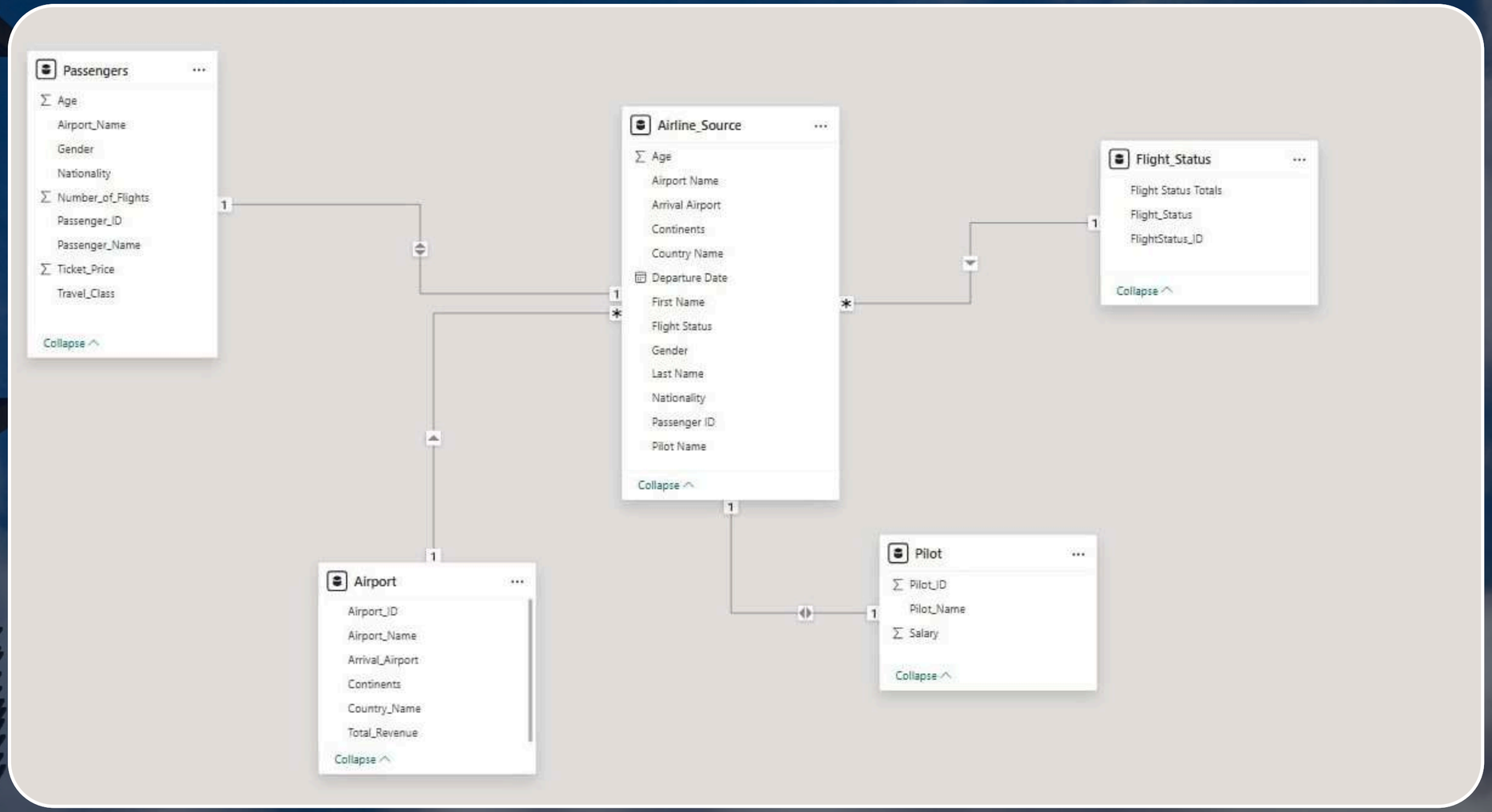
Pilot_ID	Pilot_Name	Salary
1	Fransisco Hazeldine	12056.89
2	Marla Parsonage	14635.59
3	Rhonda Amber	12007.30

Connection Code in Power BI

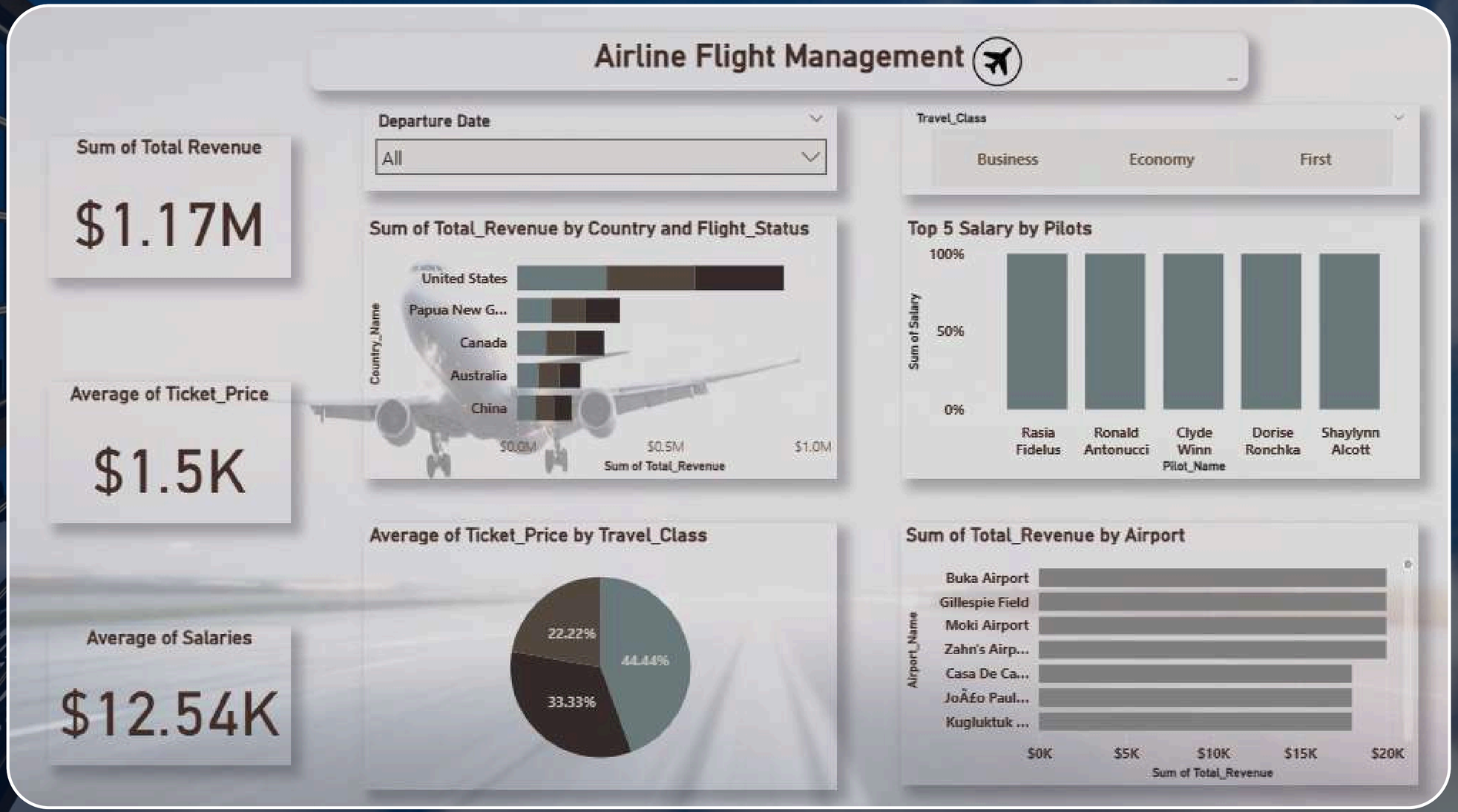
- Sever Name
- DataBase
- Port
- UserName
- Password



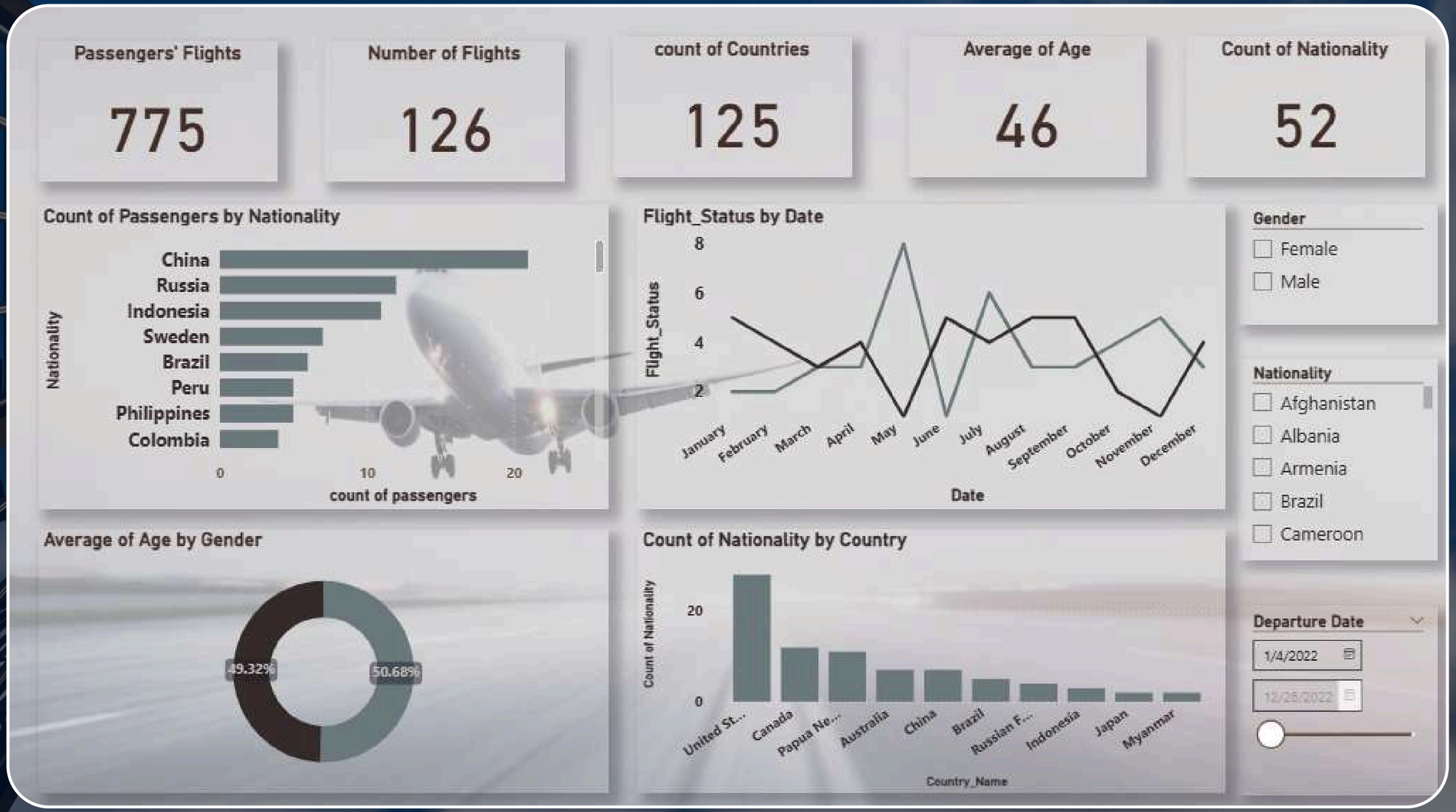
Model View


Passengers
Age
Airport_Name
Gender
Nationality
Number_of_Flights
Passenger_ID
Passenger_Name
Ticket_Price
Travel_Class
Collapse
Airline_Source
Age
Airport Name
Arrival Airport
Continents
Country Name
Departure Date
First Name
Flight Status
Gender
Last Name
Nationality
Passenger ID
Pilot Name
Collapse
Flight_Status
Flight Status Totals
Flight_Status
FlightStatus_ID
Collapse
Airport
Airport_ID
Airport_Name
Arrival_Airport
Continents
Country_Name
Total_Revenue
Collapse
Pilot
Pilot_ID
Pilot_Name
Salary
Collapse
1
*

DashBoard


Airline Flight Management
Sum of Total Revenue
$1.17M
Average of Ticket_Price
$1.5K
Average of Salaries
$12.54K
Departure Date
All
Travel_Class
Business
Economy
First
Sum of Total_Revenue by Country and Flight_Status
United States
Papua New G...
Canada
Australia
China
Country_Name
$0.0M
$0.5M
$1.0M
Sum of Total_Revenue
Top 5 Salary by Pilots
100%
50%
0%
Sum of Salary
Rasia Fidelus
Ronald Antonucci
Clyde Winn
Dorise Ronchka
Shaylynn Alcott
Pilot_Name
Average of Ticket_Price by Travel_Class
22.22%
44.44%
33.33%
Sum of Total_Revenue by Airport
Buka Airport
Gillespie Field
Moki Airport
Zahn's Airp...
Casa De Ca...
JoÃ£o Paul...
Kugluktuk ...
Airport_Name
$0K
$5K
$10K
$15K
$20K
Sum of Total_Revenue

DashBoard


Passengers' Flights
775
Number of Flights
126
count of Countries
125
Average of Age
46
Count of Nationality
52
Count of Passengers by Nationality
China
Russia
Indonesia
Sweden
Brazil
Peru
Philippines
Colombia
Nationality
0
10
20
count of passengers
Flight_Status by Date
8
6
4
2
Flight_Status
January
February
March
April
May
June
July
August
September
October
November
December
Date
Gender
Female
Male
Nationality
Afghanistan
Albania
Armenia
Brazil
Cameroon
Average of Age by Gender
49.32%
50.68%
Count of Nationality by Country
20
0
Count of Nationality
United St...
Canada
Papua Ne...
Australia
China
Brazil
Russian F...
Indonesia
Japan
Myanmar
Country_Name
Departure Date
1/4/2022
12/26/2022

THANK YOU