



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;
```

Passenger ID	First Name	Last Name	Gender	Age	Nationality	Airport Name	Airport Country Code	Country Name	Airport Continent	Continents	Departure Date	Arrival Airport
ABWw1g	Edythe	Leggis	Female	62	Japan	Coldfoot Airport	US	United States	NAM	North America	6/28/2022	CIF
JQKXAK	Elwood	Caitt	Male	62	Nicaragua	Kugluktuk Airport	CA	Canada	NAM	North America	12/26/2022	YCO
CdUx2g	Derby	Felgate	Male	67	Russia	Grenoble-Alpes Airport	FR	France	EU	Europe	1/18/2022	GNE
BR538V	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
nM3Kh	Lora	Durbann	Female	55	Brazil	Coronel Horácio de Mattos Airport	BR	Brazil	SAM	South America	06-10-2022	LEC
8DPPPE	Rand	Bram	Male	73	Ivory Coast	Duxford Aerodrome	GB	United Kingdom	EU	Europe	10/30/2022	QFO
pqxbY	Perceval	Dalloso	Male	36	Vietnam	Maestro Wilson Fonseca Airport	BR	Brazil	SAM	South America	04-07-2022	STM
QNAz2R	Aleda	Pigram	Female	35	Palestinian Territory	Venice Marco Polo Airport	IT	Italy	EU	Europe	8/20/2022	VCE
3ymudz	Burle	Schusti	Male	13	Thailand	Vermilion Airport	CA	Canada	NAM	North America	04-06-2022	YVG
2P4igZ	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
PhzJ2T	Kale	Scoble	Female	47	Sweden	Loralai Airport	PK	Pakistan	AS	Asia	3/19/2022	URG
U75x3	Catriona	Beaumont	Female	77	Russia	Cudal Airport	AU	Australia	OC	Oceania	3/24/2022	CUJ
Qute6R	Amberly	Handling	Female	32	China	Farmington Regional Airport	US	United States	NAM	North America	03-07-2022	FAM
BqA80a	Dyna	De'Vere - ...	Female	22	China	Oudshoorn Airport	ZA	South Africa	AF	Africa	7/18/2022	OUH

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

```
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

```
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

```
1 ADD COLUMN Ticket_Price DECIMAL(10,2);
2 
3 • UPDATE Passengers
4 
5     SET Ticket_Price =
6 
7         CASE
8 
9             WHEN Travel_Class = 'Economy' THEN 1000.00
10 
11            WHEN Travel_Class = 'Business' THEN 1500.00
12 
13            WHEN Travel_Class = 'First' THEN 2000.00
14 
15            ELSE 1200.00
16 
17        END;
18 
19 
20 • SELECT * FROM Passengers;
```

The screenshot shows a database interface with a SQL editor and a results grid. The SQL code in the editor adds a new column 'Ticket_Price' to the 'Passengers' table and updates it based on the 'Travel_Class'. The results grid displays 10 rows of passenger data with the newly added 'Ticket_Price' column.

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-Isère 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 Horácio de Mattos Airport	2	Economy	1000.00
7	Rand Bram	Male	73	Ivory Coast	Duxford Aerodrome	4	Business	1500.00
8	Perceval Dallorso	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	Burka Cuthell	Male	19	Thailand	Vermillion Airport	6	Business	1500.00

Data Normalization and Transformation

2- Airport Table

```
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

The screenshot displays a software interface for data management, likely a database tool or ETL application. At the top, a code editor shows a SQL query:

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

Below the code editor is a "Result Grid" table with the following data:

Airport_ID	Airport_Name	Country_Name	Arrival_Airport	Continents	Total_Revenue
1	Coldfoot Airport	United States	CDF	North America	4500.00
2	Kugluktuk Airport	Canada	YCO	North America	16000.00
3	Grenoble-Isère 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 Horácio 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	VOE	Europe	5000.00
10	Vermilion Airport	Canada	YVG	North America	7500.00
11	Nuevo Casas Grandes Airport	Mexico	NCG	North America	16000.00

At the bottom, there is an "Output" section showing the results of recent actions:

#	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_Rights) 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

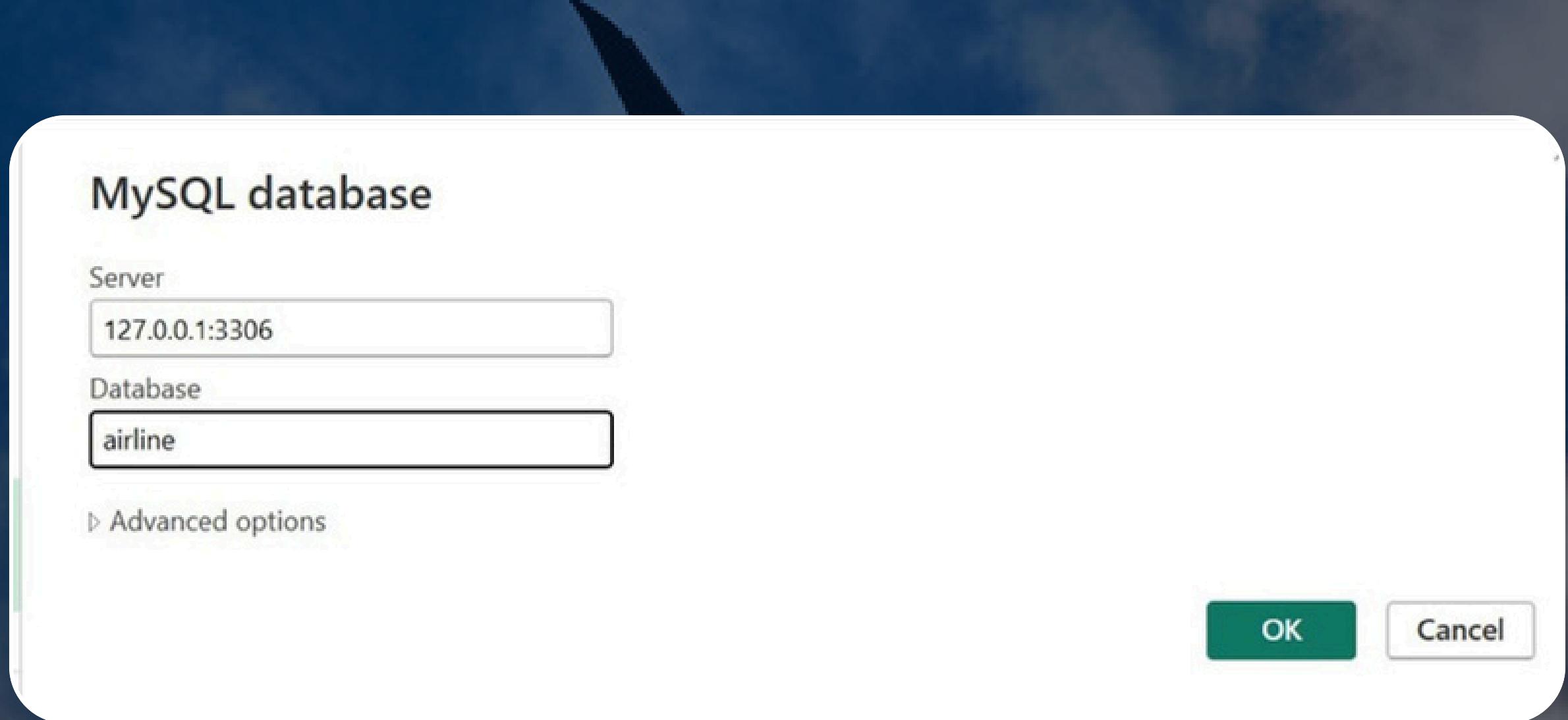
4- Pilot Table

```
6 • CREATE TABLE Pilot(Pilot_ID INT AUTO_INCREMENT PRIMARY KEY) AS  
7   SELECT DISTINCT `Pilot Name` AS Pilot_Name  
8   FROM Airline;  
9  
10 • ALTER TABLE Pilot  
11   ADD COLUMN Salary DECIMAL(10,2);  
12  
13 • UPDATE pilot  
14   SET salary = ROUND(RAND() * 5000 + 10000, 2);  
15  
16 • SELECT * FROM Pilot;
```

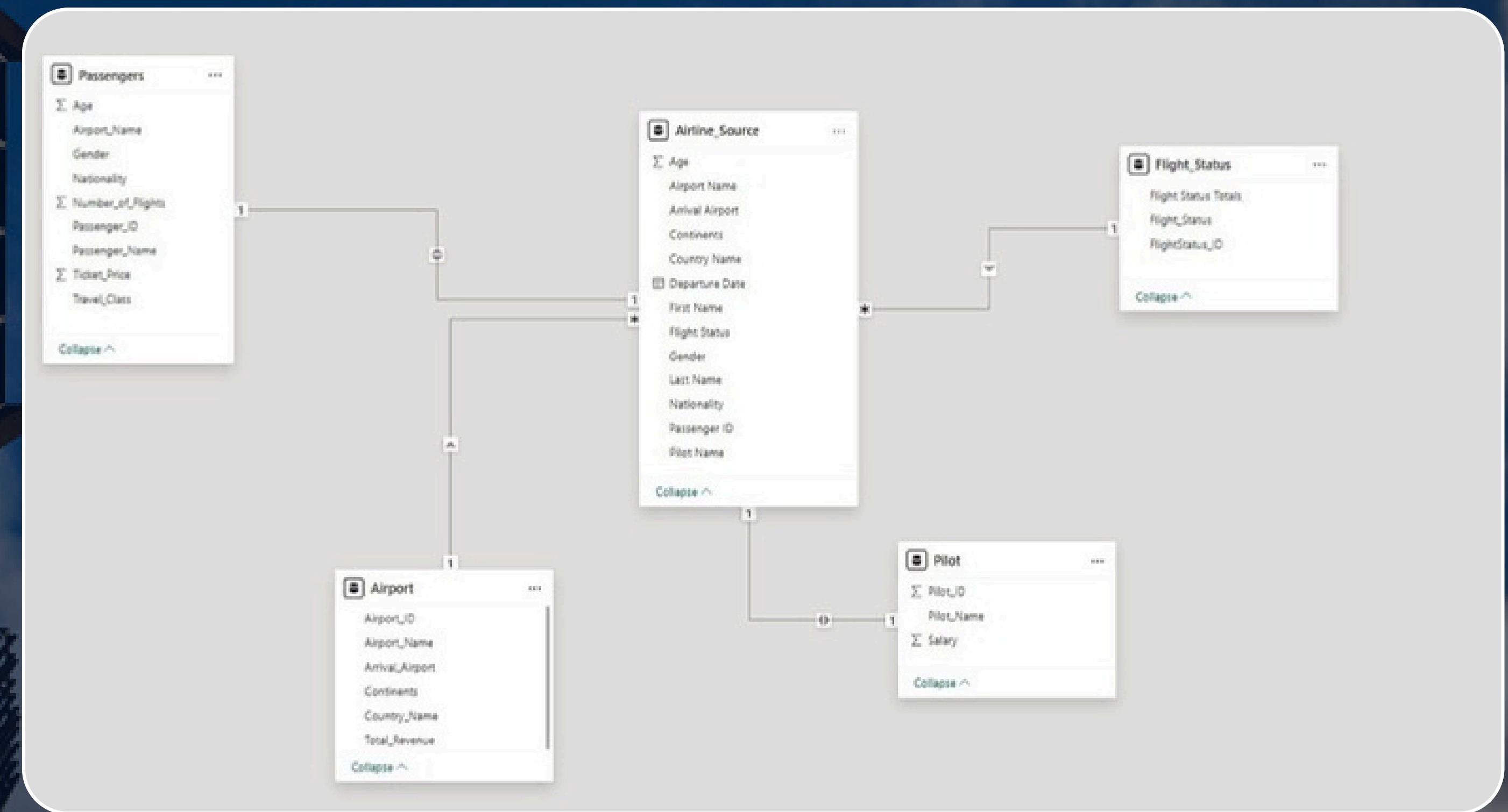
Result Grid		
Pilot_ID	Pilot_Name	Salary
1	Fransisco Hazeldine	12056.89
2	Marla Parsonage	14635.59
3	Rhonda Amber	12007.30

Connection Code in Power BI

- Sever Name
- DataBase
- Port
- UserName
- Password



Model View



Dashboard



Dashboard





THANK YOU

