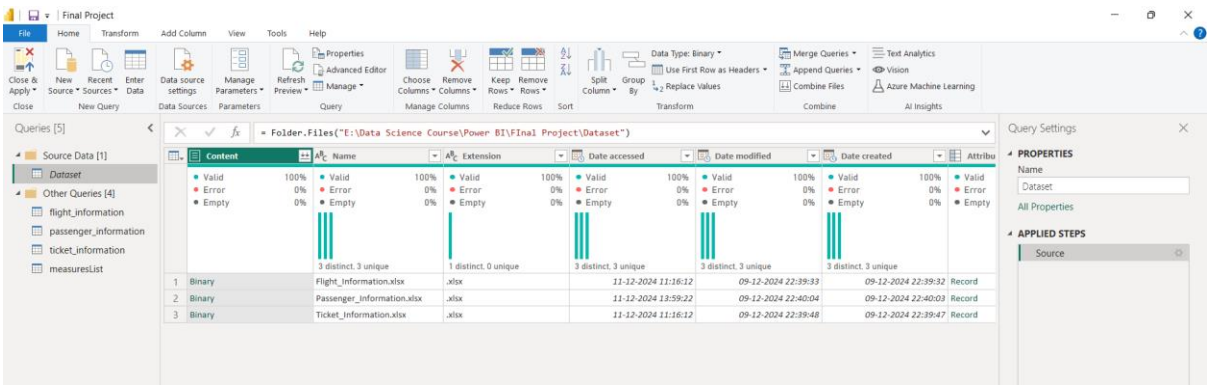
Airline Data Management and Analysis Using Power BI

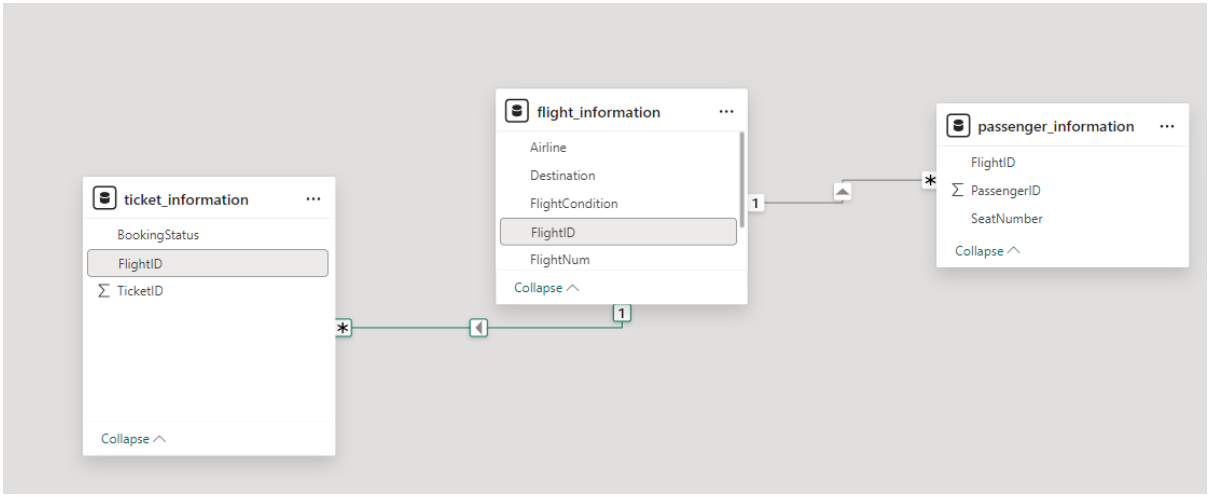
Video Explanation Link :

https://drive.google.com/file/d/1ZexPCKqCDrAA70cNQ57cmh-d7IjPyT82/view?usp=sharing

1. Data Preparation and Cleaning
   a. Extract and transform data in Power Query.
   b. Clean data: remove duplicates, handle missing values, and format columns.



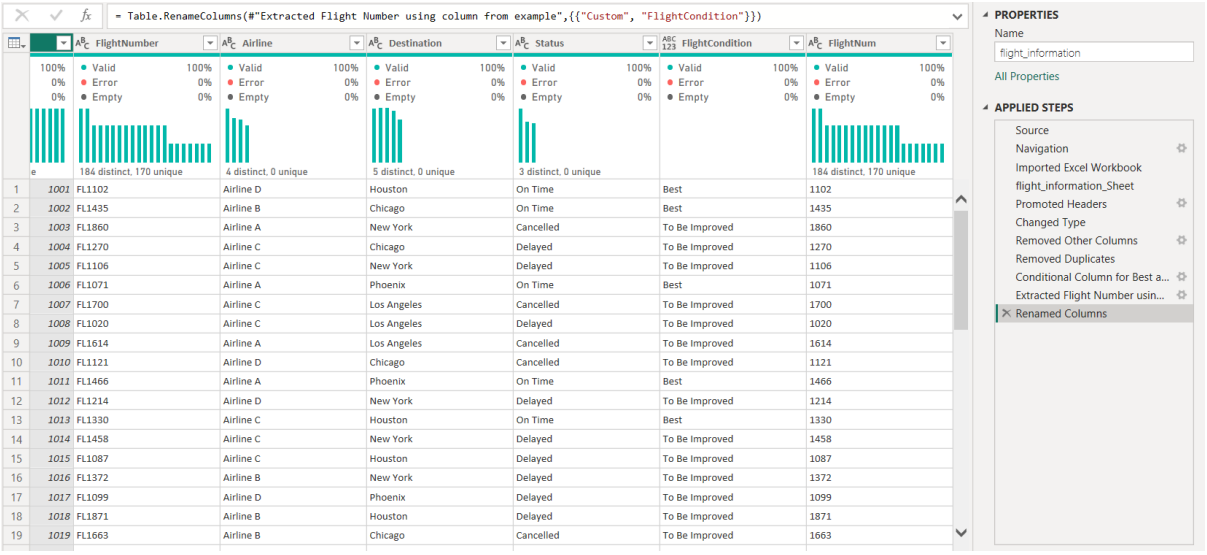
2. Data Modelling
   a. Create relationships between datasets (FlightID as the key).
   b. Understand cardinality and configure the model appropriately.



3. Enhanced Data Insights
   a. Add a conditional column to classify flights as "Best" or "To Be Improved" based on status.

b. Use "Column from Examples" to extract the flight number from FlightNumber

c. Flight Condition -> Conditional Column & Flight Num is Column from Example



	FlightNumber	Airline	Destination	Status	FlightCondition	FlightNum
	184 distinct, 170 unique	4 distinct, 0 unique	5 distinct, 0 unique	3 distinct, 0 unique		184 distinct, 170 unique
1	1001 FL1102	Airline D	Houston	On Time	Best	1102
2	1002 FL1435	Airline B	Chicago	On Time	Best	1435
3	1003 FL1860	Airline A	New York	Cancelled	To Be Improved	1860
4	1004 FL1270	Airline C	Chicago	Delayed	To Be Improved	1270
5	1005 FL1106	Airline C	New York	Delayed	To Be Improved	1106
6	1006 FL1071	Airline A	Phoenix	On Time	Best	1071
7	1007 FL1700	Airline C	Los Angeles	Cancelled	To Be Improved	1700
8	1008 FL1020	Airline C	Los Angeles	Delayed	To Be Improved	1020
9	1009 FL1614	Airline A	Los Angeles	Cancelled	To Be Improved	1614
10	1010 FL1121	Airline D	Chicago	Cancelled	To Be Improved	1121
11	1011 FL1466	Airline A	Phoenix	On Time	Best	1466
12	1012 FL1214	Airline D	New York	Delayed	To Be Improved	1214
13	1013 FL1330	Airline C	Houston	On Time	Best	1330
14	1014 FL1458	Airline C	New York	Delayed	To Be Improved	1458
15	1015 FL1087	Airline C	Houston	Delayed	To Be Improved	1087
16	1016 FL1372	Airline B	New York	Delayed	To Be Improved	1372
17	1017 FL1099	Airline D	Phoenix	Delayed	To Be Improved	1099
18	1018 FL1871	Airline B	Houston	Delayed	To Be Improved	1871
19	1019 FL1663	Airline B	Chicago	Cancelled	To Be Improved	1663

4. Calculations Using DAX

a. Total passengers for a specific flight.

```
Total Passengers =
var totalPass = CALCULATE(
    COUNT(passenger_information[PassengerID]),
    passenger_information[FlightID] = SELECTEDVALUE(flight_information[FlightID])
)

var output = IF(totalPass<>BLANK(),totalPass,0)
return output
```

b. Total tickets booked.

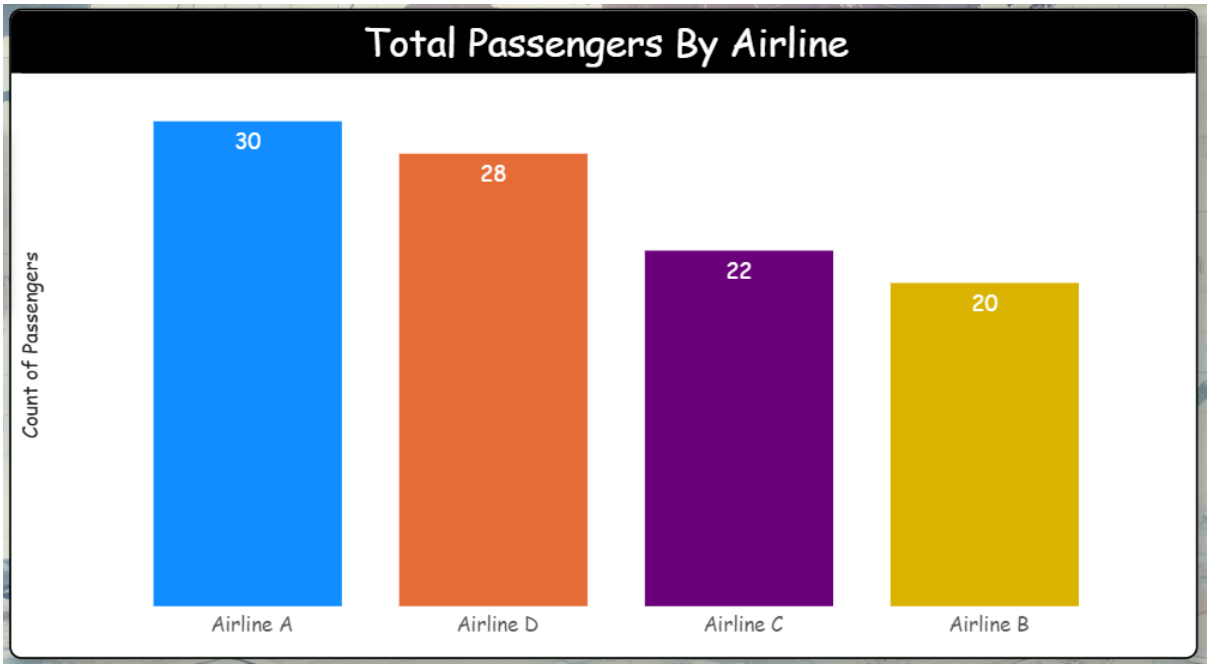
```
totalTicket = COUNTROWS(ticket_information)
```

c. Filtered table showing "Best" flights only.

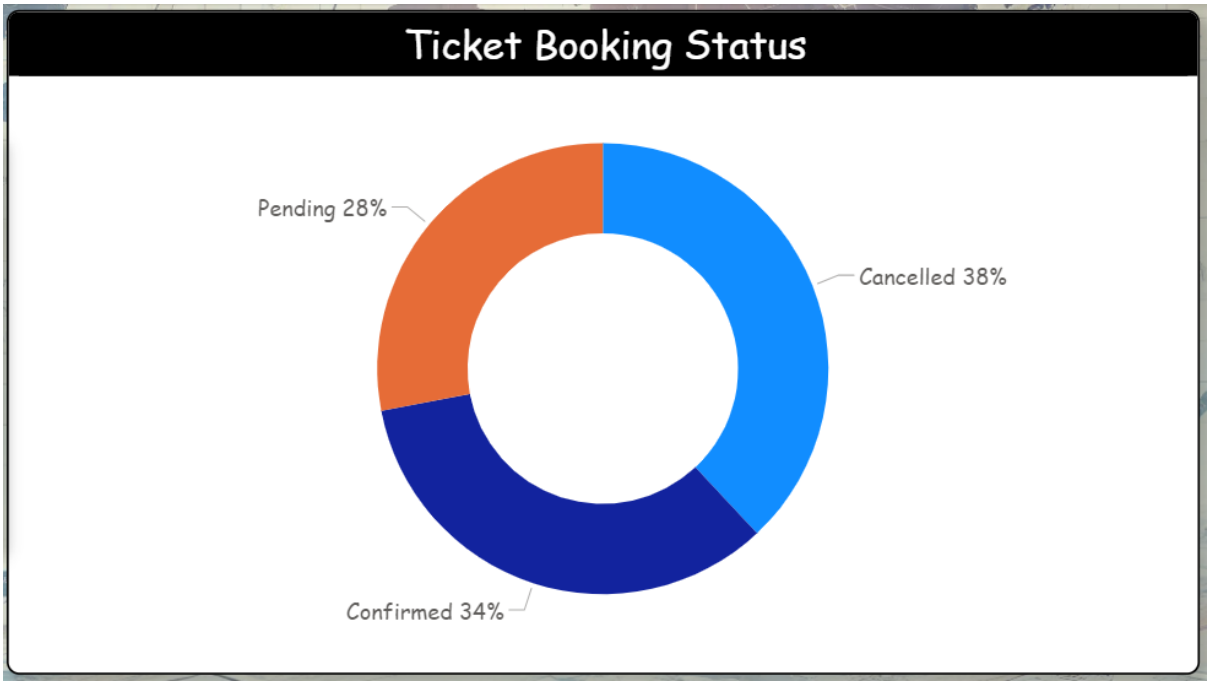
```
1  BestFlights =
2  FILTER (
3      flight_information,
4      flight_information[FlightCondition] = "Best"
5  )
6
```

FlightID	FlightNumber	Airline	Destination	Status	FlightCondition	FlightNum
1001	FL1102	Airline D	Houston	On Time	Best	1102
1002	FL1435	Airline B	Chicago	On Time	Best	1435
1006	FL1071	Airline A	Phoenix	On Time	Best	1071
1011	FL1466	Airline A	Phoenix	On Time	Best	1466
1013	FL1330	Airline C	Houston	On Time	Best	1330
1020	FL1130	Airline A	New York	On Time	Best	1130
1023	FL1769	Airline A	Chicago	On Time	Best	1769
1025	FL1491	Airline D	Phoenix	On Time	Best	1491
1027	FL1805	Airline D	Chicago	On Time	Best	1805
1028	FL1385	Airline D	Chicago	On Time	Best	1385
1029	FL1191	Airline D	Los Angeles	On Time	Best	1191
1030	FL1955	Airline B	Phoenix	On Time	Best	1955
1031	FL1276	Airline B	New York	On Time	Best	1276
1033	FL1459	Airline D	New York	On Time	Best	1459
1034	FL1313	Airline B	Phoenix	On Time	Best	1313
1036	FL1252	Airline D	Phoenix	On Time	Best	1252
1039	FL1560	Airline B	Chicago	On Time	Best	1560
1043	FL1681	Airline C	Houston	On Time	Best	1681

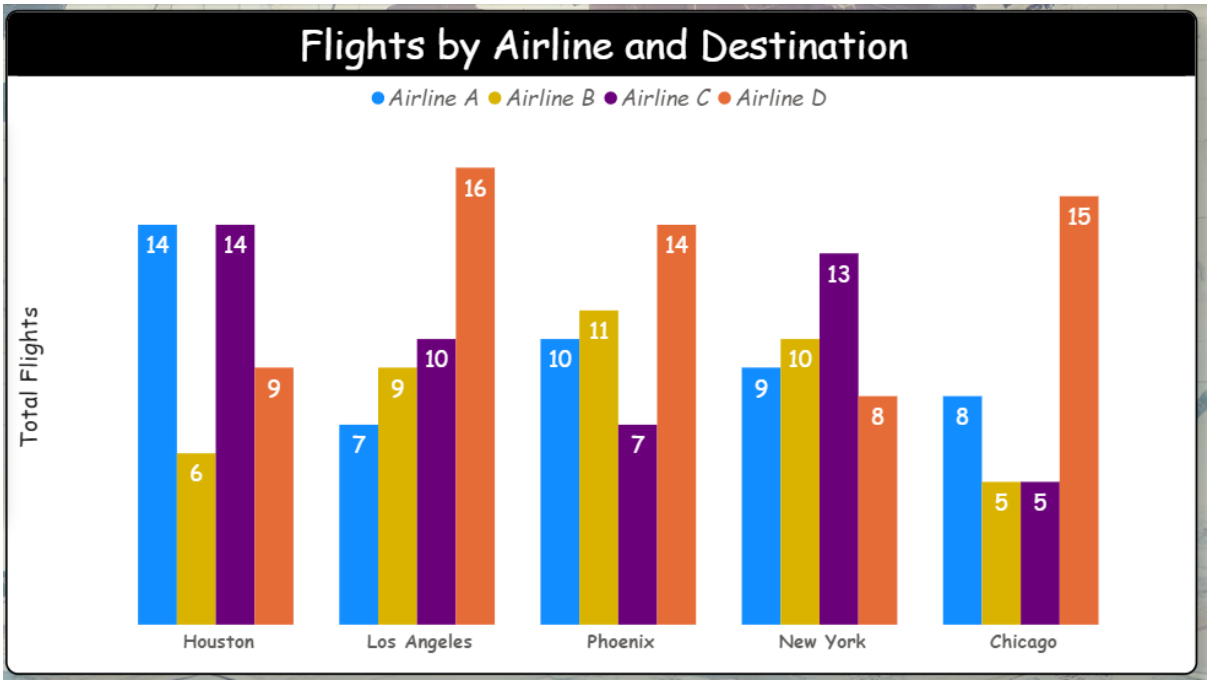
5. Visualization and Interactive Features
   a. Passenger count by airline.



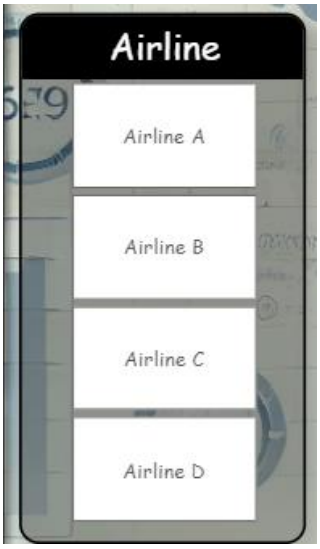
b. Ticket booking statuses.

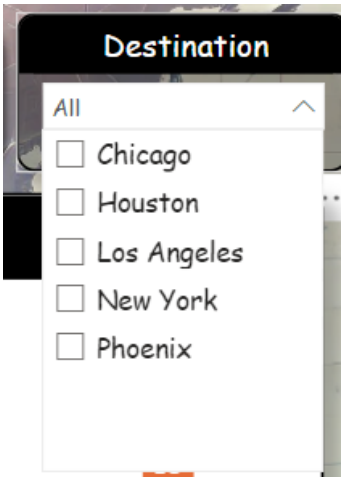


c. Flights by airline and destination.

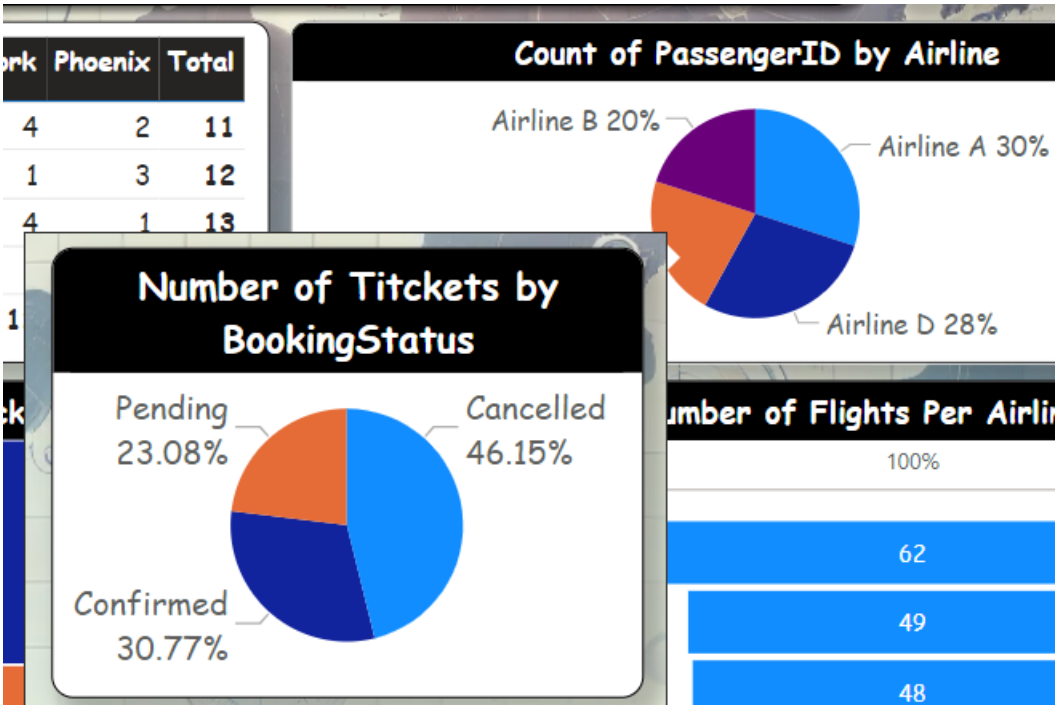


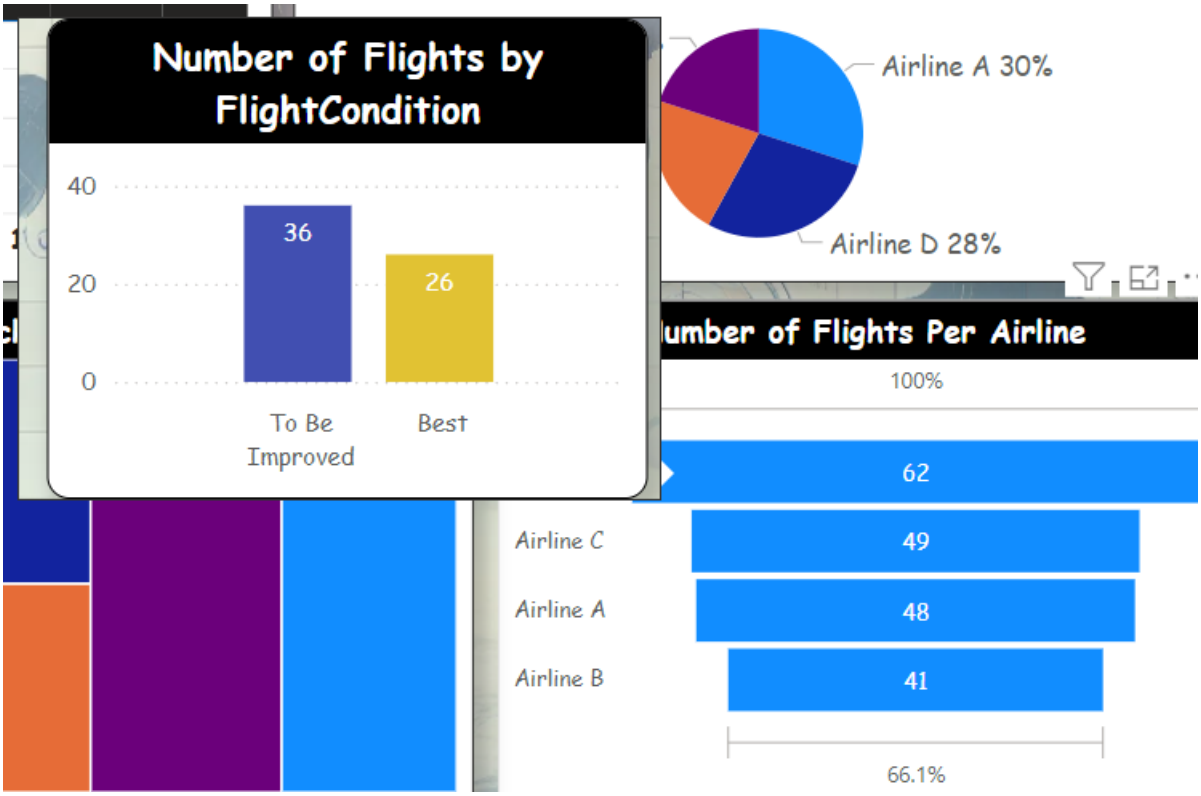
d. Destination and Airline(Filters)



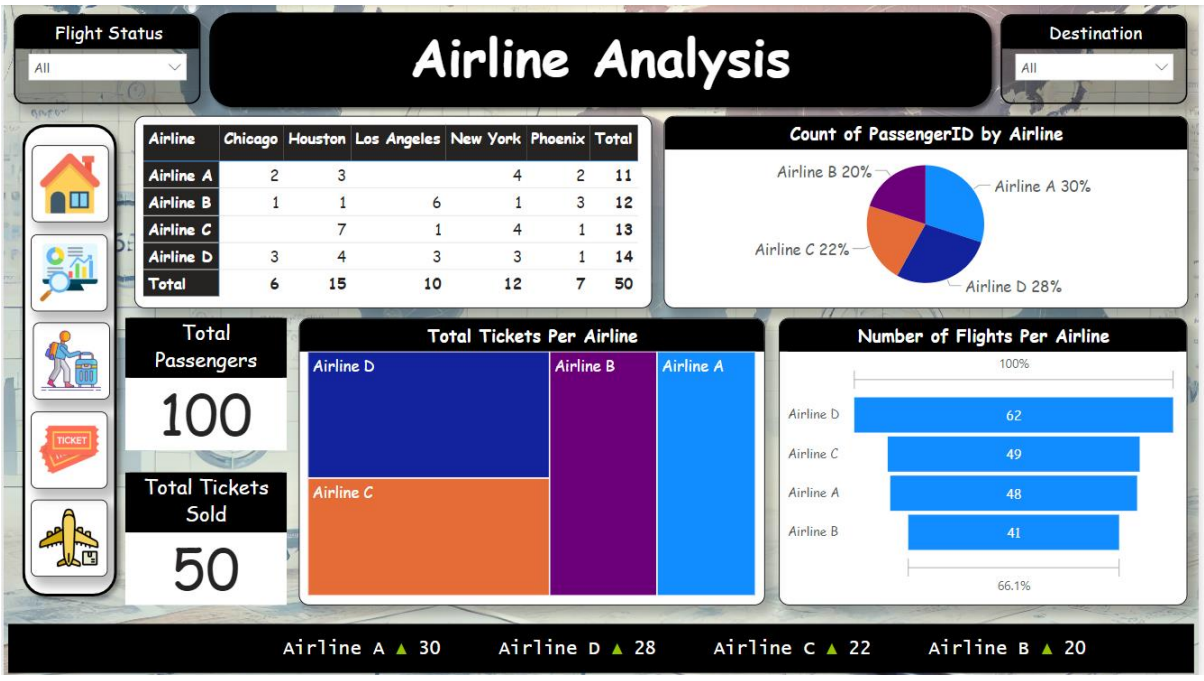


e. Quickviews (ToolTips)

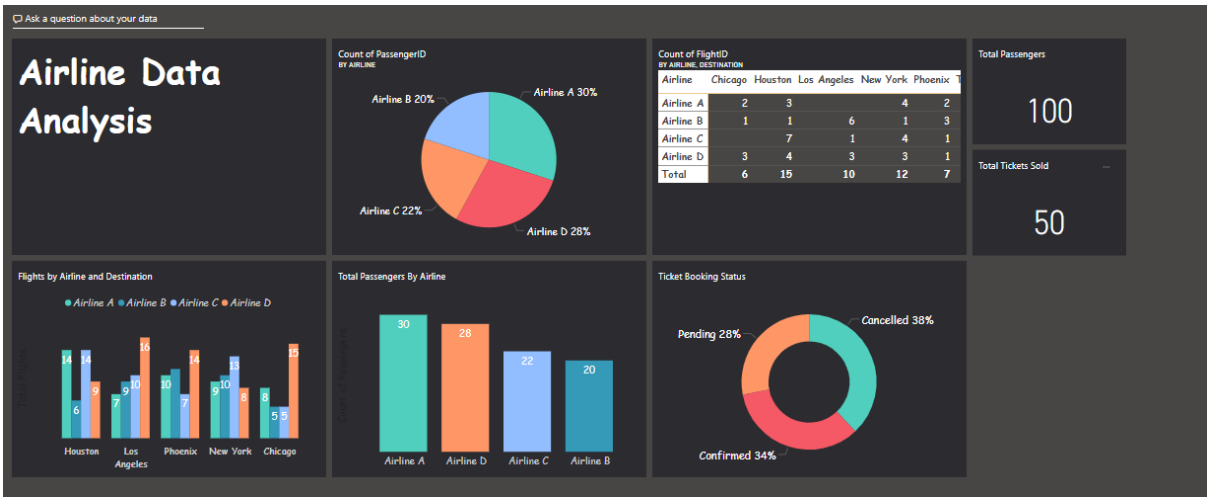




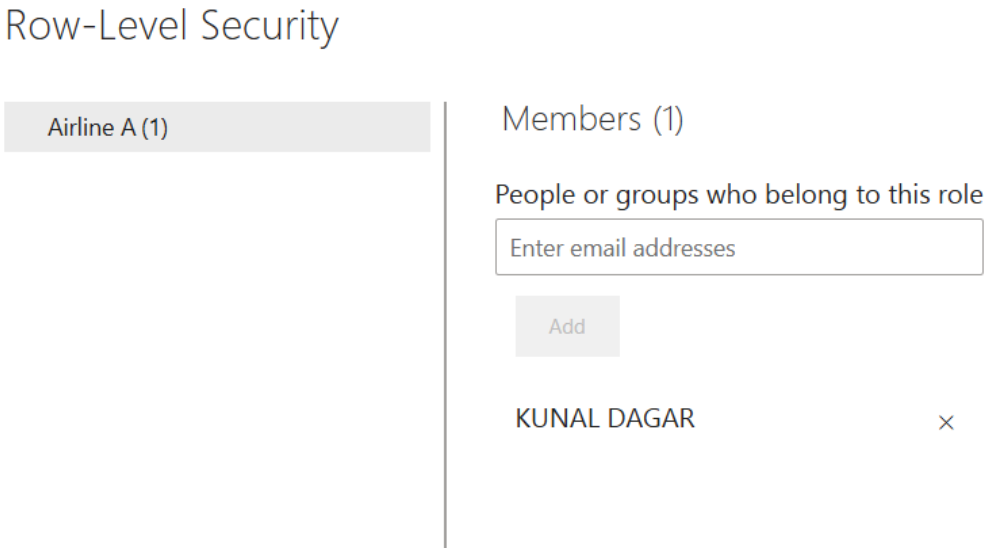
f. Airline-specific pages.

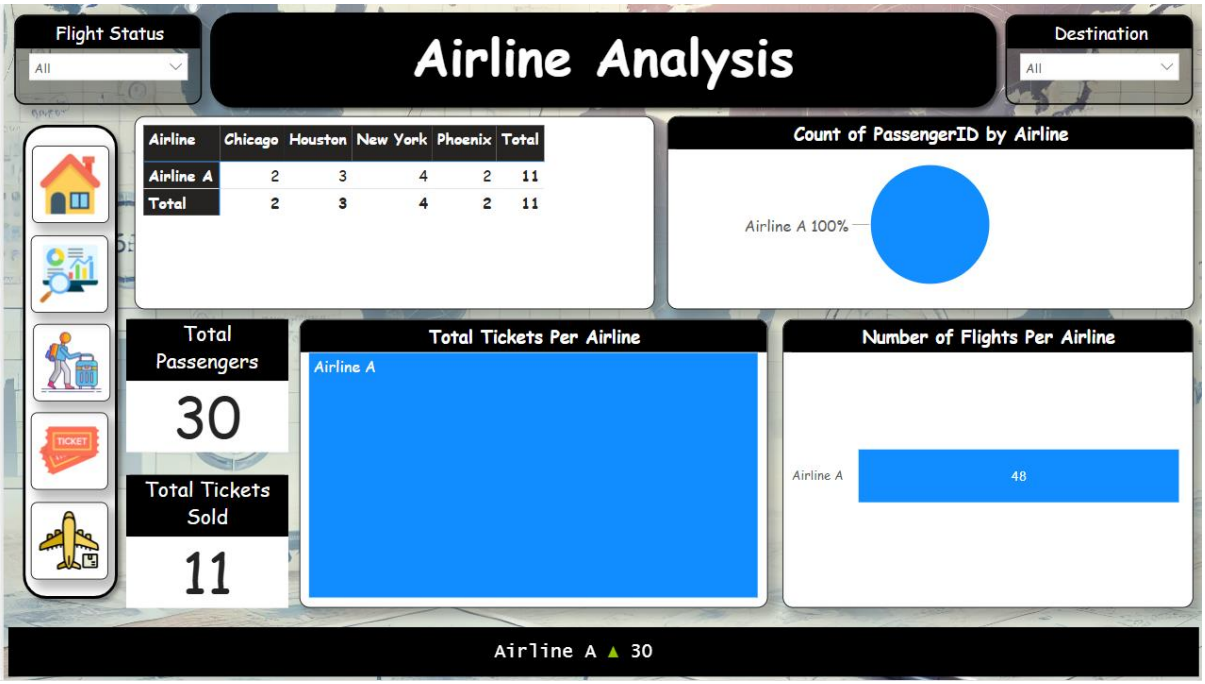


6. Final Dashboard and Power BI Service
   a. Design a comprehensive dashboard with key visuals and insights.



   b. Configure Row-Level Security (RLS) for Airline A data and assign it to a user.





c. Set up a schedule refresh at 5 PM daily

Refresh

Time zone

Time zone configuration is applied not only to determine the schedule refresh time but also to establish the current date and time for incremental refresh models during on-demand and API refreshes. Learn more

(UTC+05:30) Chennai, Kolkata, Mumb

Configure a refresh schedule

Define a data refresh schedule to import data from the data source into the semantic model. Learn more

On

Refresh frequency

Daily

Time

5 00 PM ×

Add another time