

Power BI Project

Task 1: Data Preparation and Cleaning

- Extract and transform data in Power Query.
- Clean data: remove duplicates, handle missing values, and format columns.

Task 3: Enhanced Data Insights

- Add a conditional column to classify flights as "Best" or "To Be Improved" based on status.
- Use "Column from Examples" to extract the flight number from FlightNumber.

The screenshot shows the Microsoft Power BI Data Editor interface. The main area displays a table titled 'FlightInformation' with 200 rows and 7 columns: FlightID, FlightNumber, Airline, Destination, Status, Custom, and a newly added column 'FlightNumber' derived from the FlightNumber column using the 'Column from Examples' feature. The 'Custom' column contains values like 'Best' and 'To be improved'. The 'Properties' pane on the right shows the query name is 'FlightInformation'. The 'Applied Steps' pane at the bottom lists the steps taken, including 'Changed Type' for the newly added column. The system tray at the bottom indicates it's 03-07-2025, 15:52, and shows battery and signal strength.

FlightID	FlightNumber	Airline	Destination	Status	Custom	FlightNumber
1	1001	Airline D	Houston	On Time	Best	1001
2	1002	Airline B	Chicago	On Time	Best	1002
3	1003	Airline A	New York	Cancelled	To be improved	1003
4	1004	Airline C	Chicago	Delayed	To be improved	1004
5	1005	Airline C	New York	Delayed	To be improved	1005
6	1006	Airline A	Phoenix	On Time	Best	1006
7	1007	Airline C	Los Angeles	Cancelled	To be improved	1007
8	1008	Airline C	Los Angeles	Delayed	To be improved	1008
9	1009	Airline A	Los Angeles	Cancelled	To be improved	1009
10	1010	Airline D	Chicago	Cancelled	To be improved	1010
11	1011	Airline A	Phoenix	On Time	Best	1011
12	1012	Airline D	New York	Delayed	To be improved	1012
13	1013	Airline C	Houston	On Time	Best	1013
14	1014	Airline C	New York	Delayed	To be improved	1014
15	1015	Airline C	Houston	Delayed	To be improved	1015
16	1016	Airline B	New York	Delayed	To be improved	1016
17	1017	Airline D	Phoenix	Delayed	To be improved	1017
18	1018	Airline B	Houston	Delayed	To be improved	1018
19	1019	Airline B	Chicago	Cancelled	To be improved	1019
20	1020	Airline A	New York	On Time	Best	1020
21	1021	Airline B	New York	Cancelled	To be improved	1021
22	1022	Airline A	Houston	Delayed	To be improved	1022
23	1023	Airline A	Chicago	On Time	Best	1023
24	1024	Airline B	Chicago	Delayed	To be improved	1024
25	1025	Airline D	Phoenix	On Time	Best	1025
26	1026	Airline D	Chicago	Cancelled	To be improved	1026
27	1027	Airline D	Chicago	On Time	Best	1027
28	1028	Airline D	Chicago	On Time	Best	1028

flight_information

ticket_information

passenger_information

measure

7 COLUMNS, 200 ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 15:21

34°C Haze

ENG IN 15:22 03-07-2025

Extracting flight_information file, changing data format, remove duplicates, handling missing values, conditional column, column from example

flight_information

ticket_information

passenger_information

measure

3 COLUMNS, 50 ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 15:21

34°C Haze

ENG IN 15:22 03-07-2025

Extracting ticket_information file, handling missing values, correcting data format, remove duplicates

Query Settings

- PROPERTIES**
 - Name: passenger_information
 - All Properties
- APPLIED STEPS**
 - Source
 - Navigation
 - Promoted Headers
 - Changed Type
 - Removed Other Columns

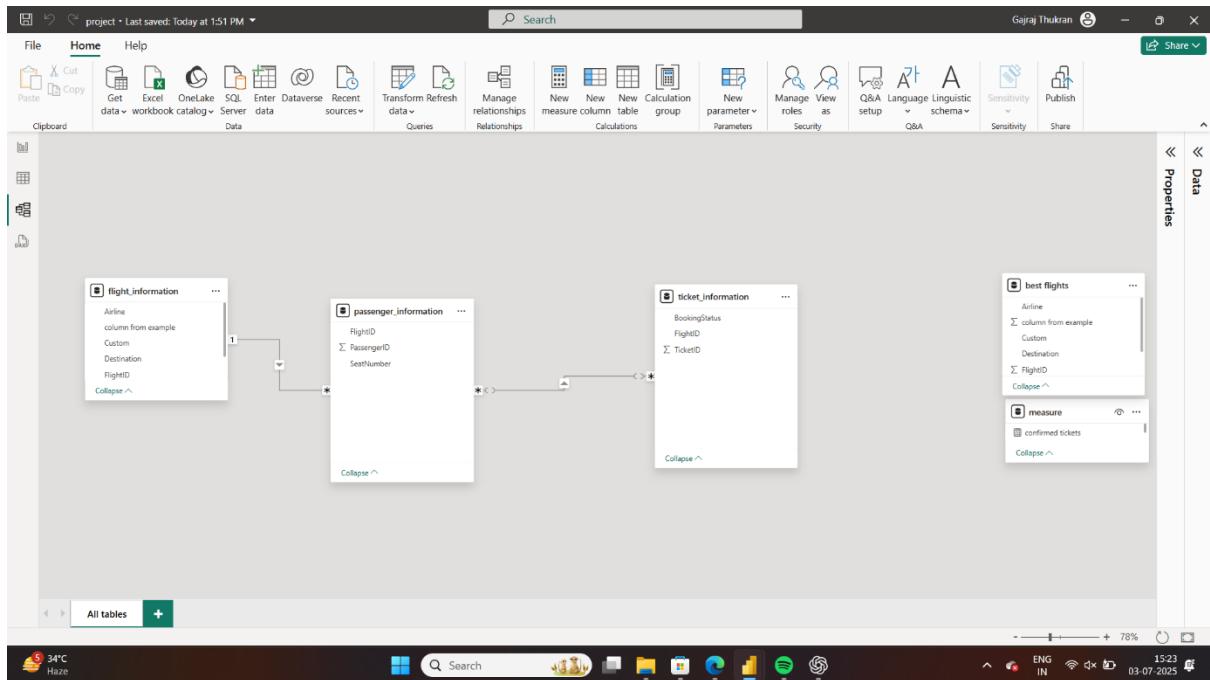
PREVIEW DOWNLOADED AT 15:21

Extracting passenger_information file, correcting data format, remove duplicates, handling missing values

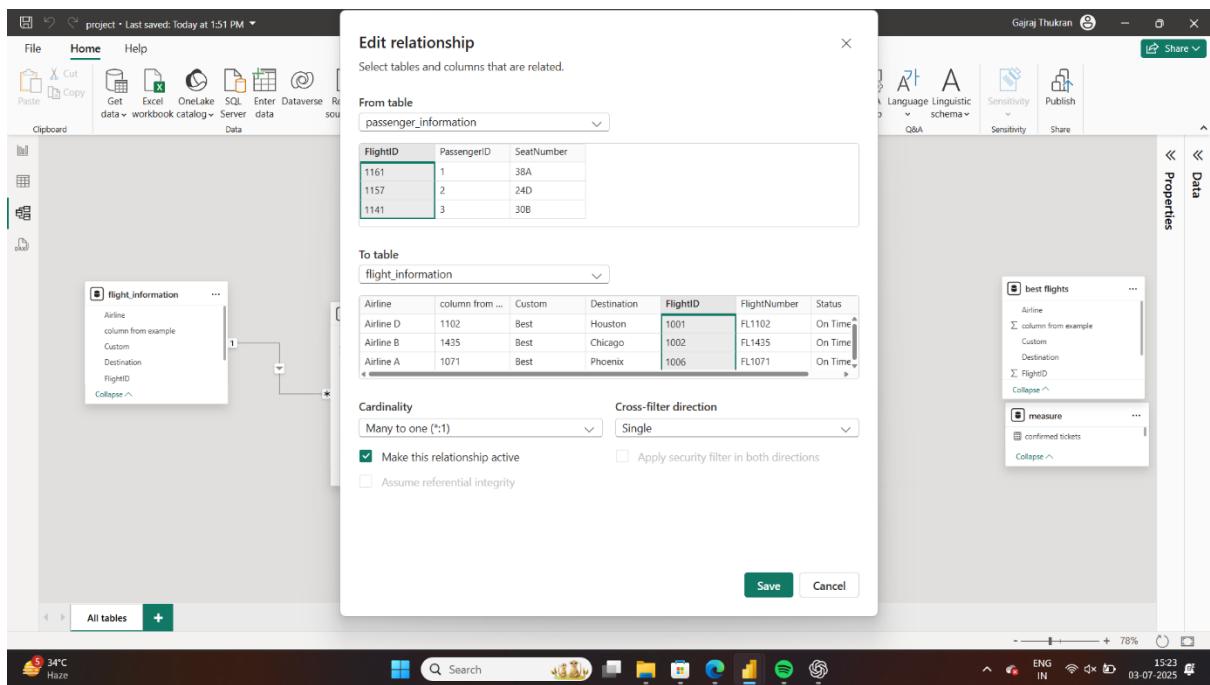
Task 2: Data Modeling

- Create relationships between datasets (FlightID as the key).
- Understand cardinality and configure the model appropriately.

So here we have made a relationship between all three files using FlightID as our common column.



Now in the first picture we see many to one relationship between `flight_information` and `passenger_information` table because in `flight_information` we only have single data for every entry but we have multiple data for a entry in `passenger_information`.



Now in this second picture we see many to many relationship between `passenger_information` and `ticket_information` because both files have multiple entries for a particular data.

Task 4: Calculations Using DAX

- Calculate:
 - Total passengers for a specific flight.
 - Total tickets booked.
 - Filtered table showing "Best" flights only.

So for the first calculation we can calculate for both FlightID and FlightNumber we will use Countrows to and calculate function to get result. The first picture will show result according to FlightID and second will show according to FlightNumber.

File Home Insert Modeling View Optimize Help Table tools Measure tools

Name: totalpassenger for ... Format: Whole number Data category: Uncategorized

Home table: measure \$ % 0

Structure: Formatting Properties Calculations

Build

Data

Measure: confirmed tickets, count passengers, distinctcount, flightnumber, total tickets bo..., totalpassenger..., unique flightID ..., unique flightID ..., unique flightID ...

Flight information: best flights, flight_ID, flight_number, passenger_ID, seat_number

Passenger information: flightID, passengerID, seatNumber

Ticket information: airline, destination, flightID, passengerID, seatNumber

Page 13 of 13

File Home Insert Modeling View Optimize Help Table tools Measure tools

Name: count passengers Format: Whole number Data category: Uncategorized

Home table: measure \$ % 0

Structure: Formatting Properties Calculations

Build

Data

Measure: confirmed ticket..., count pass..., distinctcount, flightnumber, total tickets bo..., totalpassenger..., unique flightID ..., unique flightID ..., unique flightID ...

Flight information: best flights, flight_ID, flight_number, passenger_ID, seat_number

Passenger information: airline, column from ..., custom, destination, flightID, flight_number, status

Ticket information: airline, destination, flightID, passengerID, seatNumber

Page 4 of 13

Second calculation total tickets booked here also we use Countrows and Calculate function to get our result here In the picture we see result for confirmed tickets or total tickets.

Now for the last calculation showing filtered table only for best flights we use Filter function.

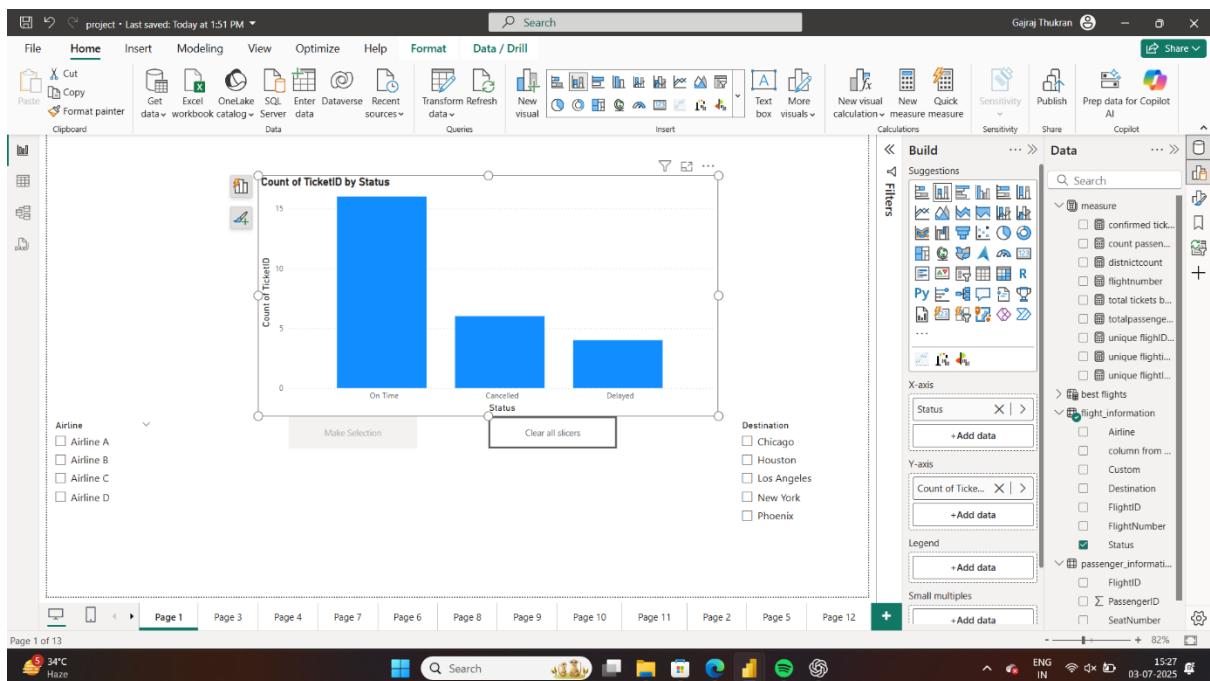
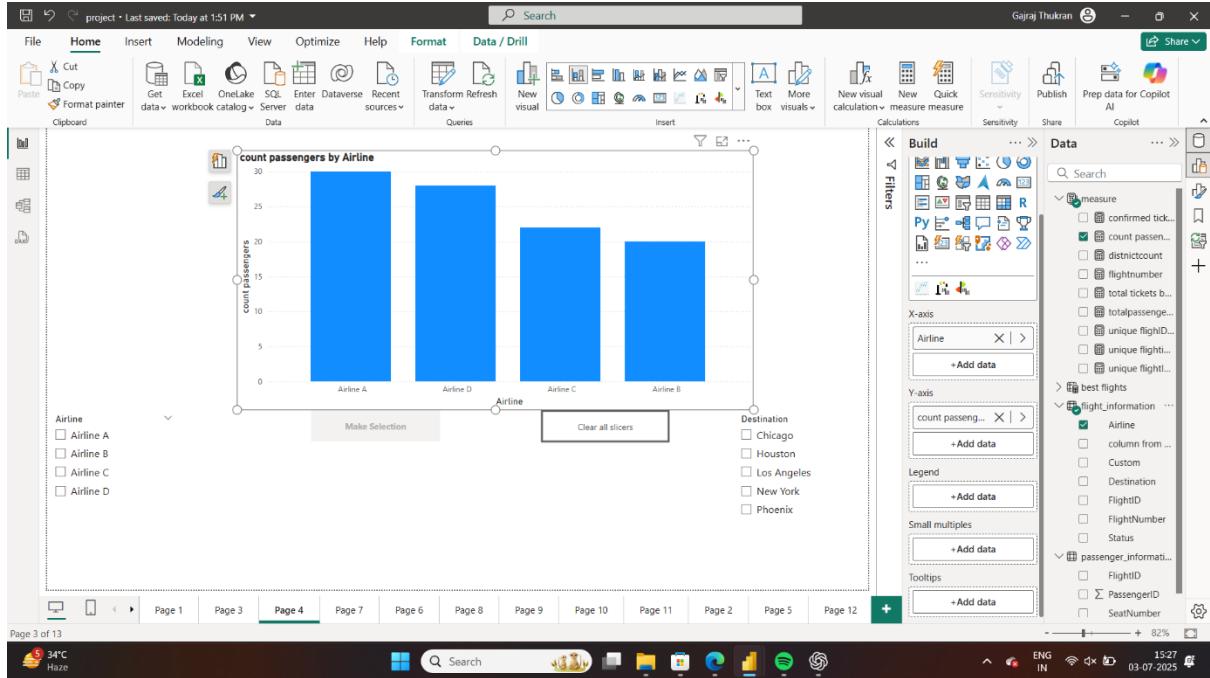
Task 5: Visualization and Interactive Features

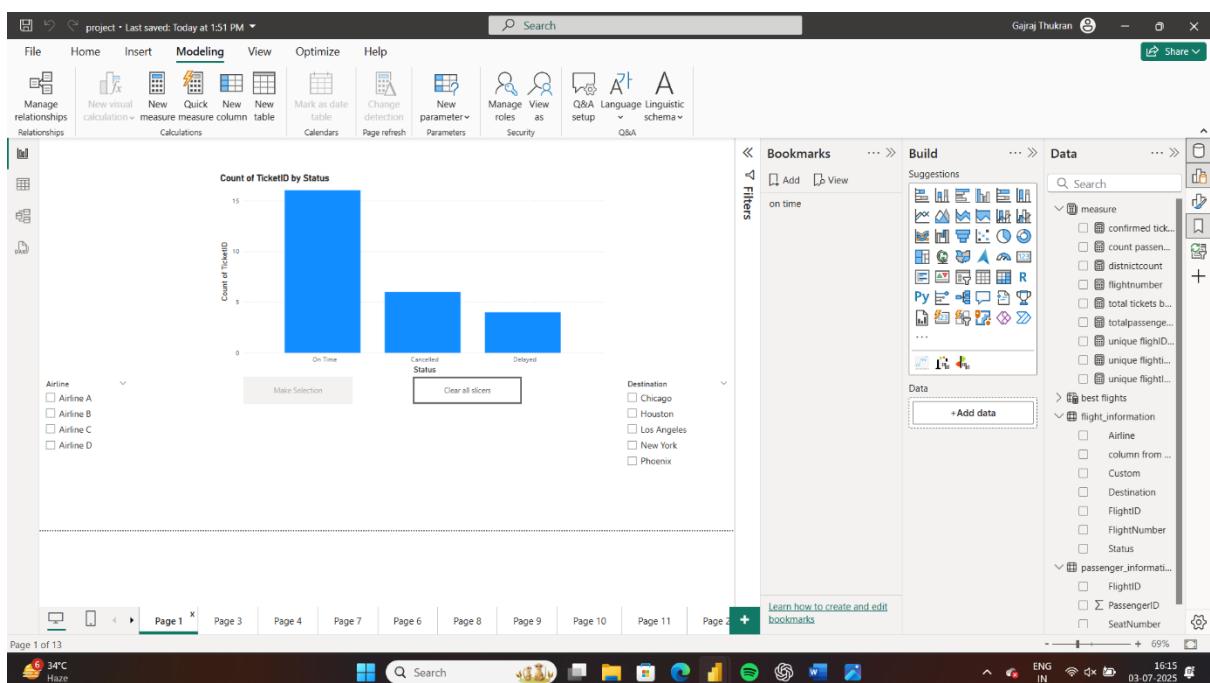
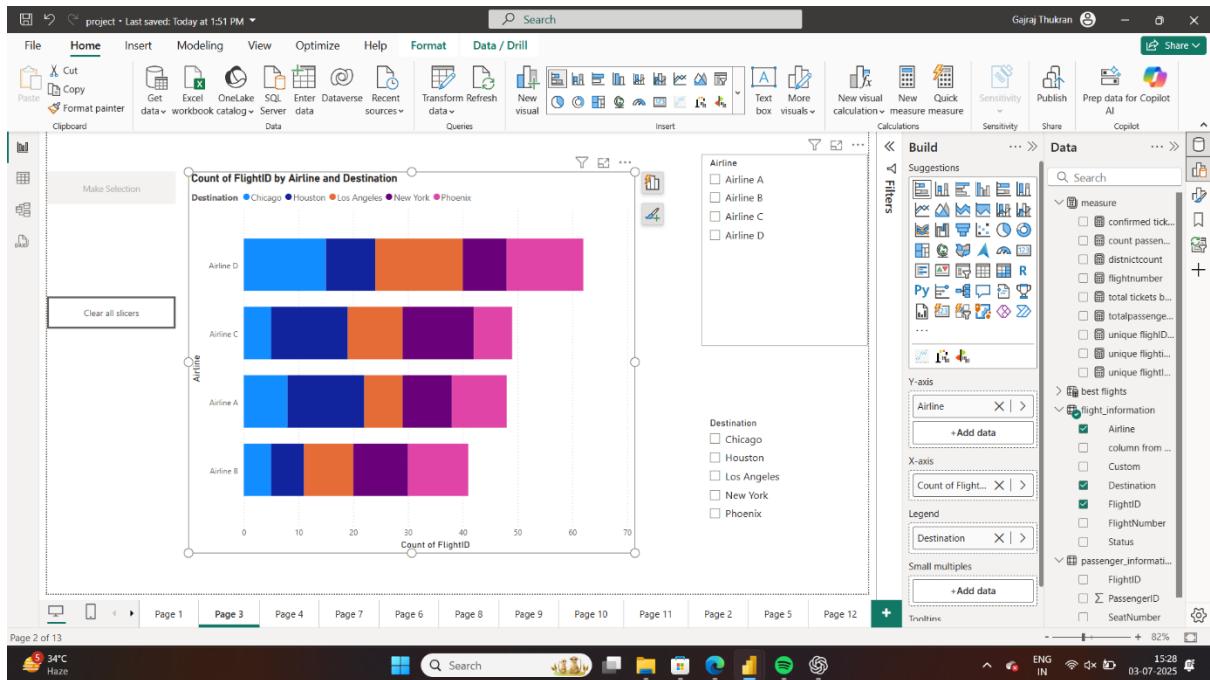
- Create visuals for:
 - Passenger count by airline.
 - Ticket booking statuses.
 - Flights by airline and destination.

- Add interactive features for:

- Destination and Airline.
- Quick views.
- Airline-specific pages.

So here all three visuals one by one and in the visuals we will see slicers, some buttons, we also see bookmark to quickly look for particular data.



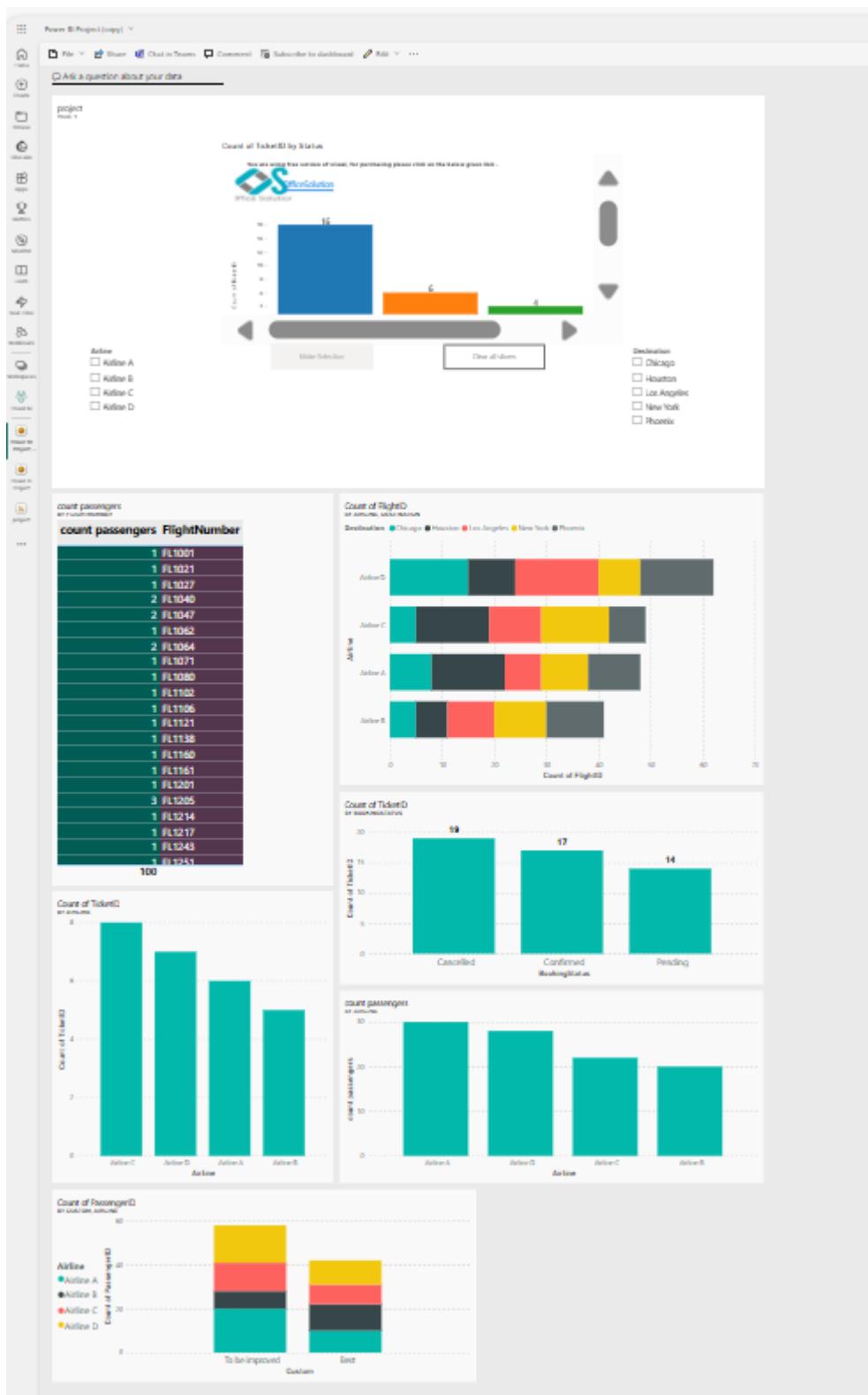


This final visual showing bookmark for quick view.

Task 6: Final Dashboard and Power BI Service

- Design a comprehensive dashboard with key visuals and insights.
- Configure Row-Level Security (RLS) for Airline A data and assign it to a user.
- Setup a schedule refresh at 5 PM daily.

So firstly we will see dashboard showing multiple key visuals.

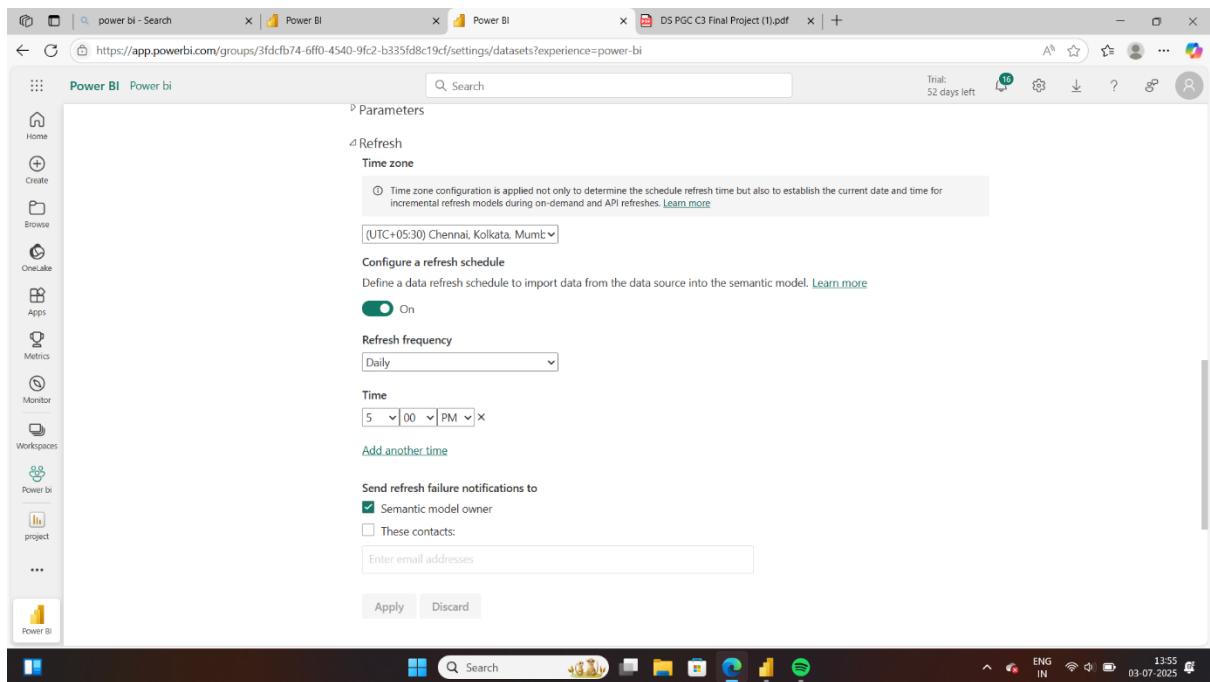


Now in the second point we will see assigning Row-Level-Security for Airline A data. We will see it for in both power bi desktop and power bi service.

The screenshot shows the 'Row-Level Security' settings in Power BI. On the left, there's a sidebar with various navigation options like Home, Power BI, Create, Browse, OneDrive, Apps, Metrics, Monitor, Workspaces, and Power BI project. The main area is titled 'Row-Level Security' and shows a role named 'Airline A (1)'. It has a section for 'Members (1)' where 'Gajraj Thukran' is listed. There's a search bar at the top and a 'Save' button at the bottom.

The screenshot shows the 'Modeling' tab in Power BI. In the center, there's a bar chart titled 'Count of TicketID by Airline' with four bars: Airline C (approx. 8), Airline D (approx. 7), Airline A (0), and Airline B (0). The chart has 'Airline' on the x-axis and 'Count of TicketID' on the y-axis. To the right, a 'View as roles' dialog box is open, showing three options: 'None', 'Other user', and 'Airline A', with 'Airline A' selected. The 'Data' pane on the right lists various measures and tables. The status bar at the bottom indicates it's 34°C Haze and the date is 03-07-2025.

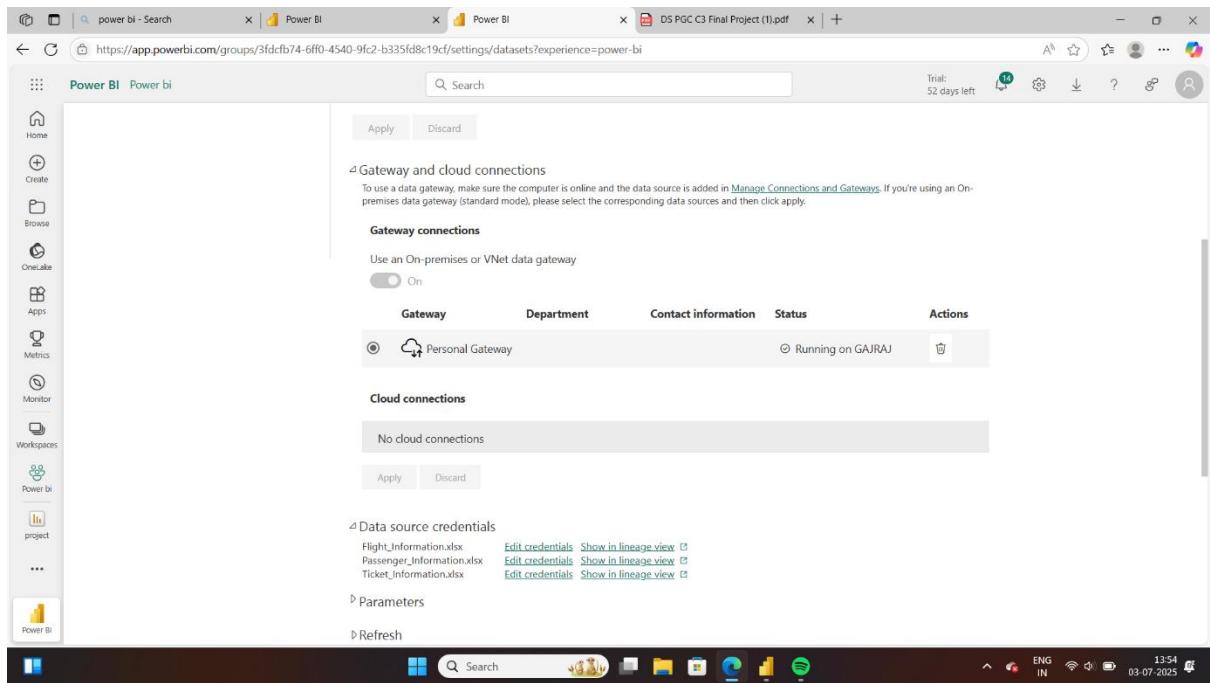
The final one now showing a schedule refresh time at 5 P.M. daily.

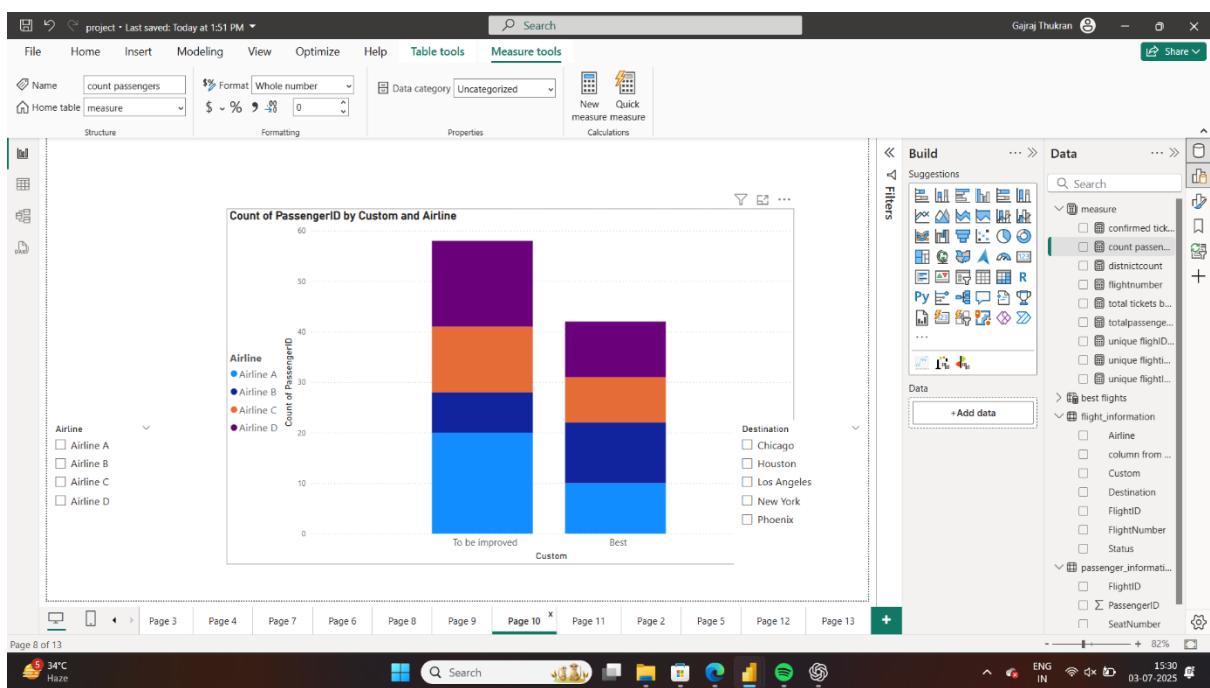
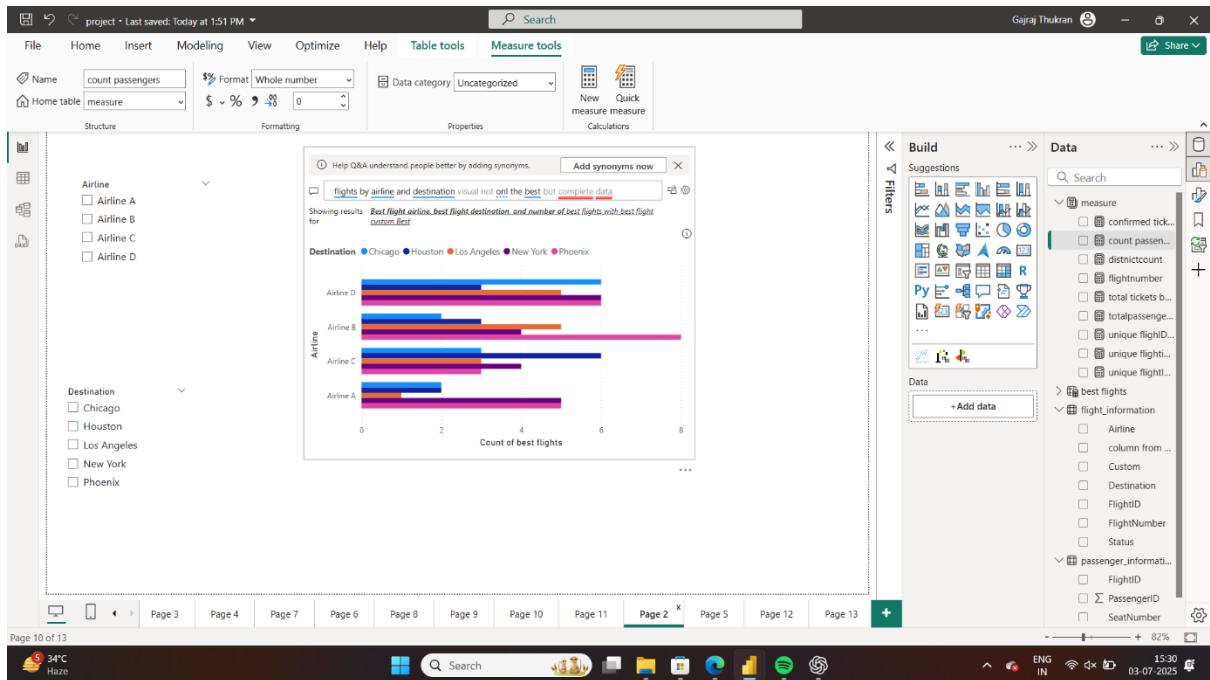


Video Link:

https://drive.google.com/file/d/1LuxMc4IScmo1SUfi7ZaDZWBFYiQBg0_z/view?usp=drivesdk

Some extra pictures showing date gateway and some visuals.





Many more are left but that's all for the project THANKS.