

Project 3

Name: - Yogita Ritesh Gawai

Project Title: -Airline Data Management and Analysis Using Power BI.

Problem Statement: -The airline industry operates with numerous complexities, requiring effective data management and insights into flight schedules, passenger details, and ticketing systems. This project aims to analyse airline operations for improving efficiency and customer satisfaction.

Project Objective: - To analyse and visualize airline data for operational insights, passenger management, and ticket booking trends using Power BI.

Task 1: - 1. Data Preparation and Cleaning

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File Home Transform Add Column View Tools Help

Query Settings

Layout

Queries [3]

passenger_information

ticket_information

flight_information

Table.RemoveColumns(#"Changed Type",{"Column4", "Column5", "Column6", "Column7", "Column8", "Column9", "Column10", "Column11",

Y3 TicketID Y3 FlightID Y3 BookingStatus

Valid 100% Valid 100% Valid 100%

Error 0% Error 0% Error 0%

Empty 0% Empty 0% Empty 0%

1	5001	1178	Pending
2	5002	1078	Confirmed
3	5003	1117	Cancelled
4	5004	1120	Cancelled
5	5005	1137	Cancelled
6	5006	1162	Pending
7	5007	1076	Pending
8	5008	1035	Cancelled
9	5009	1001	Cancelled
10	5010	1040	Cancelled
11	5011	1064	Pending
12	5012	1150	Cancelled
13	5013	1060	Cancelled
14	5014	1064	Confirmed
15	5015	1093	Confirmed
16	5016	1072	Pending
17	5017	1011	Cancelled
18	5018	1105	Cancelled
19	5019	1014	Confirmed
20	5020	1060	Pending
21	5021	1030	Confirmed
22	5022	1035	Confirmed
23	5023	1165	Confirmed
24	5024	1005	Confirmed
25	5025	1083	Cancelled

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

WOL - NFO Video highlight

Search

ENG IN 22:57 07-01-2025

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Query Settings

Layout

Queries [3]

passenger_information

ticket_information

flight_information

Table.SelectRows(#"Removed Columns", each true)

Y3 PassengerID Y3 FlightID Y3 SeatNumber

Valid 100% Valid 100% Valid 100%

Error 0% Error 0% Error 0%

Empty 0% Empty 0% Empty 0%

1	1	1161	38A
2	2	1157	24D
3	3	1141	30B
4	4	1046	17E
5	5	1035	29D
6	6	1134	10A
7	7	1082	10A
8	8	1115	20E
9	9	1197	34E
10	10	1047	2E
11	11	1153	43C
12	12	1194	48C
13	13	1010	47A
14	14	1056	23C
15	15	1030	16D
16	16	1109	40D
17	17	1005	25C
18	18	1119	32C
19	19	1033	27E
20	20	1118	32B
21	21	1065	19E
22	22	1146	5B
23	23	1177	28B
24	24	1011	22E
25	25	1085	6A

3 COLUMNS, 100 ROWS Column profiling based on top 1000 rows

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Query Settings

Layout Data Preview Columns Parameters Advanced Query Dependencies

Queries [3]

passenger_information

ticket_information

flight_information

Table.SelectRows(*Removed Columns*, each true)

	FlightID	FlightNumber	Airline	Destination	Status
1	1001	FL1102	Airline D	Houston	On Time
2	1002	FL1435	Airline B	Chicago	On Time
3	1003	FL1860	Airline A	New York	Cancelled
4	1004	FL1270	Airline C	Chicago	Delayed
5	1005	FL1106	Airline C	New York	Delayed
6	1006	FL1071	Airline A	Phoenix	On Time
7	1007	FL1700	Airline C	Los Angeles	Cancelled
8	1008	FL1020	Airline C	Los Angeles	Delayed
9	1009	FL1614	Airline A	Los Angeles	Cancelled
10	1010	FL1121	Airline D	Chicago	Cancelled
11	1011	FL1466	Airline A	Phoenix	On Time
12	1012	FL1214	Airline D	New York	Delayed
13	1013	FL1330	Airline C	Houston	On Time
14	1014	FL1458	Airline C	New York	Delayed
15	1015	FL1087	Airline C	Houston	Delayed
16	1016	FL1372	Airline B	New York	Delayed
17	1017	FL1099	Airline D	Phoenix	Delayed
18	1018	FL1871	Airline B	Houston	Delayed
19	1019	FL1563	Airline B	Chicago	Cancelled
20	1020	FL1130	Airline A	New York	On Time
21	1021	FL1661	Airline B	New York	Cancelled
22	1022	FL1308	Airline A	Houston	Delayed
23	1023	FL1769	Airline A	Chicago	On Time
24	1024	FL1343	Airline B	Chicago	Delayed
25	1025	FL1491	Airline D	Phoenix	On Time

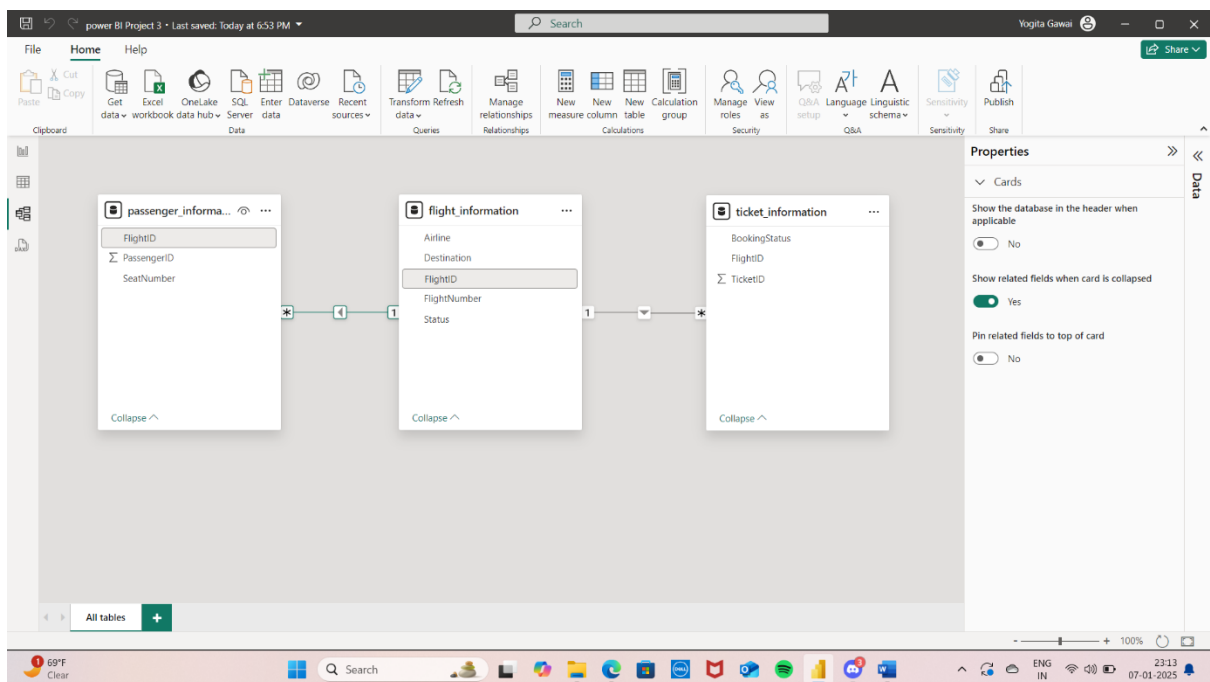
5 COLUMNS, 200 ROWS Column profiling based on top 1000 rows

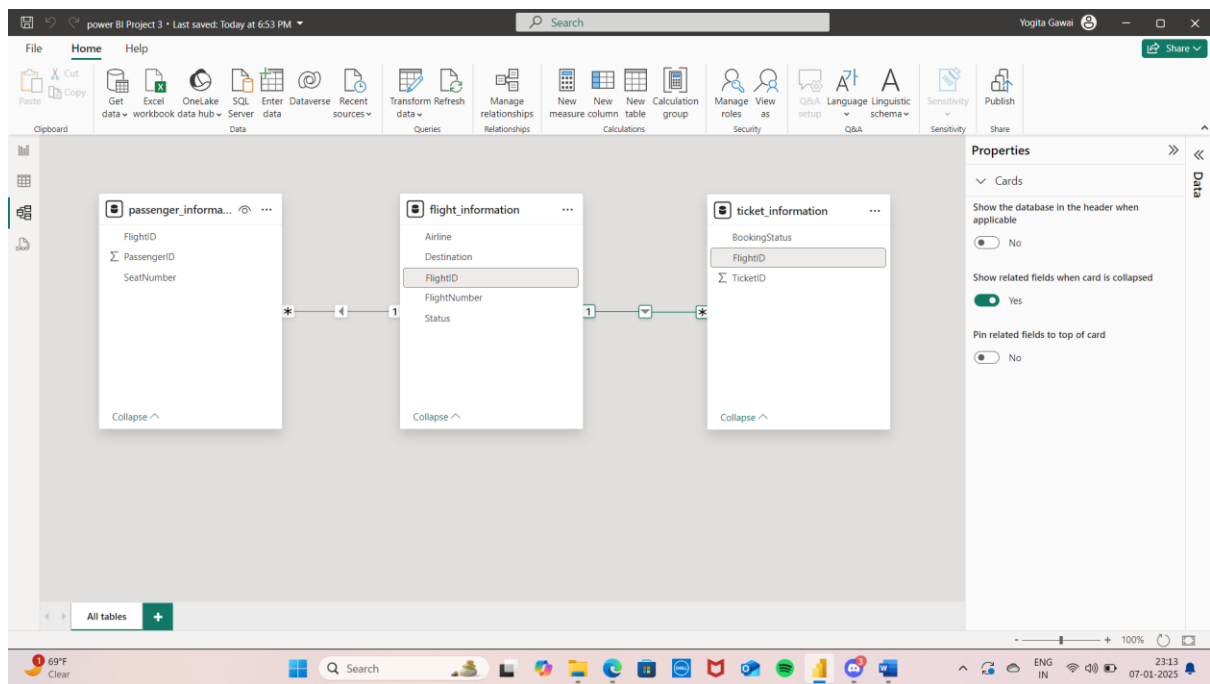
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Task 2:- . Data Modelling





Task 3 :- Enhanced Data Insights

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File Home Transform Add Column View Tools Help

Column From Custom Invoke Custom Examples * Column Function

Conditional Column Index Column Duplicate Column

Format Extract Parse

From Text From Number From Date & Time

Trigonometry - Rounding - Information -

Statistics Standard Scientific

Date Time Duration

Test Analytics

Vision Azure Machine Learning

AI Insights

Queries [3]

passenger_information

ticket_information

flight_information

Table.ReorderColumns(#Renamed Columns),{"FlightID", "FlightNumber", "FlightNumberOnly", "Airline", "Destination", "Status", "Flight"

	FlightNumber	FlightNumberOnly	Airline	Destination	Status	Flight Remark
1	2002 FL1102	1102	Airline D	Houston	On Time	Best
2	2002 FL1435	1435	Airline B	Chicago	On Time	Best
3	2003 FL1860	1860	Airline A	New York	Cancelled	To Be Improved
4	2004 FL1270	1270	Airline C	Chicago	Delayed	To Be Improved
5	2005 FL1106	1106	Airline C	New York	Delayed	To Be Improved
6	2006 FL1071	1071	Airline A	Phoenix	On Time	Best
7	2007 FL1700	1700	Airline C	Los Angeles	Cancelled	To Be Improved
8	2008 FL1020	1020	Airline C	Los Angeles	Delayed	To Be Improved
9	2009 FL1614	1614	Airline A	Los Angeles	Cancelled	To Be Improved
10	2010 FL1121	1121	Airline D	Chicago	Cancelled	To Be Improved
11	2011 FL1466	1466	Airline A	Phoenix	On Time	Best
12	2012 FL1214	1214	Airline D	New York	Delayed	To Be Improved
13	2013 FL1330	1330	Airline C	Houston	On Time	Best
14	2014 FL1458	1458	Airline C	New York	Delayed	To Be Improved
15	2015 FL1087	1087	Airline C	Houston	Delayed	To Be Improved
16	2016 FL1372	1372	Airline B	New York	Delayed	To Be Improved
17	2017 FL1099	1099	Airline D	Phoenix	Delayed	To Be Improved
18	2018 FL1871	1871	Airline B	Houston	Delayed	To Be Improved
19	2019 FL1863	1863	Airline B	Chicago	Cancelled	To Be Improved
20	2020 FL1130	1130	Airline A	New York	On Time	Best
21	2021 FL1661	1661	Airline B	New York	Cancelled	To Be Improved
22	2022 FL1308	1308	Airline A	Houston	Delayed	To Be Improved
23	2023 FL1769	1769	Airline A	Chicago	On Time	Best
24	2024 FL1343	1343	Airline B	Chicago	Delayed	To Be Improved
25	2025 FL1491	1491	Airline D	Phoenix	On Time	Best
26	2026 FL1413	1413	Airline D	Chicago	Cancelled	To Be Improved
27	2027 FL1805	1805	Airline D	Chicago	On Time	Best
28						

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

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67°F Clear

Search

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File Home Transform Add Column View Tools Help

Column From Custom Invoke Custom Examples * Column Function

Conditional Column Index Column Duplicate Column

Format Extract Parse

From Text From Number From Date & Time

Trigonometry - Rounding - Information -

Statistics Standard Scientific

Date Time Duration

Test Analytics

Vision Azure Machine Learning

AI Insights

Queries [3]

passenger_information

ticket_information

flight_information

Table.ReorderColumns(#Renamed Columns),{"FlightID", "FlightNumber", "FlightNumberOnly", "Airline", "Destination", "Status", "Flight"

	FlightNumber	FlightNumberOnly	Airline	Destination	Status	Flight Remark
1	2002 FL1102	1102	Airline D	Houston	On Time	Best
2	2002 FL1435	1435	Airline B	Chicago	On Time	Best
3	2003 FL1860	1860	Airline A	New York	Cancelled	To Be Improved
4	2004 FL1270	1270	Airline C	Chicago	Delayed	To Be Improved
5	2005 FL1106	1106	Airline C	New York	Delayed	To Be Improved
6	2006 FL1071	1071	Airline A	Phoenix	On Time	Best
7	2007 FL1700	1700	Airline C	Los Angeles	Cancelled	To Be Improved
8	2008 FL1020	1020	Airline C	Los Angeles	Delayed	To Be Improved
9	2009 FL1614	1614	Airline A	Los Angeles	Cancelled	To Be Improved
10	2010 FL1121	1121	Airline D	Chicago	Cancelled	To Be Improved
11	2011 FL1466	1466	Airline A	Phoenix	On Time	Best
12	2012 FL1214	1214	Airline D	New York	Delayed	To Be Improved
13	2013 FL1330	1330	Airline C	Houston	On Time	Best
14	2014 FL1458	1458	Airline C	New York	Delayed	To Be Improved
15	2015 FL1087	1087	Airline C	Houston	Delayed	To Be Improved
16	2016 FL1372	1372	Airline B	New York	Delayed	To Be Improved
17	2017 FL1099	1099	Airline D	Phoenix	Delayed	To Be Improved
18	2018 FL1871	1871	Airline B	Houston	Delayed	To Be Improved
19	2019 FL1863	1863	Airline B	Chicago	Cancelled	To Be Improved
20	2020 FL1130	1130	Airline A	New York	On Time	Best
21	2021 FL1661	1661	Airline B	New York	Cancelled	To Be Improved
22	2022 FL1308	1308	Airline A	Houston	Delayed	To Be Improved
23	2023 FL1769	1769	Airline A	Chicago	On Time	Best
24	2024 FL1343	1343	Airline B	Chicago	Delayed	To Be Improved
25	2025 FL1491	1491	Airline D	Phoenix	On Time	Best
26	2026 FL1413	1413	Airline D	Chicago	Cancelled	To Be Improved
27	2027 FL1805	1805	Airline D	Chicago	On Time	Best
28						

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

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67°F Clear

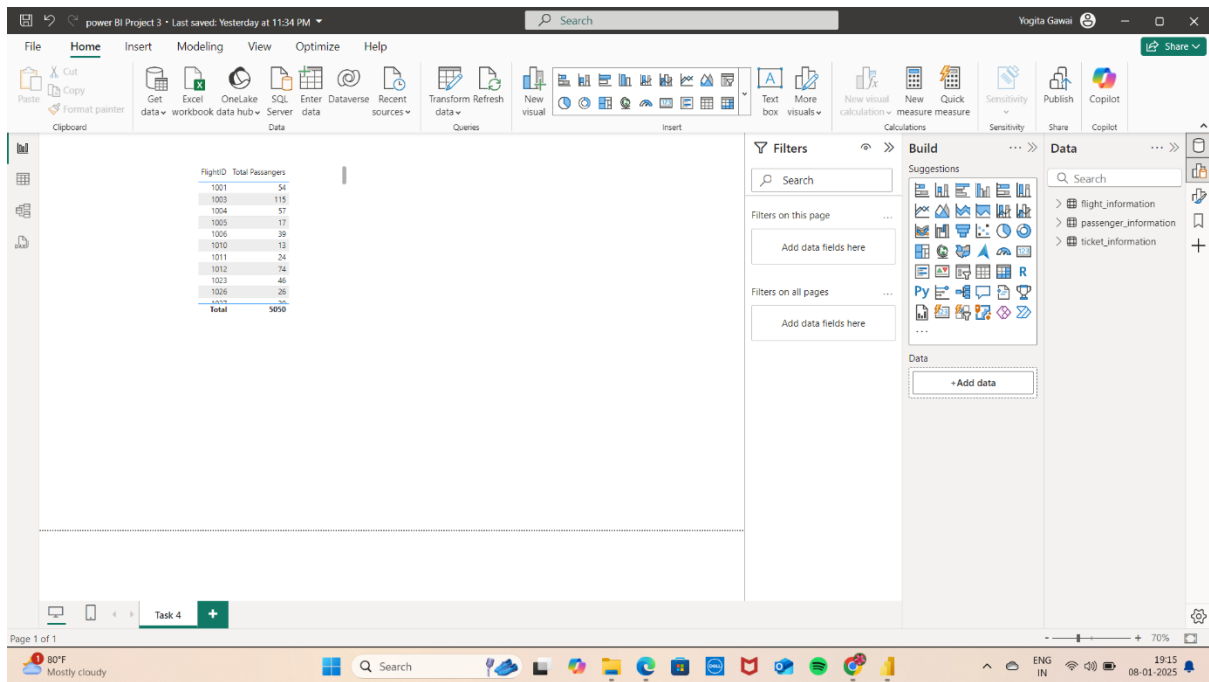
Search

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Task 4 :- Calculations Using DAX

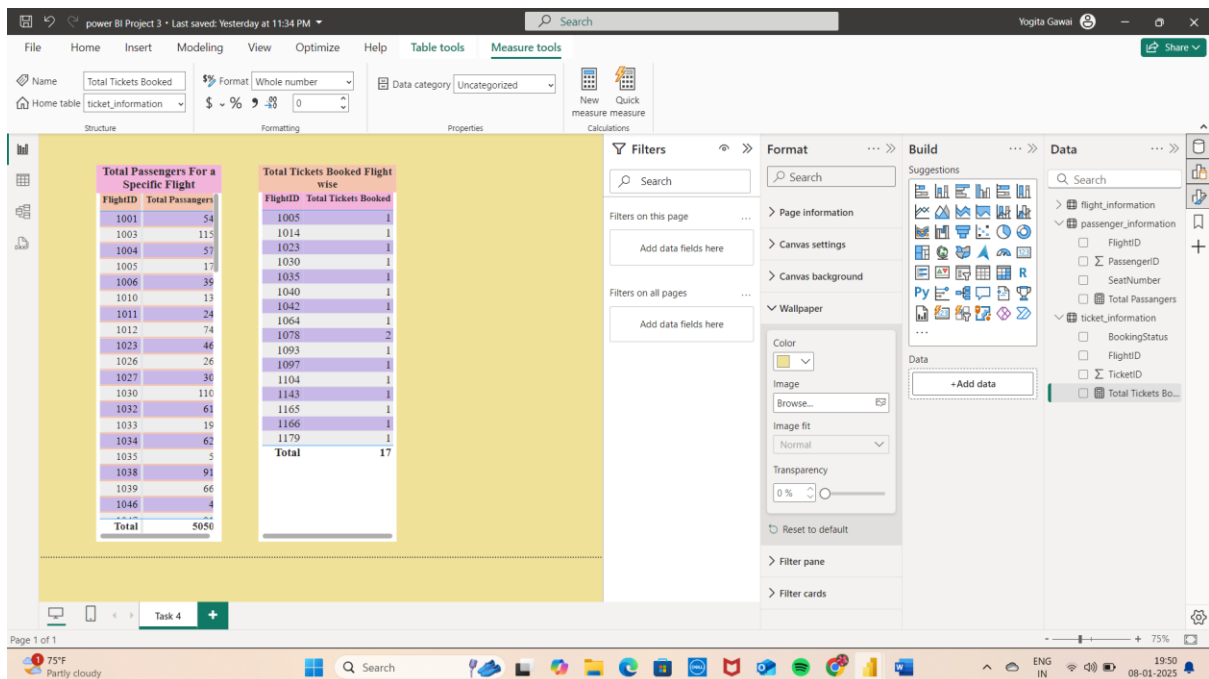
1)Total Passengers for a specific flight.

Total Passangers = sum(passenger_information[PassengerID])



2) Total Tickets Booked

TotalTicketBooked=
 COUNTROWS(FILTER(ticket_information, ticket_information[BookingStatus] = "Confirmed"))



3) Filtered table showing “Best” Flights only.

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Close & Apply New Source Recent Enter Data Data source settings Manage Parameters Refresh Preview Manage Query Choose Remove Columns Keep Rows Remove Rows Split Column Group By Data Type: Any Use First Row as Headers Replace Values Transform Merge Queries Append Queries Combine Files Combine Text Analytics Vision Azure Machine Learning AI Insights

Queries [4]

passenger_information
ticket_information
flight_information
flight_information Duplic...

Table.SelectRows(#"Removed Duplicates", each ([Flight Remark] = "Best"))

FlightID	FlightNumber	FlightNumberOnly	Airline	Destination	Status	Flight Remark
1	1001	FL1102	Airline D	Houston	On Time	Best
2	1002	FL1435	Airline B	Chicago	On Time	Best
3	1006	FL1071	Airline A	Phoenix	On Time	Best
4	1011	FL1466	Airline A	Phoenix	On Time	Best
5	1013	FL1330	Airline C	Houston	On Time	Best
6	1020	FL1130	Airline A	New York	On Time	Best
7	1023	FL1769	Airline A	Chicago	On Time	Best
8	1025	FL1491	Airline D	Phoenix	On Time	Best
9	1027	FL1805	Airline D	Chicago	On Time	Best
10	1028	FL1385	Airline D	Chicago	On Time	Best
11	1029	FL1191	Airline D	Los Angeles	On Time	Best
12	1030	FL1955	Airline B	Phoenix	On Time	Best
13	1031	FL1276	Airline B	New York	On Time	Best
14	1033	FL1459	Airline D	New York	On Time	Best
15	1034	FL1313	Airline B	Phoenix	On Time	Best
16	1036	FL1252	Airline D	Phoenix	On Time	Best
17	1039	FL1560	Airline B	Chicago	On Time	Best
18	1043	FL1681	Airline C	Houston	On Time	Best
19	1044	FL1475	Airline B	Phoenix	On Time	Best
20	1046	FL1975	Airline D	Chicago	On Time	Best
21	1048	FL1189	Airline A	New York	On Time	Best
22	1050	FL1686	Airline C	Phoenix	On Time	Best
23	1052	FL1562	Airline D	Phoenix	On Time	Best
24	1053	FL1875	Airline C	Chicago	On Time	Best
25	1055	FL1243	Airline B	New York	On Time	Best
26	1057	FL1504	Airline A	Phoenix	On Time	Best
27	1060	FL1818	Airline D	Chicago	On Time	Best
28						

7 COLUMNS, 82 ROWS Column profiling based on top 1000 rows

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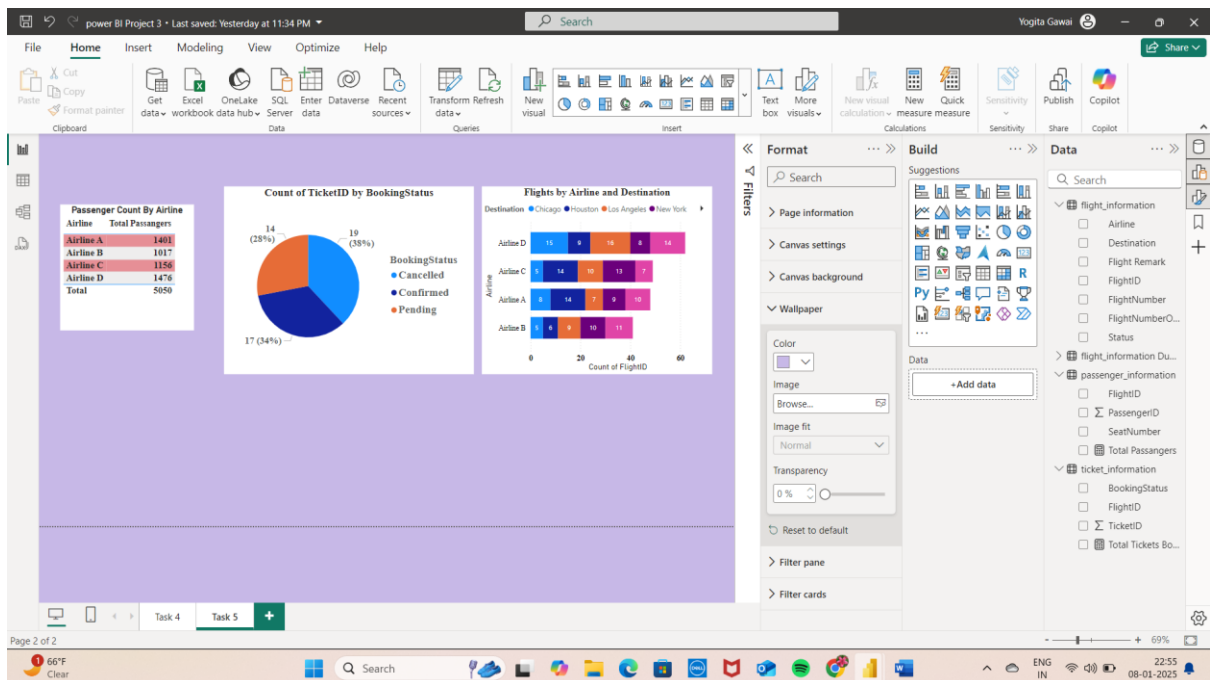
76°F Mostly cloudy

Search

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5. Visualization and Interactive Features

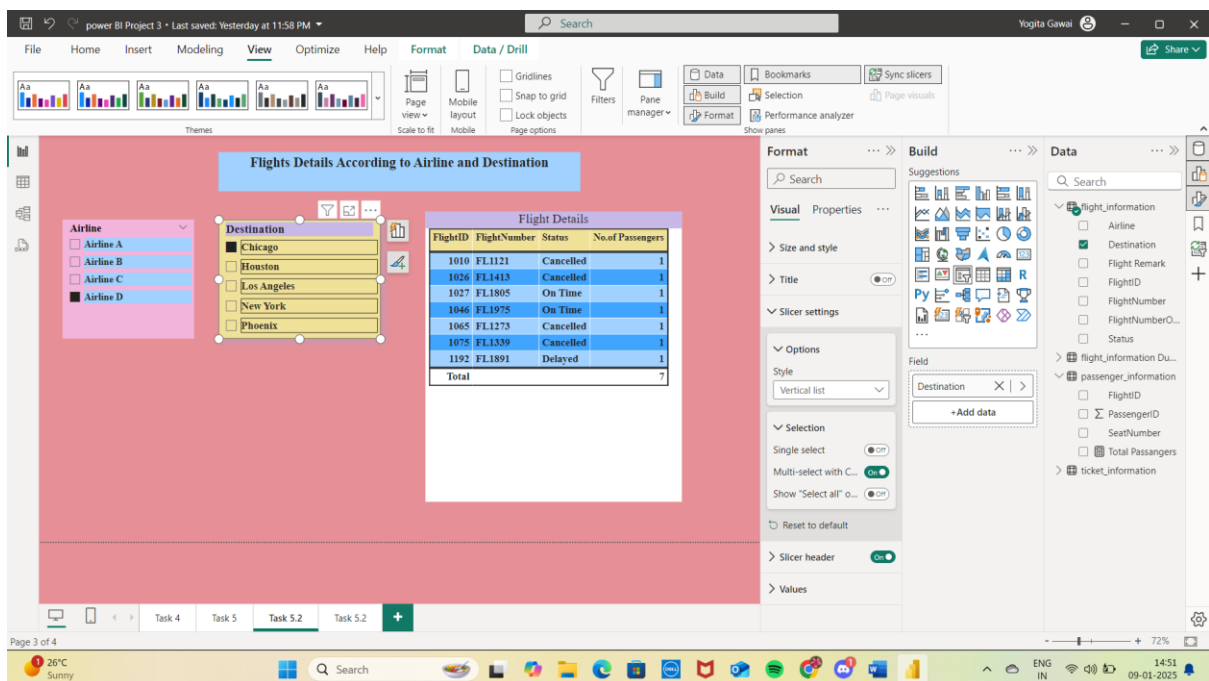
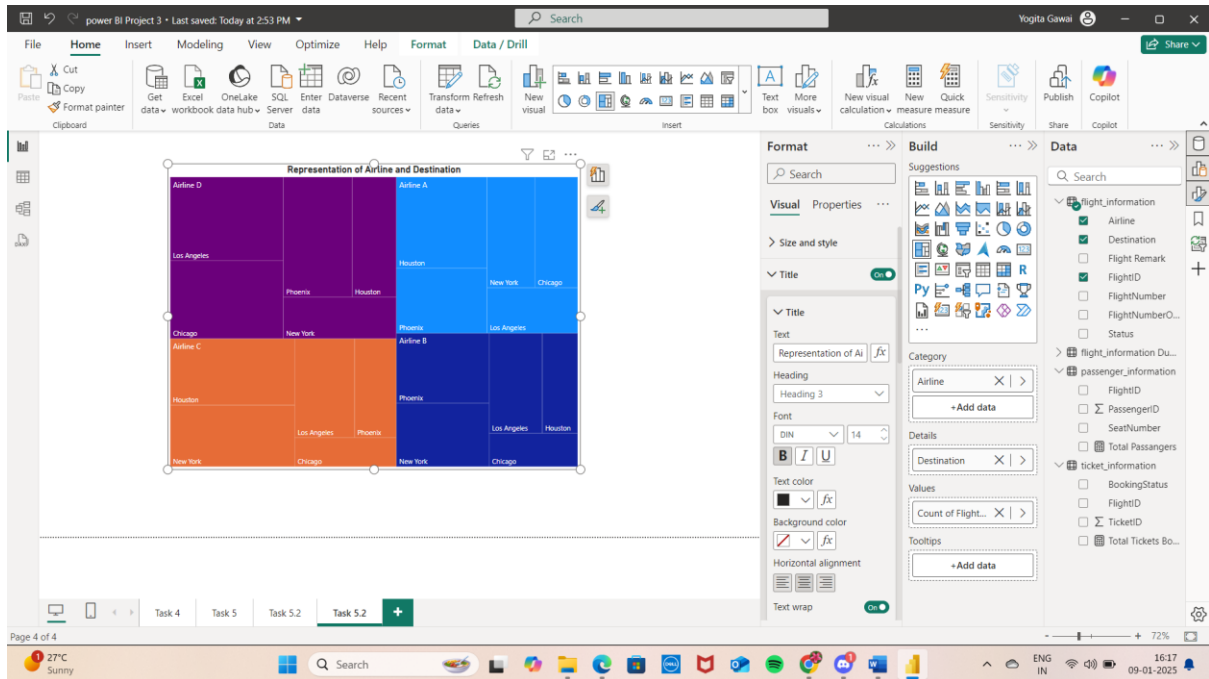
- Create visuals for:
 - Passenger count by airline.
 - Ticket booking statuses
 - Flights by airline and destination



Add interactive features for:

- Destination and Airline.

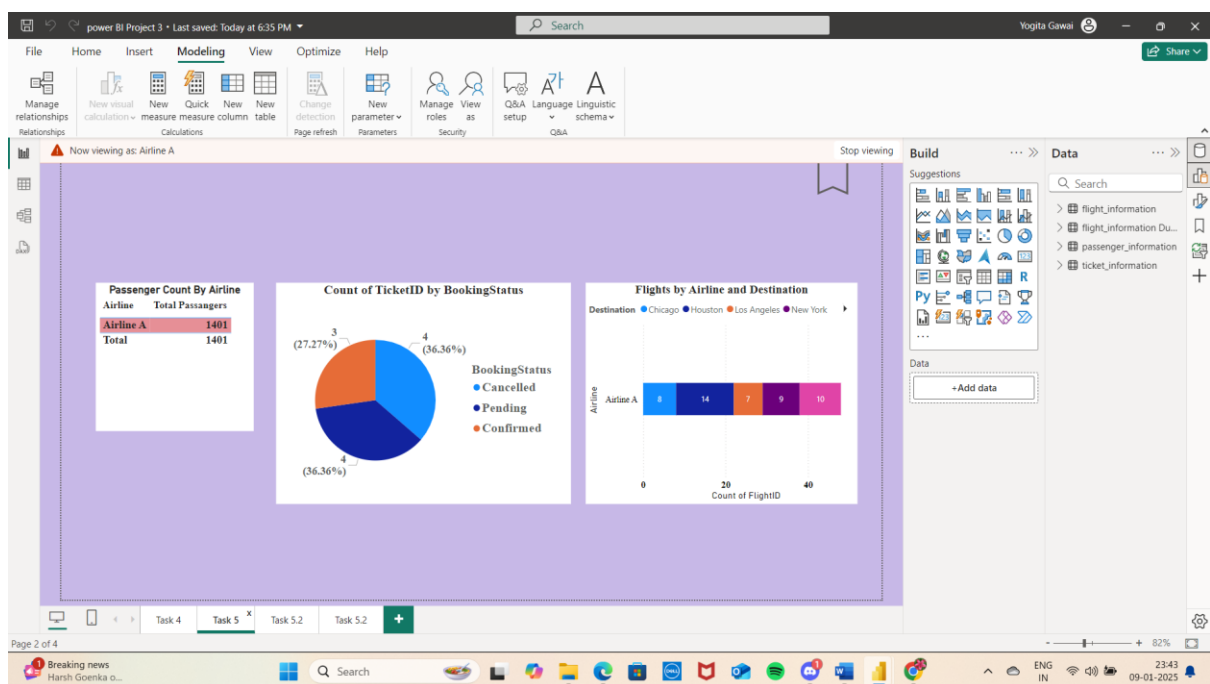
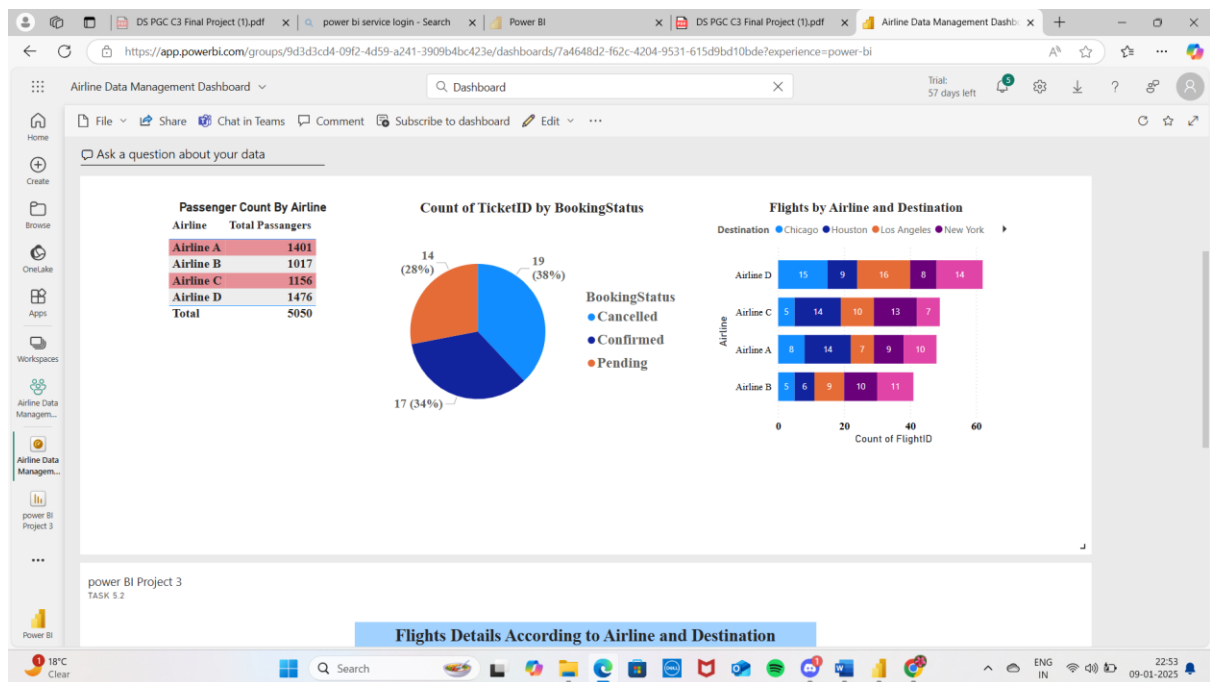
- Quick views.
- Airline-specific pages

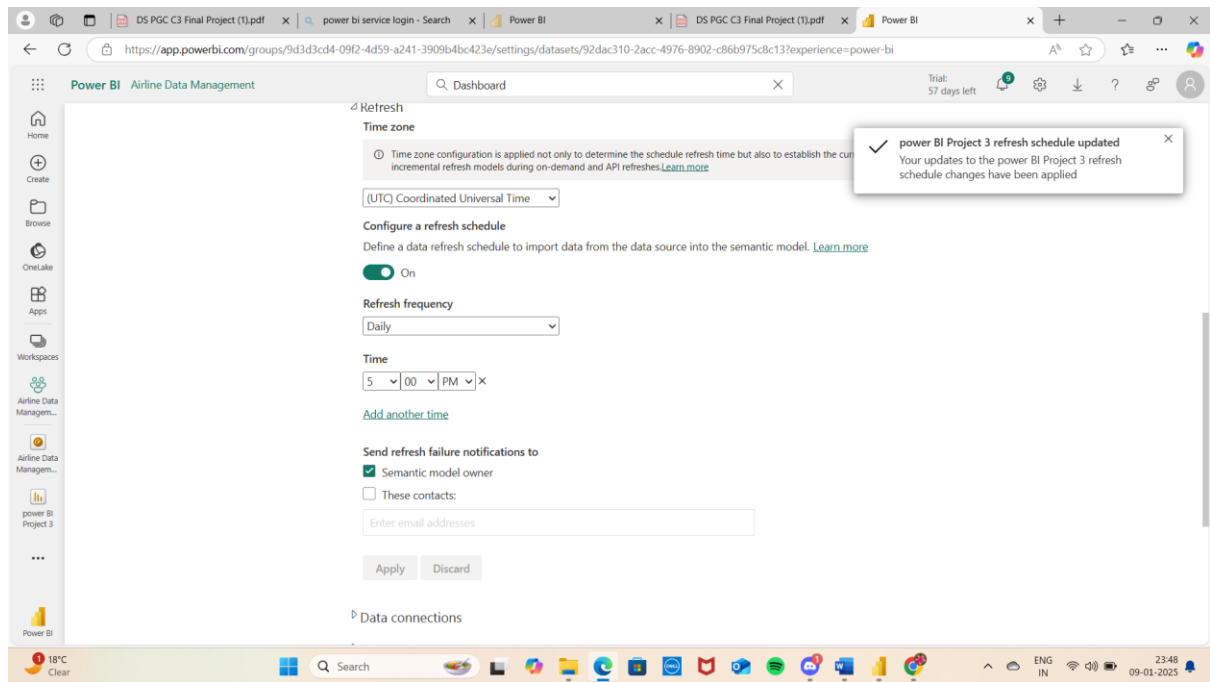


Task 6 :- . Final Dashboard and Power BI Service

- 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 schedule refresh at 5 PM daily





Video Link: -

<https://drive.google.com/file/d/1kDn3Hhm-TcSGqRAVgkPfK7iO8qsOZ0v/view?usp=drivesdk>