

1) DATA PREPARATION AND CLEANING

[illegible]

Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 14:03

C3 PROJECT

FileHomeTransformAdd ColumnViewToolsHelp

Close & Apply
Close

New Source
New Query

Recent Sources
Enter Data

Data source settings
Data Sources

Manage Parameters
Parameters

Refresh Preview
Query

Properties
Advanced Editor
Manage

Choose Columns
Remove Columns
Manage Columns

Keep Rows
Remove Rows
Reduce Rows

Sort

Split Column
Group By
Transform

Data Type: Whole Number
Use First Row as Headers
Replace Values

Merge Queries
Append Queries
Combine Files
Combine

Text Analytics
Vision
Azure Machine Learning
AI Insights

Queries [3]

flight_information

passenger_information

ticket_information

= Table.SelectRows("#Removed Duplicates", each not List.IsEmpty(List.RemoveMatchingItems

	PassengerID	FlightID	SeatNumber
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

Query Settings

PROPERTIES

Name
passenger_information

All Properties

APPLIED STEPS

Source

Navigation

Promoted Headers

Changed Type

Removed Columns

Removed Duplicates

X Removed Blank Rows

3 COLUMNS, 100 ROWS

Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 14:03

File Home Transform Add Column View Tools Help

Close & Apply New Source Recent Sources Enter Data Data source settings Manage Parameters Refresh Preview Advanced Editor Choose Columns Remove Columns Keep Rows Remove Rows Sort Split Column Group By Data Type: Whole Number Use First Row as Headers Replace Values Merge Queries Append Queries Combine Files Text Analytics Vision Azure Machine Learning

Queries [3]

- flight_information
- passenger_information
- ticket_information

Query Settings

PROPERTIES

Name

ticket_information

APPLIED STEPS

- Source
- Navigation
- Promoted Headers
- Changed Type
- Removed Columns
- Removed Duplicates
- Removed Blank Rows

3 COLUMNS, 50 ROWS Column profiling based on top 1000 rows PREVIEW DOWNLOADED AT 14:03

	TicketID	FlightID	BookingStatus
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	1025	Confirmed

Steps :-

1) Removed NULL columns from all the tables i.e., Flight Information, Passenger Information & Ticket Information.

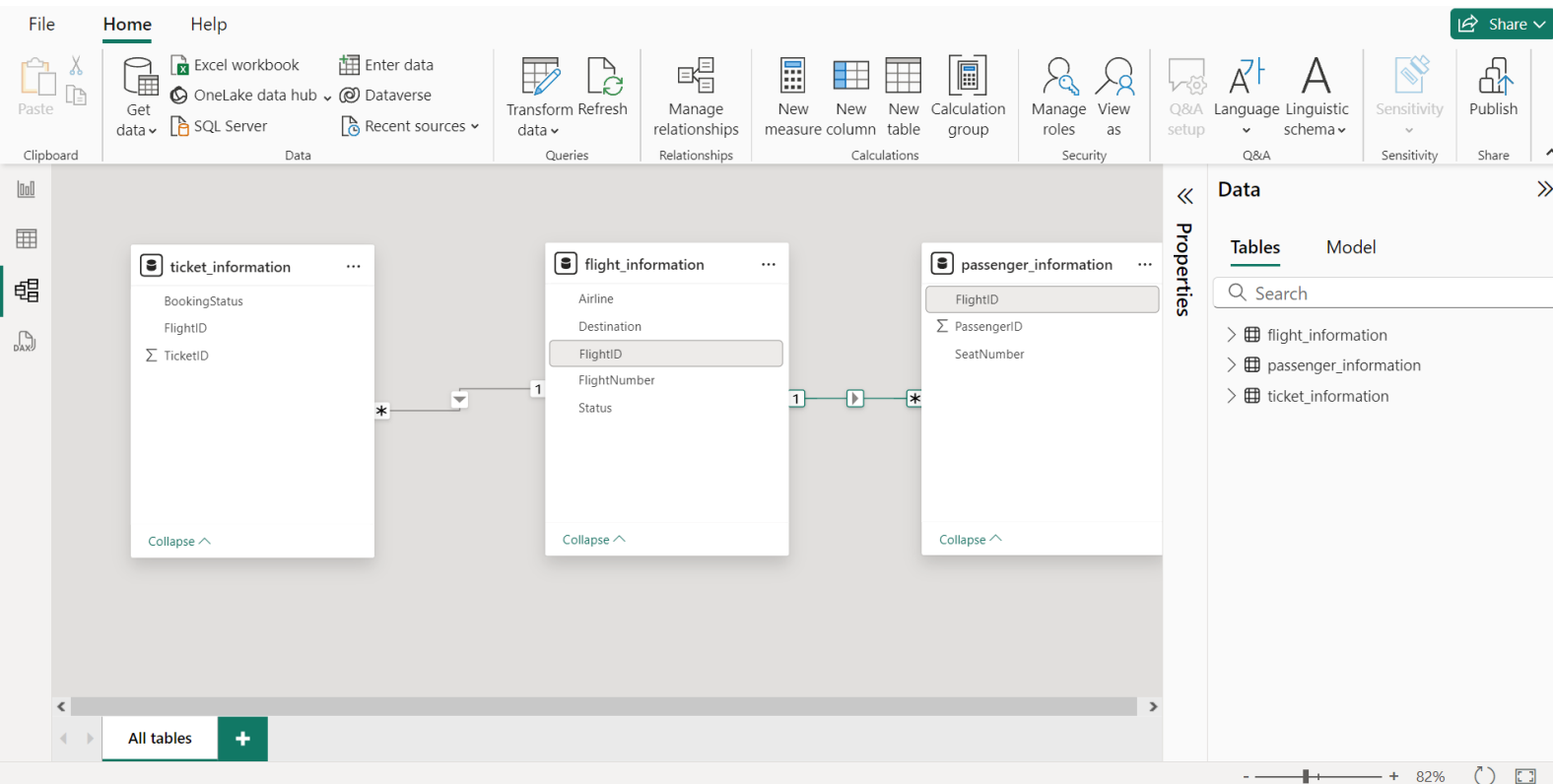
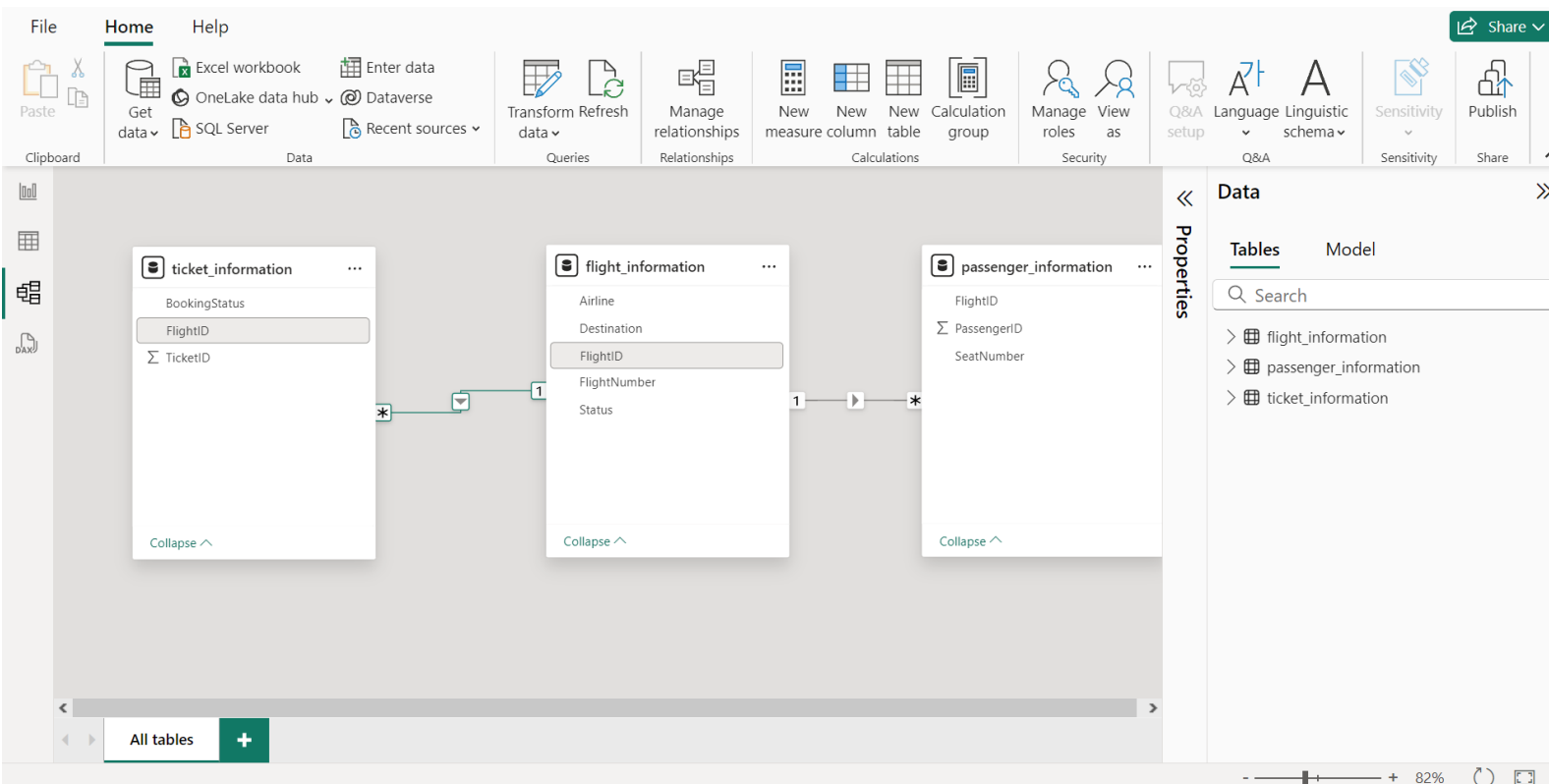
2) Replaced the Airline column in the 1st SS typed under Values to find Airline , Replaced with blank->

3)Removed Duplicates, Removed Blank Rows , checked data type & Done formatting.

4) Thus, extracted and transformed data & Cleaned data: removed duplicates, handled missing values, and formatted columns.

Please ref. to the screenshots of power query editor mentioned above showing cleaned data.

2) DATA MODELLING



Manage relationships



+ New relationship

⚡ Autodetect

✎ Edit

🗑 Delete

≡ Filter ▾

<input type="checkbox"/>	From: table (column) ↑	Relationship	To: table (column)	Status	
<input type="checkbox"/>	passenger_information (Flightl...	* — ◀ — 1	flight_information (FlightID)	Active	...
<input type="checkbox"/>	ticket_information (FlightID)	* — ◀ — 1	flight_information (FlightID)	Active	...

Steps Taken:-

1) Created relationships between the datasets (Flight ID as the key) as you can see in the above-mentioned screenshots on Pg.3

2) The cardinality is many to one.

3) ENHANCED DATA INSIGHTS

File

Home

Transform

Column From Examples

Custom Column

Invoke Custom Function

Conditional Column

Index Column

Duplicate Column

Add Column

View

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Format

ABC 123 Extract

Parse

Merge Columns

Extract

Parse

Statistics

Standard Scientific

Information

10²

Rounding

Information

Trigonometry

Information

Date

Time

Duration

Text Analytics

Vision

Azure Machine Learning

AI Insights

Queries [3]

flight_information

passenger_information

ticket_information

[Status], "On Time" then "Best" else "To be improved ")

	Airline	Destination	Status	Flights Classification
1	D	Houston	On Time	Best
2	B	Chicago	On Time	Best
3	A	New York	Cancelled	To be improved
4	C	Chicago	Delayed	To be improved
5	C	New York	Delayed	To be improved
6	A	Phoenix	On Time	Best
7	C	Los Angeles	Cancelled	To be improved
8	C	Los Angeles	Delayed	To be improved
9	A	Los Angeles	Cancelled	To be improved
10	D	Chicago	Cancelled	To be improved
11	A	Phoenix	On Time	Best
12	D	New York	Delayed	To be improved
13	C	Houston	On Time	Best
14	C	New York	Delayed	To be improved
15	C	Houston	Delayed	To be improved
16	B	New York	Delayed	To be improved
17	D	Phoenix	Delayed	To be improved
18	B	Houston	Delayed	To be improved
19	B	Chicago	Cancelled	To be improved
20	A	New York	On Time	Best
21	B	New York	Cancelled	To be improved

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

Query Settings

PROPERTIES

Name

flight_information

All Properties

APPLIED STEPS

Source

Navigation

Promoted Headers

Changed Type

Removed Columns

Removed Duplicates

Replaced Value

Removed Blank Rows

Added Conditional Column

PREVIEW DOWNLOADED AT 14:03

File

Home

Transform

Column From Examples

Custom Column

Invoke Custom Function

Conditional Column

Index Column

Duplicate Column

Add Column

View

Tools

Help

Format

ABC 123 Extract

Parse

Merge Columns

Extract

Parse

Statistics

Standard Scientific

Information

10²

Rounding

Information

Trigonometry

Information

Date

Time

Duration

Text Analytics

Vision

Azure Machine Learning

AI Insights

Queries [3]

flight_information

passenger_information

ticket_information

= Table.ReorderColumns("#Inserted Text After Delimiter",{"FlightID", "FlightNumber",

	FlightID	FlightNumber	Flight Number (Extracted)	Airline	Destin
1	1001	FL1102	1102	D	Housto
2	1002	FL1435	1435	B	Chicago
3	1003	FL1860	1860	A	New Yc
4	1004	FL1270	1270	C	Chicago
5	1005	FL1106	1106	C	New Yc
6	1006	FL1071	1071	A	Phoeni
7	1007	FL1700	1700	C	Los Ang
8	1008	FL1020	1020	C	Los Ang
9	1009	FL1614	1614	A	Los Ang
10	1010	FL1121	1121	D	Chicago
11	1011	FL1466	1466	A	Phoeni
12	1012	FL1214	1214	D	New Yc
13	1013	FL1330	1330	C	Housto
14	1014	FL1458	1458	C	New Yc
15	1015	FL1087	1087	C	Housto
16	1016	FL1372	1372	B	New Yc
17	1017	FL1099	1099	D	Phoeni
18	1018	FL1871	1871	B	Housto
19	1019	FL1663	1663	B	Chicago
20	1020	FL1130	1130	A	New Yc
21	1021	FL1661	1661	B	New Yc

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

Query Settings

PROPERTIES

Name

flight_information

All Properties

APPLIED STEPS

Source

Navigation

Promoted Headers

Changed Type

Removed Columns

Removed Duplicates

Replaced Value

Removed Blank Rows

Added Conditional Column

Inserted Text After Delimiter

Reordered Columns

PREVIEW DOWNLOADED AT 14:03

Steps :-

1) In the 1st SS in the Flight Information Table Classified flights as “Best” which are “On Time” and classified other flights as "To Be Improved" which are “Cancelled” or “Delayed” by using “Conditional Column”

2) In the 2nd SS selected flight number column → Created column from examples → Typed no. for ex:-1102 → Pressed enter → Ok → Arranged columns.

4) CALCULATIONS USING DAX

File Home Insert Modeling View Optimize Help Table tools Measure tools

Name: Total Passengers fo... Format: Whole number Data category: Uncategorized

Home table: Measure Table

Structure: Formatting: Properties: Calculations: New measure Quick measure

Visualizations: Build visual

Data: Search

Measure Table

- Total Passengers for a specific fl...
- Total Tickets Booked

Best flights

- Airline
- Destination
- Flight Number (Extracted)
- FlightID
- FlightNumber
- Flights Classification
- Status

flight_information

passenger_information

- FlightID
- PassengerID
- SeatNumber

1 Total Passengers for a specific flight B = calculate(COUNT (passenger_information[PassengerID]),'flight_information'[Airline] ="Airline B")

20

Total Passengers for a specific flight B

Page 1 Page 2 +

Page 2 of 2

File Home Insert Modeling View Optimize Help Table tools Measure tools

Name: Total Tickets Booked Format: Whole number Data category: Uncategorized

Home table: Measure Table

Structure: Formatting: Properties: Calculations: New measure Quick measure

Bookmarks: Add View

Visualizations: Build visual

Data: Search

Measure Table

- Total Passeng...
- Total Ticket...

Best flights

flight_information

- Airline
- Destination
- Flight Number...
- FlightID
- FlightNumber
- Flights Classifi...
- Status

passenger_informati...

- FlightID
- PassengerID
- SeatNumber

1 Total Tickets Booked = CALCULATE(COUNT(ticket_information[BookingStatus]), ticket_information[BookingStatus]="Confirmed")

17

Total Tickets Confirmed

Page 1 Page 2 Count of passenger Id by Airline Ticket Booking Sta +

Learn how to create and edit bookmarks

Page 1 of 7

File Home Help **Table tools** Share

Name Best flights

Structure

Mark as date table Calendars

Manage relationships Relationships

New measure Quick measure New column New table Calculations

1 Best flights = FILTER(flight_information,flight_information[Flights Classification]="Best")

FlightID	FlightNumber	Airline	Destination	Status	Flight Number (Extracted)	Flights Classification
1001	FL1102	D	Houston	On Time	1102	Best
1002	FL1435	B	Chicago	On Time	1435	Best
1006	FL1071	A	Phoenix	On Time	1071	Best
1011	FL1466	A	Phoenix	On Time	1466	Best
1013	FL1330	C	Houston	On Time	1330	Best
1020	FL1130	A	New York	On Time	1130	Best
1023	FL1769	A	Chicago	On Time	1769	Best
1025	FL1491	D	Phoenix	On Time	1491	Best
1027	FL1805	D	Chicago	On Time	1805	Best
1028	FL1385	D	Chicago	On Time	1385	Best
1029	FL1191	D	Los Angeles	On Time	1191	Best
1030	FL1955	B	Phoenix	On Time	1955	Best
1031	FL1276	B	New York	On Time	1276	Best
1033	FL1459	D	New York	On Time	1459	Best
1034	FL1313	B	Phoenix	On Time	1313	Best
1036	FL1252	D	Phoenix	On Time	1252	Best
1039	FL1560	B	Chicago	On Time	1560	Best
1043	FL1681	C	Houston	On Time	1681	Best
1044	FL1475	B	Phoenix	On Time	1475	Best
1046	FL1975	D	Chicago	On Time	1975	Best

Table: Best flights (82 rows)

Data

Search

- Measure Table
- Best flights**
- flight_information
- passenger_information
- ticket_information

Steps Taken :-

1) Calculated Total Passengers for a Specific Flight using DAX as you can see in the 1st Screenshot.

DAX :-

Total Passengers for a specific flight B =
`calculate(COUNT(passenger_information[PassengerID]),'flight_information'[Airline]="Airline B")`

2) Calculated Total Tickets Booked using DAX as you can see in the 2nd Screenshot.

DAX :-

Total Tickets Booked =
`CALCULATE(COUNT(ticket_information[BookingStatus]),ticket_information[BookingStatus]="Confirmed")`

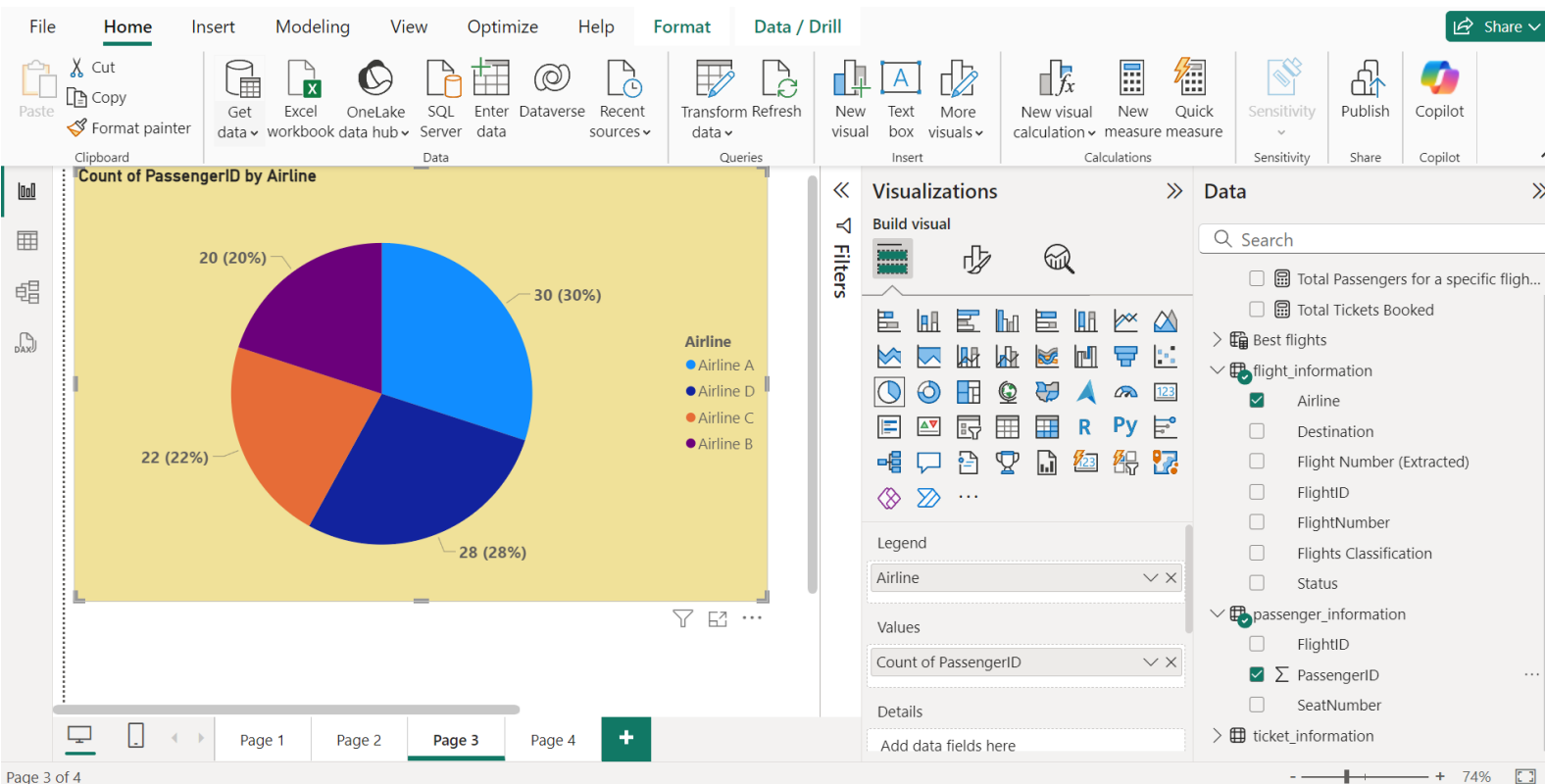
3) Created Filtered table which is showing "Best" flights only as you can see in the 3rd Screenshot.

DAX :-

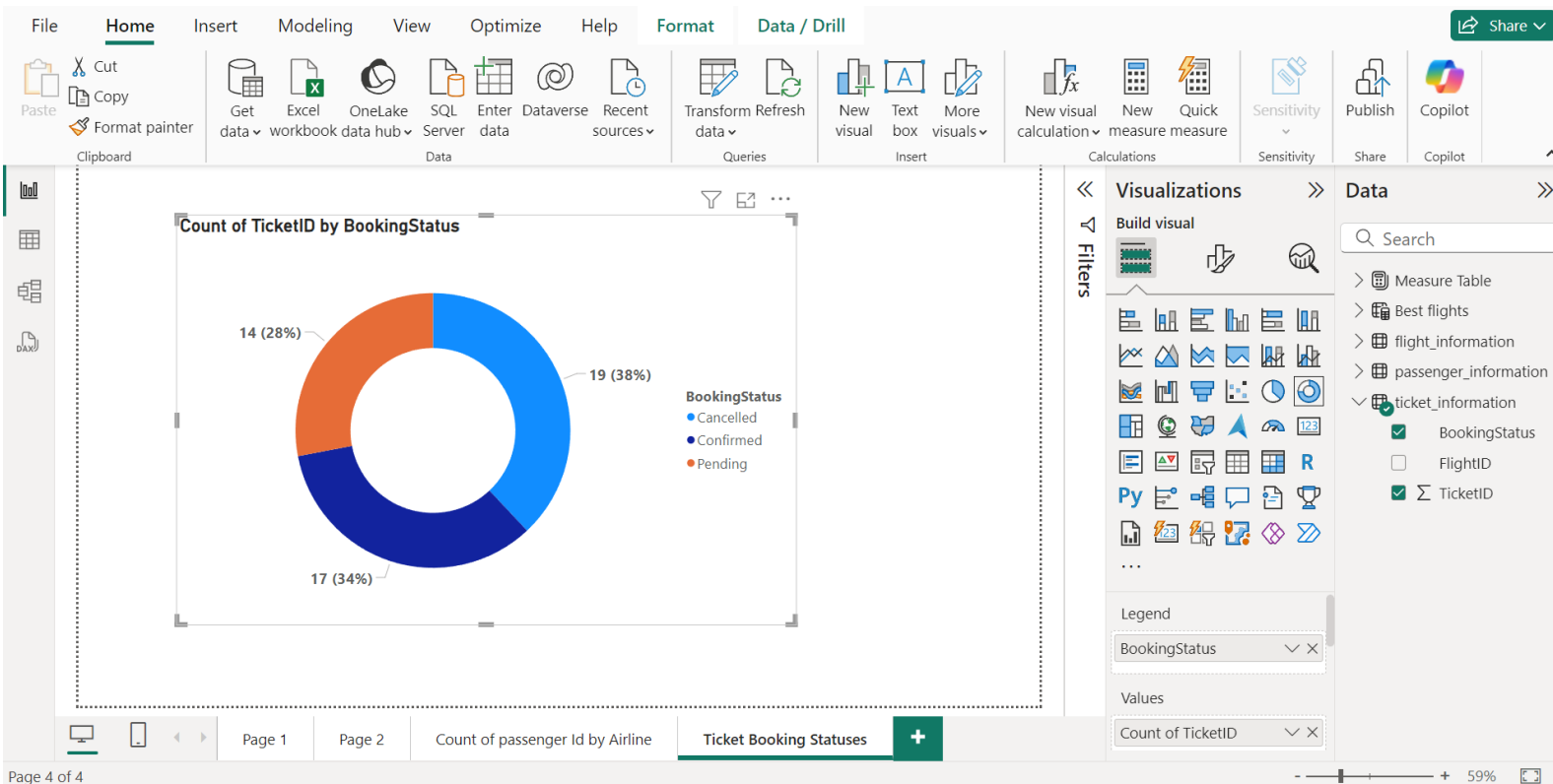
Best flights = `FILTER(flight_information,flight_information[Flights Classification]="Best")`

5) VISUALIZATION AND INTERACTIVE FEATURES

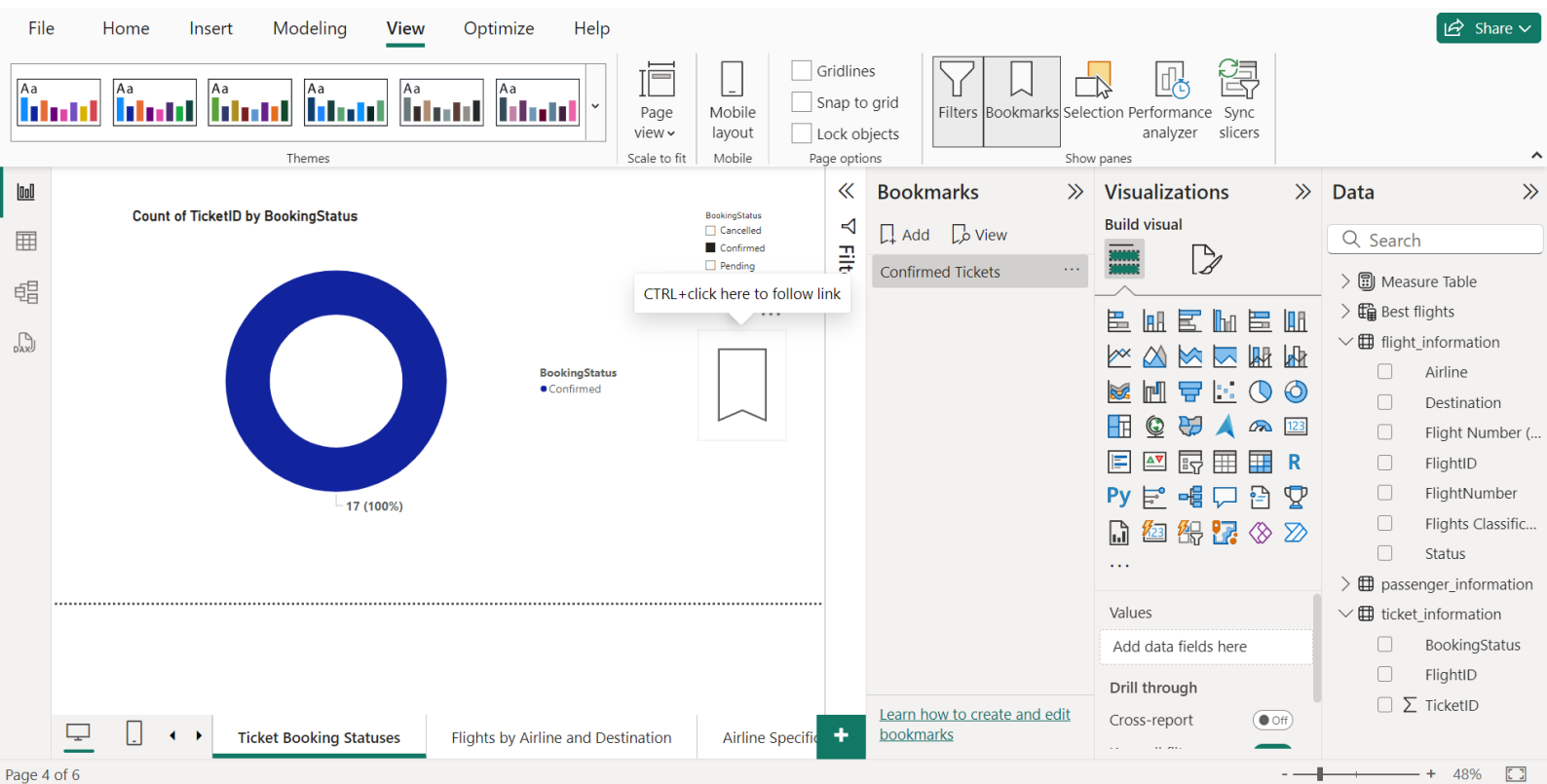
a) Passenger Count by Airline :- Used **Pie chart** to show passenger count by Airline.



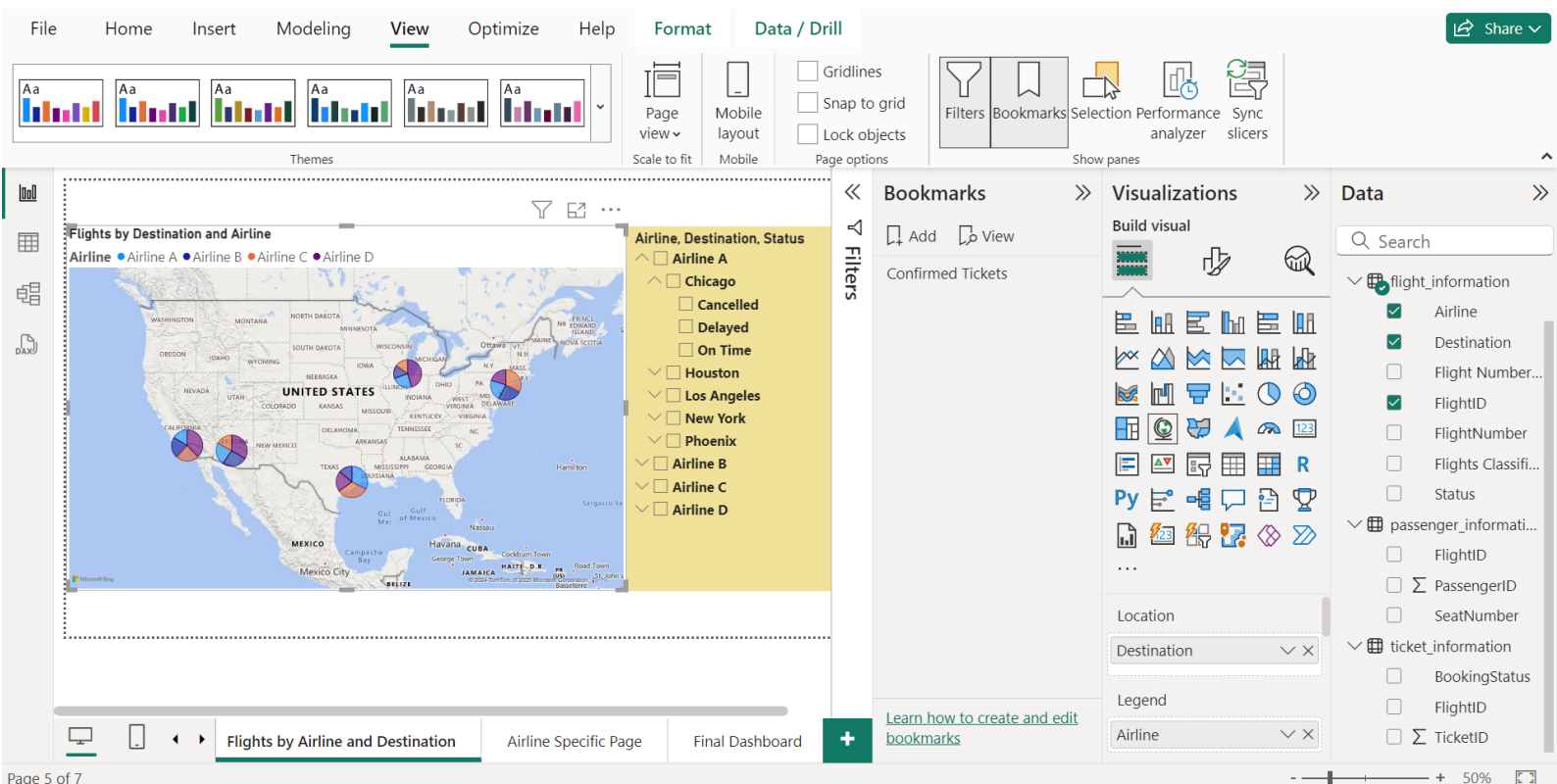
b) Ticket Booking Statuses :- Created a **Donut chart** to show Ticket booking status as **cancelled, confirmed or pending**.



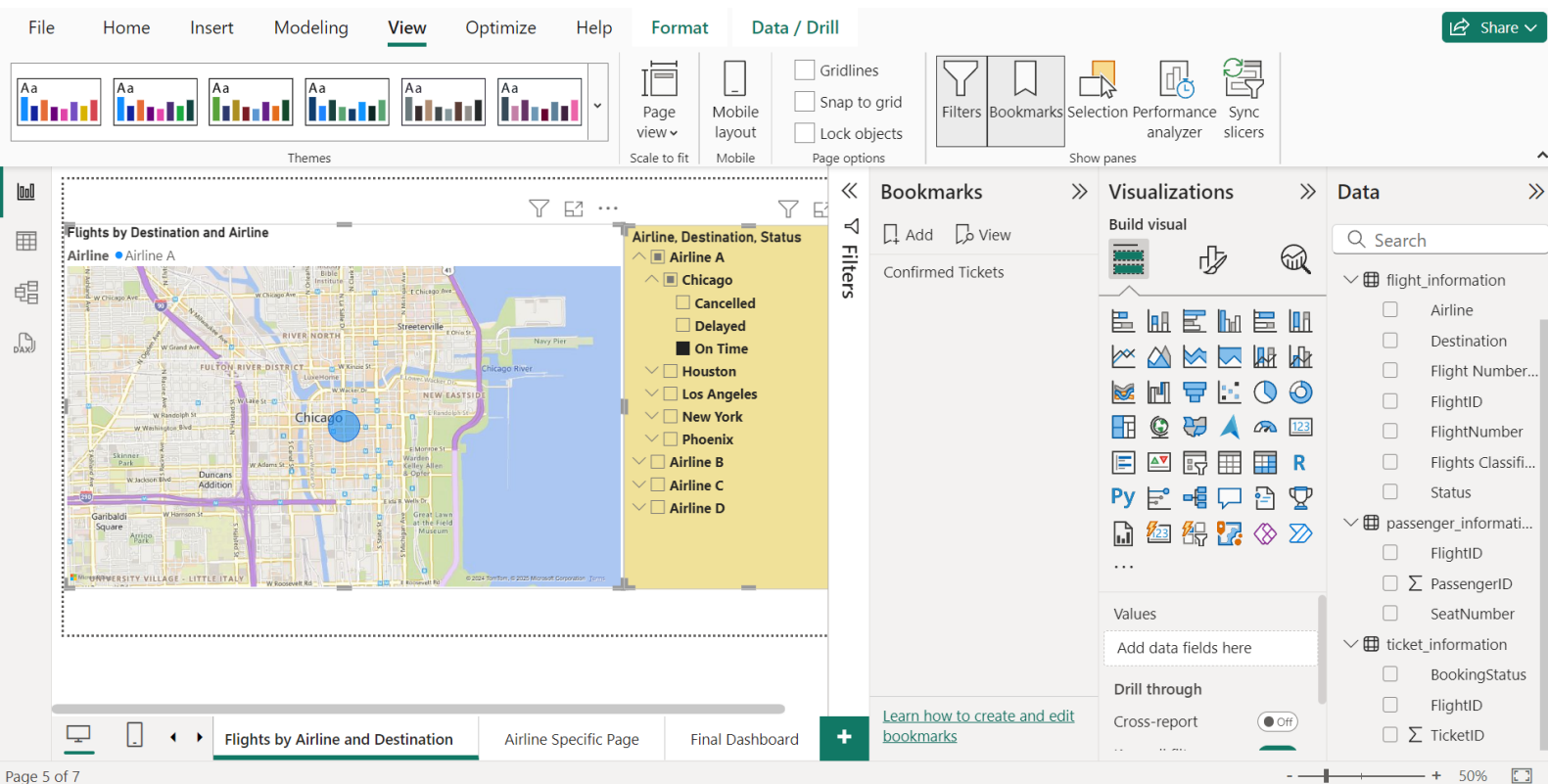
B 2nd Part) Slicer & Bookmark for Quick View



c) Flights by airline and destination :- Added **Map Visual** to show **Flights by Airlines and Destination** and added **Slicer** as an interactive feature (Info. About slicer is mentioned after this page)

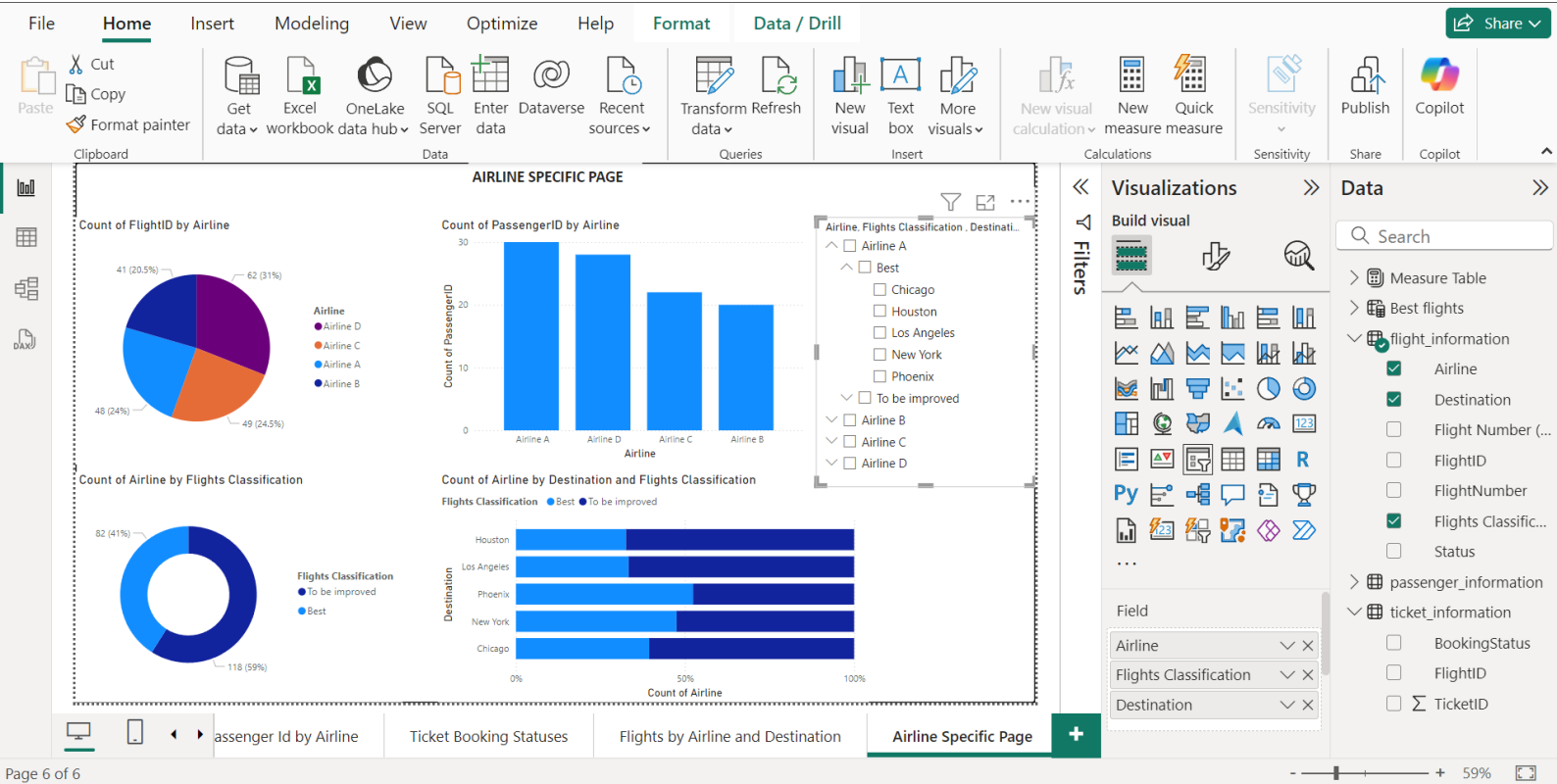


Slicer filter(Interactive Feature) for the above-mentioned screenshot:-



The above-mentioned screenshot shows the **Airline A Flights which are from Chicago & are on time.**

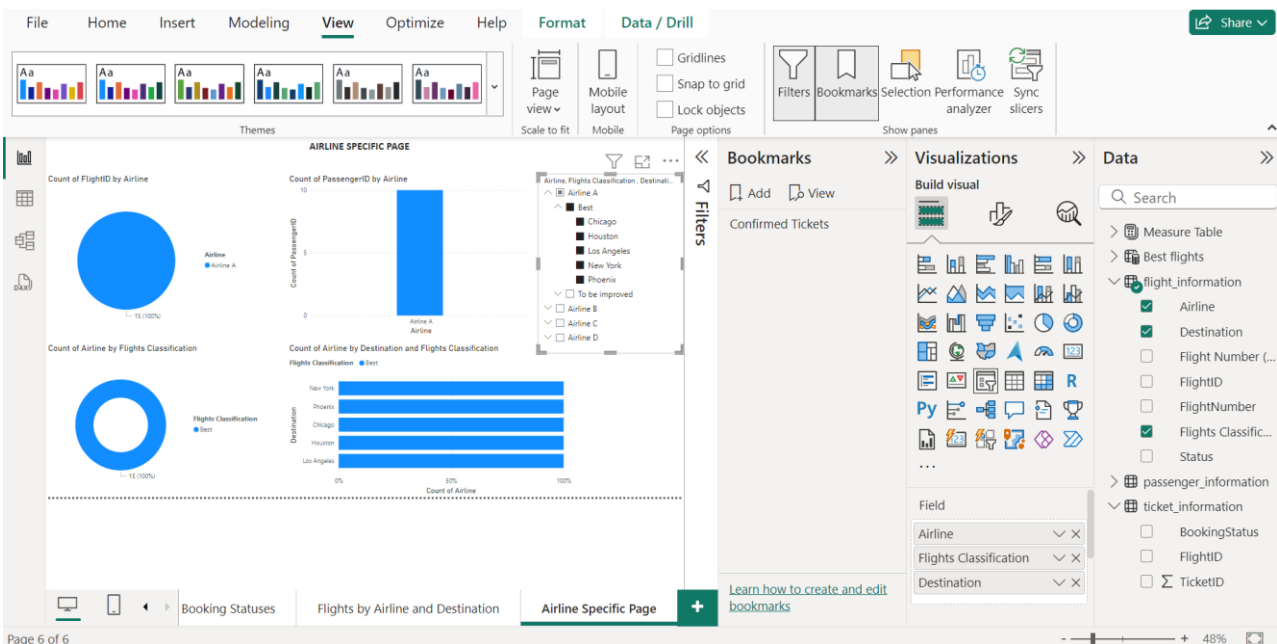
d) Airline Specific Page



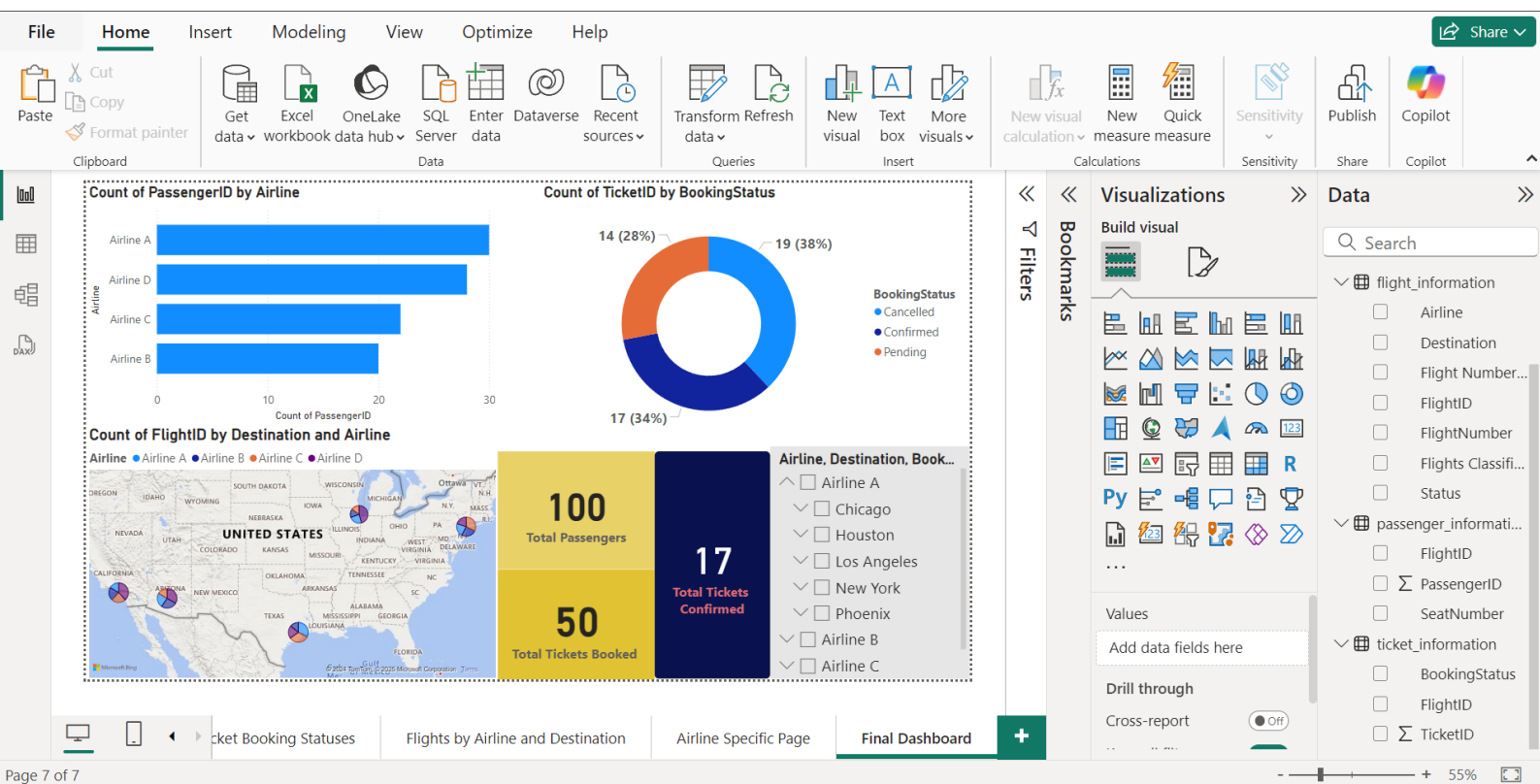
The Airline Specific page specifies the Information related to Airlines which includes :- Count of flight Id by Airline, Count of Passenger by Airline, count of Airline by Flight Classification, Count of Airline by destination and flights classification.

Added Slicer which helps in filtering and defining Airlines which are best according to the destination.

As you can see below in the mentioned screenshot:-



6. FINAL DASHBOARD AND POWER BI SERVICE



Steps Taken :-

1) Designed a Comprehensive Dashboard which shows:-

Stacked Bar Chart :- showing No. of passengers by Airline.

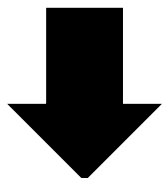
Map Visual :- Shows Count of flights by Destination and Airline .

Donut Chart :- Shows No. of Tickets by Booking Status

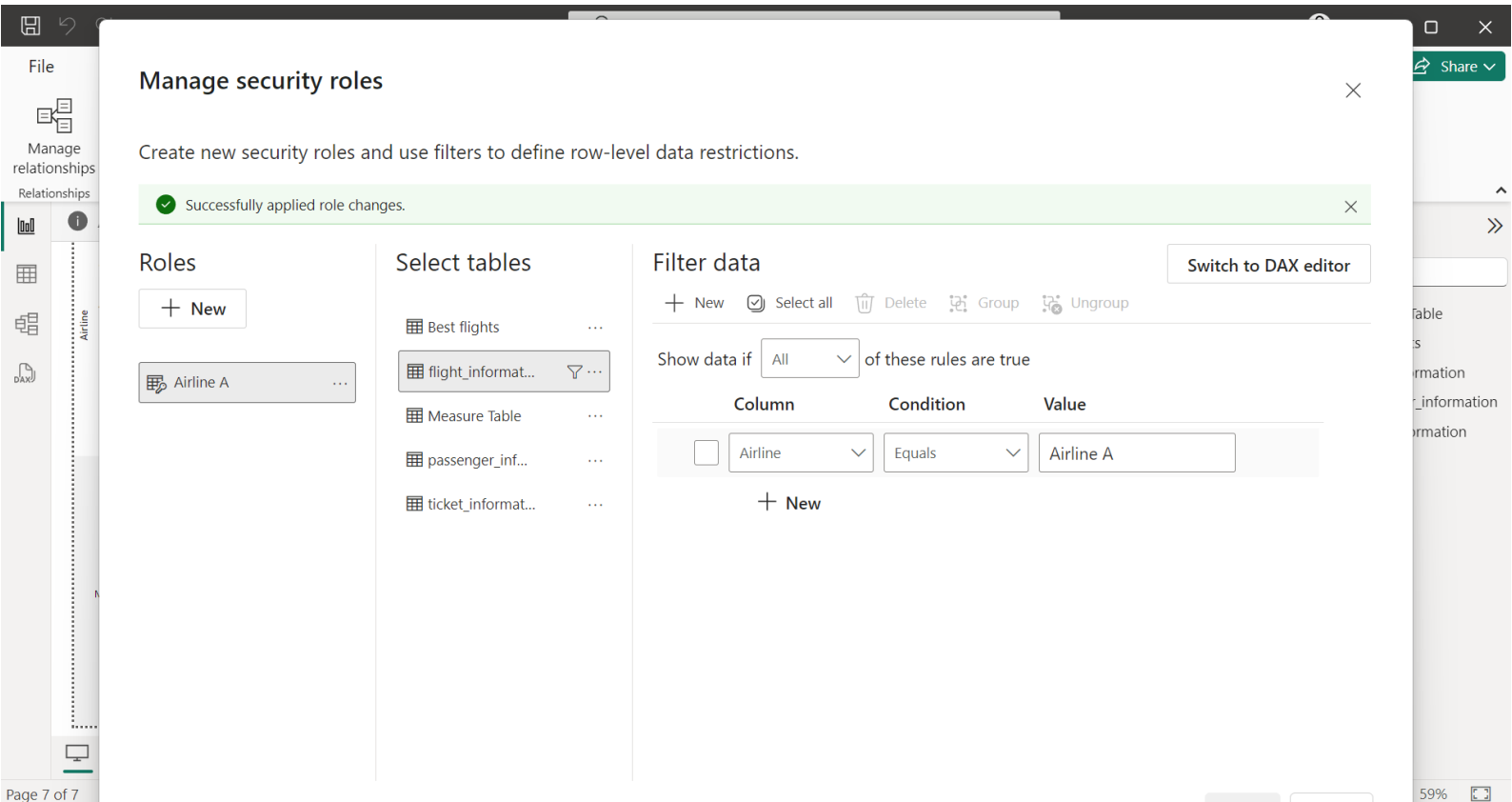
Single Row Cards :- Showing Total Passengers, Total tickets Booked and out of total tickets how many tickets are confirmed.

Slicer :- Created **Slicer** for filtering the data according to the needs.

2nd Step on Next Page



2) Configured Row-Level Security (RLS) for Airline A data and assigned it to a user



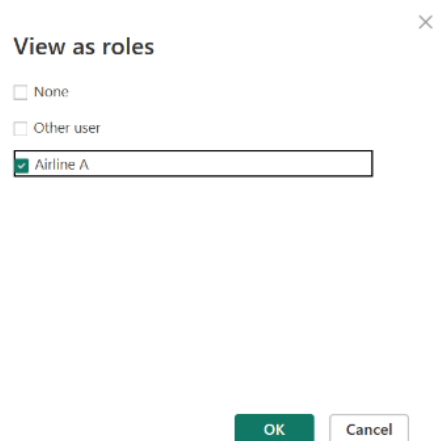
Steps Taken :-

i) Clicked On Manage Roles Under Modelling Tab → Renamed the Role as Airline A → Selected Flight Information → Under filter data as you can set the Value as Airline A

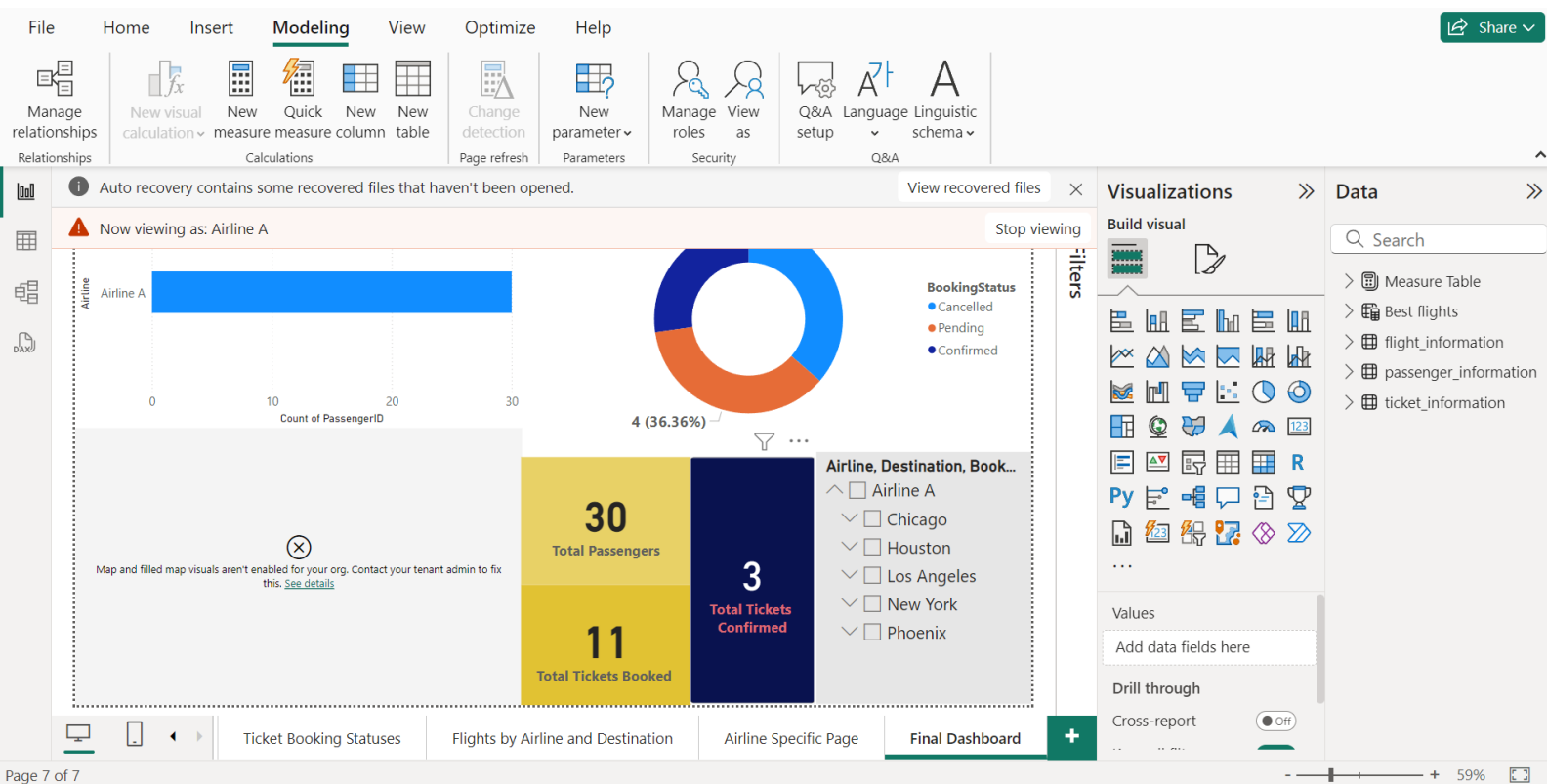
```
[Airline] == "Airline A"
```

ii) Clicked Save

iii) Clicked On View as under modelling tab -> Selected Airline A



iv) As you can see in the below screenshot the whole data is showing Airline A data.



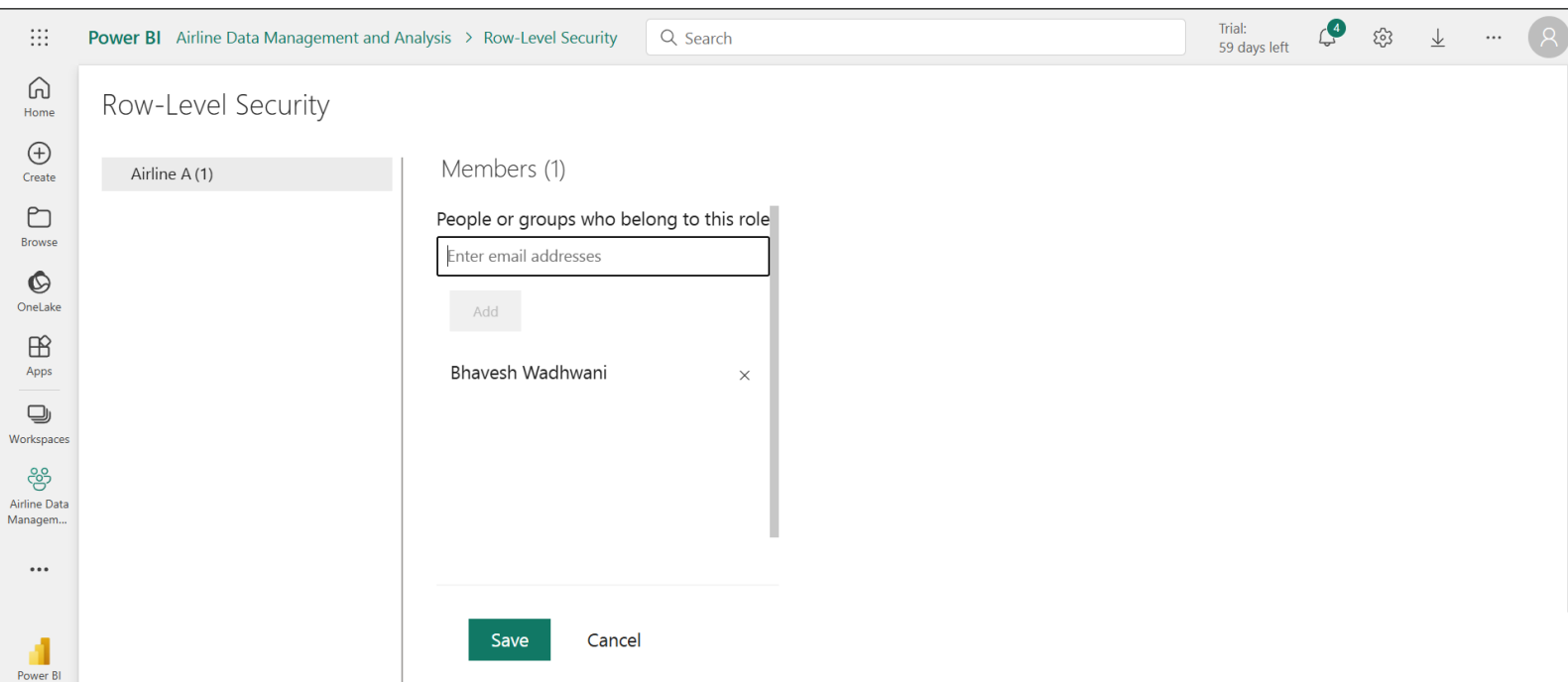
v) Published the file again → replace file → Gone to Power BI Service on Browser → clicked on security after clicking on the three dots as you can see in the below mentioned screenshot.

The screenshot shows the Power BI Service interface. The left sidebar displays the 'Airline Data Management and Analysis' workspace. A context menu is open over the 'C3 PROJECT' workspace, showing options like 'Explore this data (preview)', 'Analyze in Excel', 'Create report', 'Auto-create report', 'Create paginated report (preview)', 'Delete', 'Quick insights', 'Security', 'Rename', 'Open data model', 'Settings', 'Refresh history', 'Download this file', 'Manage permissions', and 'View workspace lineage'.

Security

Owner	Refreshed	Next refresh	Endorsemen	Sensitivity	Included in app
Airline Dat...	1/4/2025, 9:47...	—	—	—	<input type="checkbox"/> No
Airline Dat...	1/4/2025, 9:4...	N/A	—	—	

vi) Written the email address and assigned it to a user as you can see in the below mentioned screenshot:-



VIDEO LINK:-

https://drive.google.com/file/d/1_HHgQlv2lWjXn5fFterwgnMOjY5rSWee/view?usp=sharing