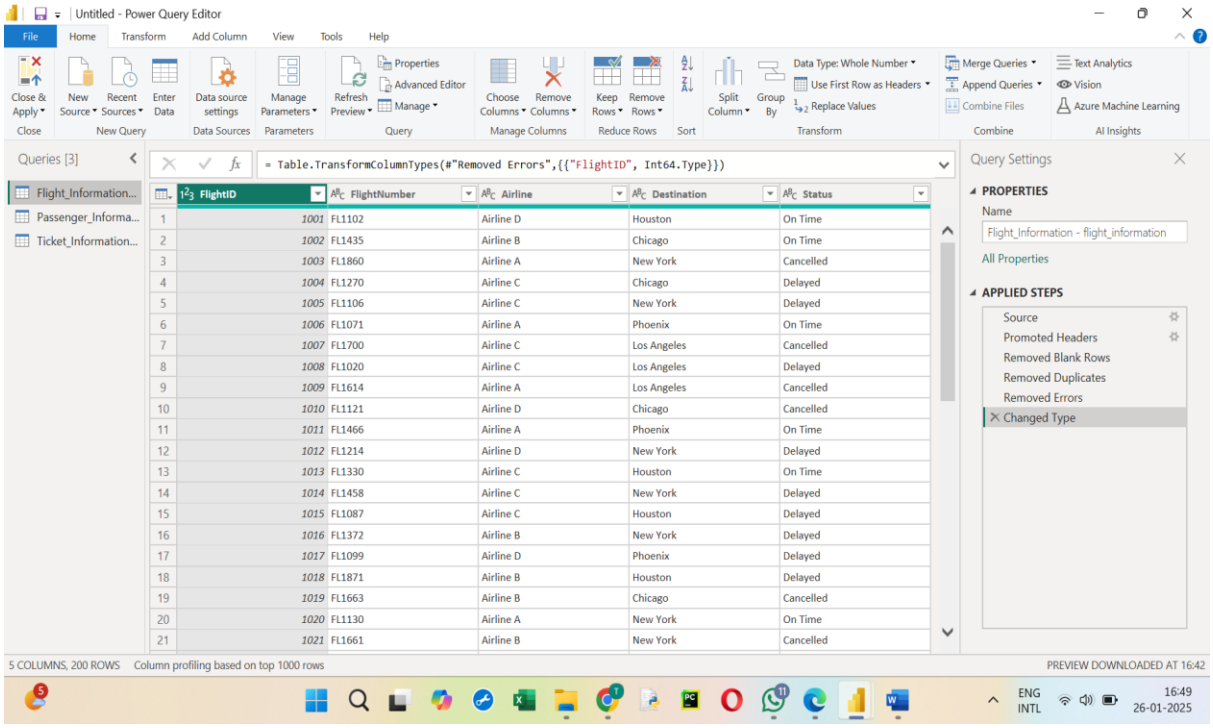
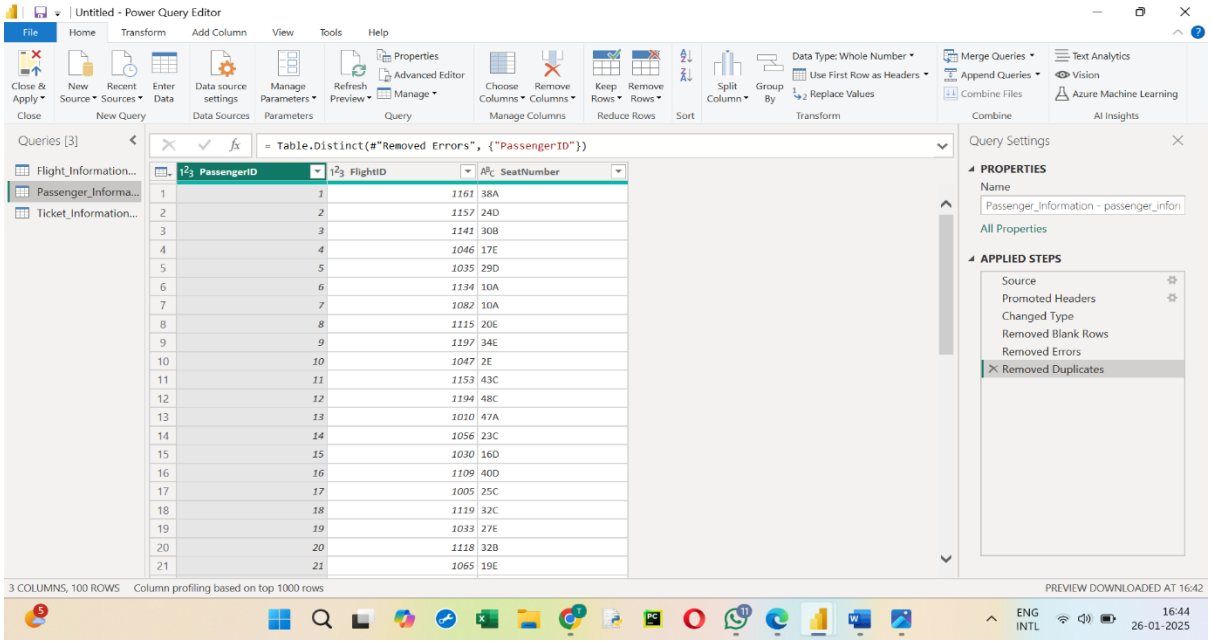
Power BI Project

Task - 1 : Data preparation and cleaning

- Datasets of Flight information, Passenger information and Ticket information are loaded in the power query editor.
- And after transform, cleaned the data having any duplicates, error values and empty rows.
- Formatted the columns in a proper manner like Flight ID.




Untitled - Power Query Editor
File
Home
Transform
Add Column
View
Tools
Help
Close & Apply
New Source
Recent Sources
Enter Data
Data source settings
Manage Parameters
Refresh Preview
Properties
Advanced Editor
Manage
Choose Columns
Remove Columns
Keep Rows
Remove Rows
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
Close
New Query
Data Sources
Parameters
Query
Manage Columns
Reduce Rows
Sort
Transform
Combine
AI Insights
Queries [3]
Flight_Information...
Passenger_Informa...
Ticket_Information...
= Table.Distinct(#"Removed Errors", {"PassengerID"})
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
Query Settings
PROPERTIES
Name
Passenger_Information - passenger_infor
All Properties
APPLIED STEPS
Source
Promoted Headers
Changed Type
Removed Blank Rows
Removed Errors
Removed Duplicates
3 COLUMNS, 100 ROWS
Column profiling based on top 1000 rows
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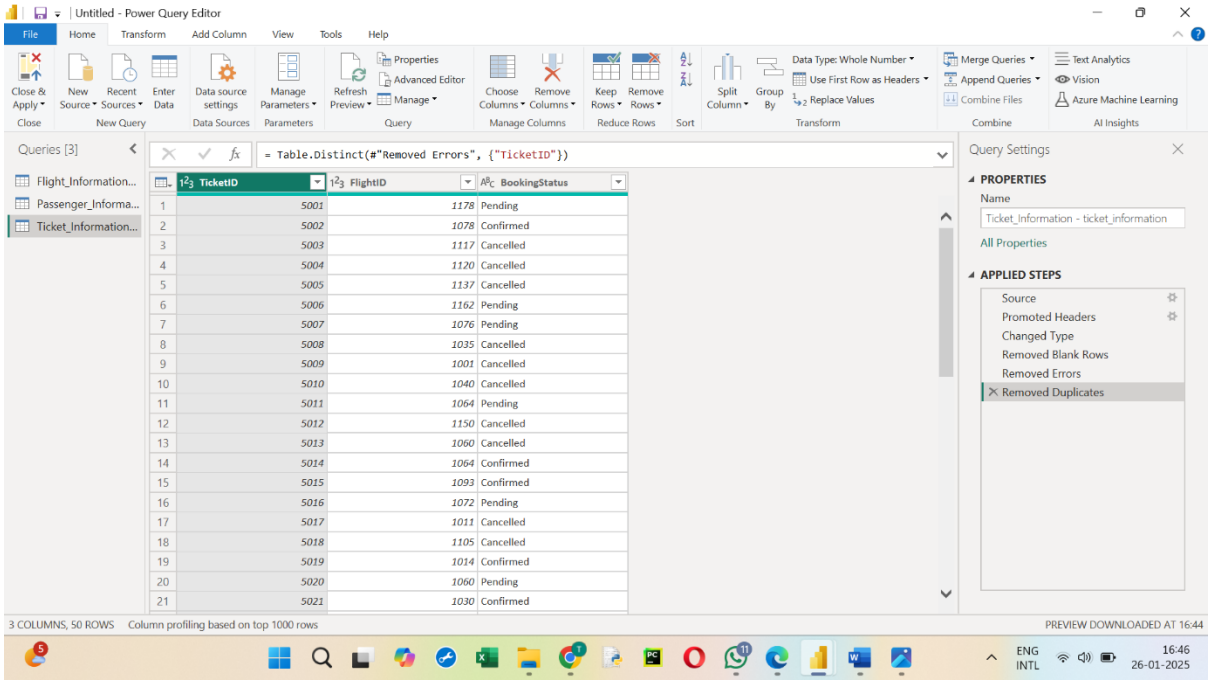
26-01-2025


Untitled - Power Query Editor
File
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AI Insights
Queries [3]
Flight_Information...
Passenger_Informa...
Ticket_Information...
= Table.Distinct(#"Removed Errors", {"TicketID"})
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
Query Settings
PROPERTIES
Name
Ticket_Information - ticket_information
All Properties
APPLIED STEPS
Source
Promoted Headers
Changed Type
Removed Blank Rows
Removed Errors
Removed Duplicates
3 COLUMNS, 50 ROWS
Column profiling based on top 1000 rows
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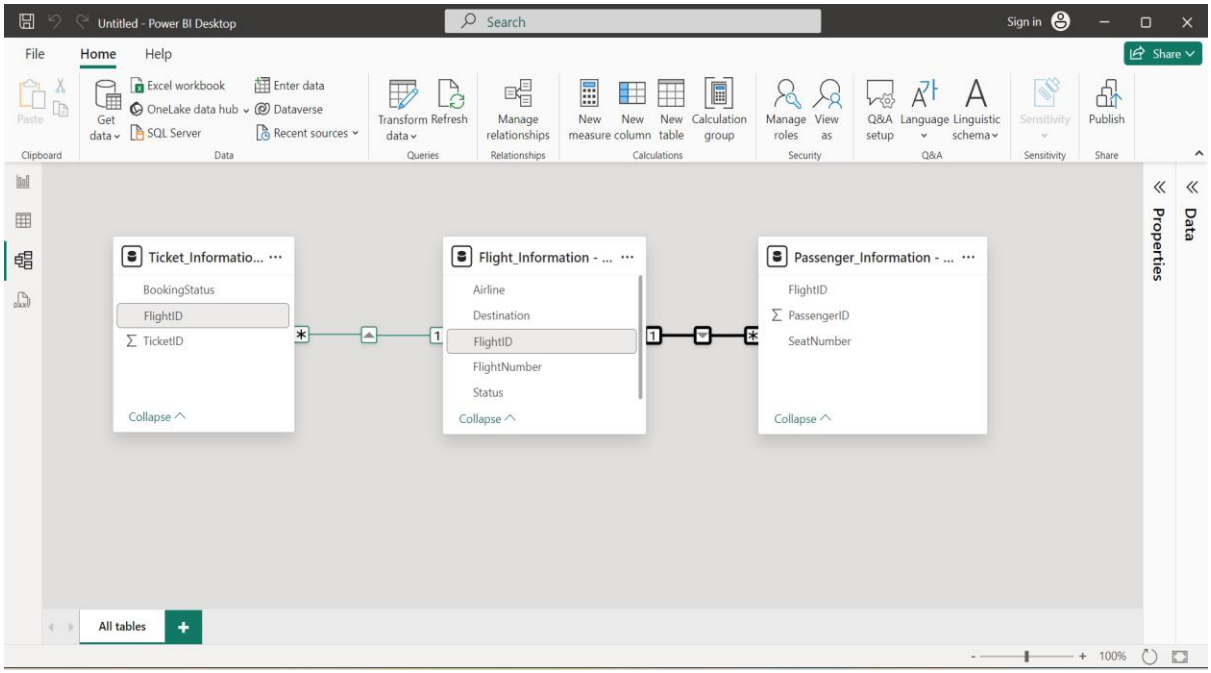
26-01-2025

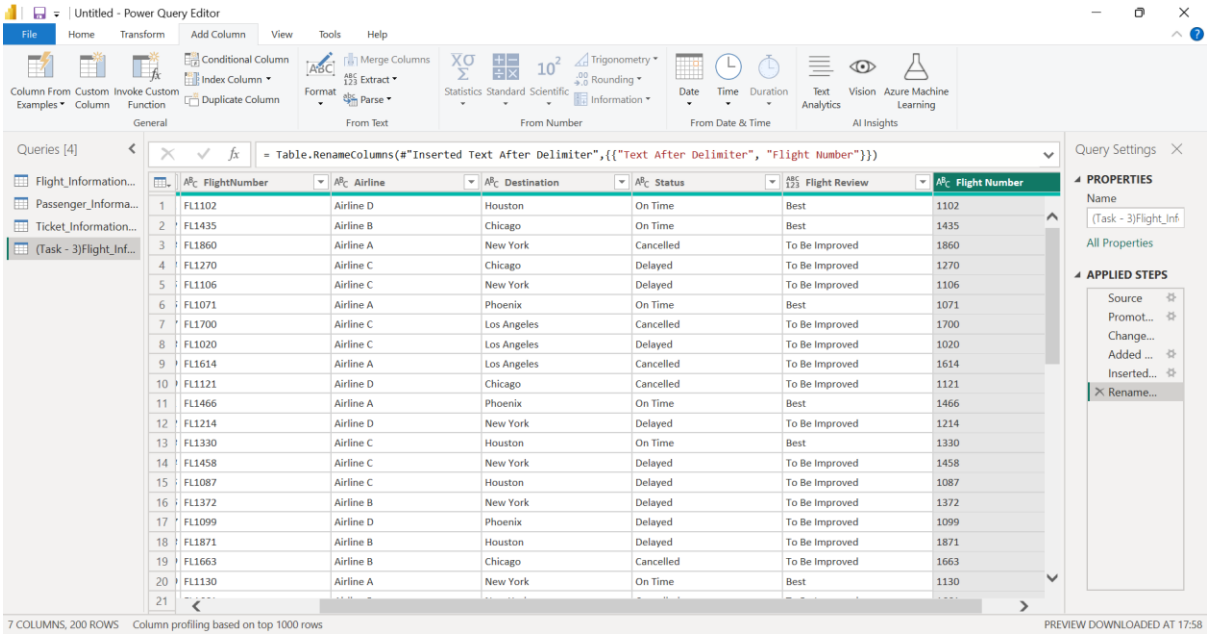
Task - 2 : Data Modeling

- After cleaning the data in power query editor. Close and apply it into Power BI desktop.
- Go to model view and create a relationship between them, using FlightID as the key.
- It is a one-to-many relationship model and verified the integrity of data flow in the model.



Task - 3 : Enhanced data insights

- Transform the flight information dataset into power query editor.
- Go to “Add column” section and add a column with conditional formatting as, ‘Good’ if flight is ‘On Time’ Else ‘To Be Improved’ if flight is ‘cancelled or delayed’.
- Now extract the flight number from ‘FlightNumber’ column in the dataset using the ‘Custom from Examples’ column.
- Enter the number from flight number from FlightNumber column and hit enter then it applies to all the rows in the column.



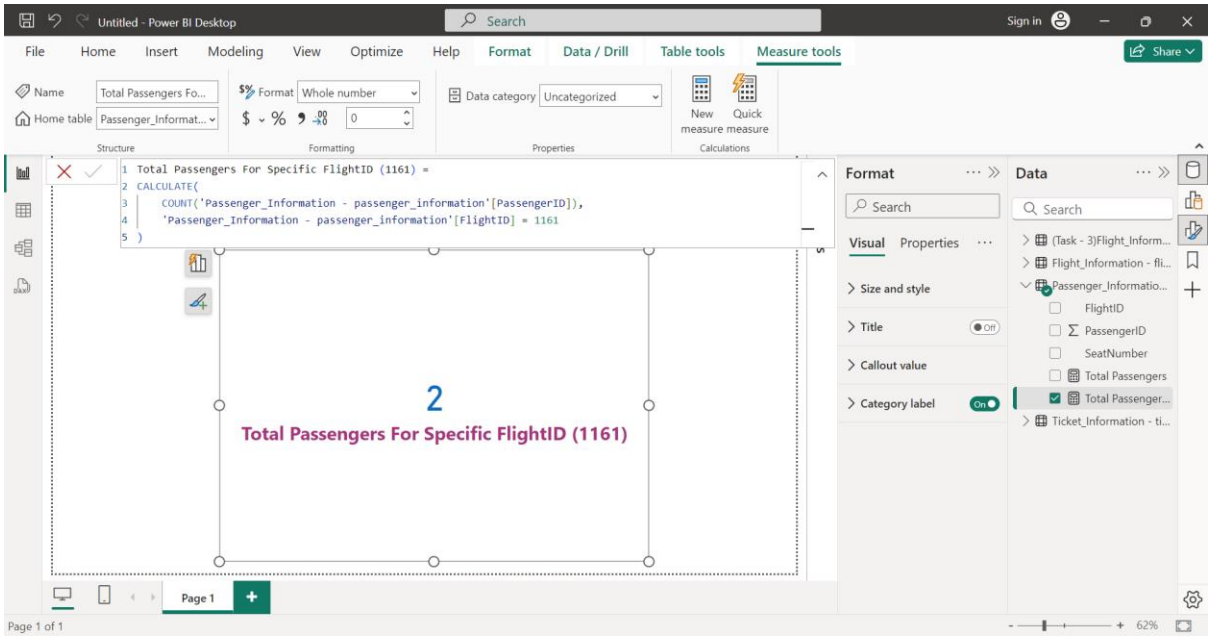
Task - 4 : Calculations using DAX

4(A)-Total passengers for a specific flight

- Create a DAX measure for Total number of passengers for a specific flight.
- I have taken FlightID 1161 as an example.
- Formula,

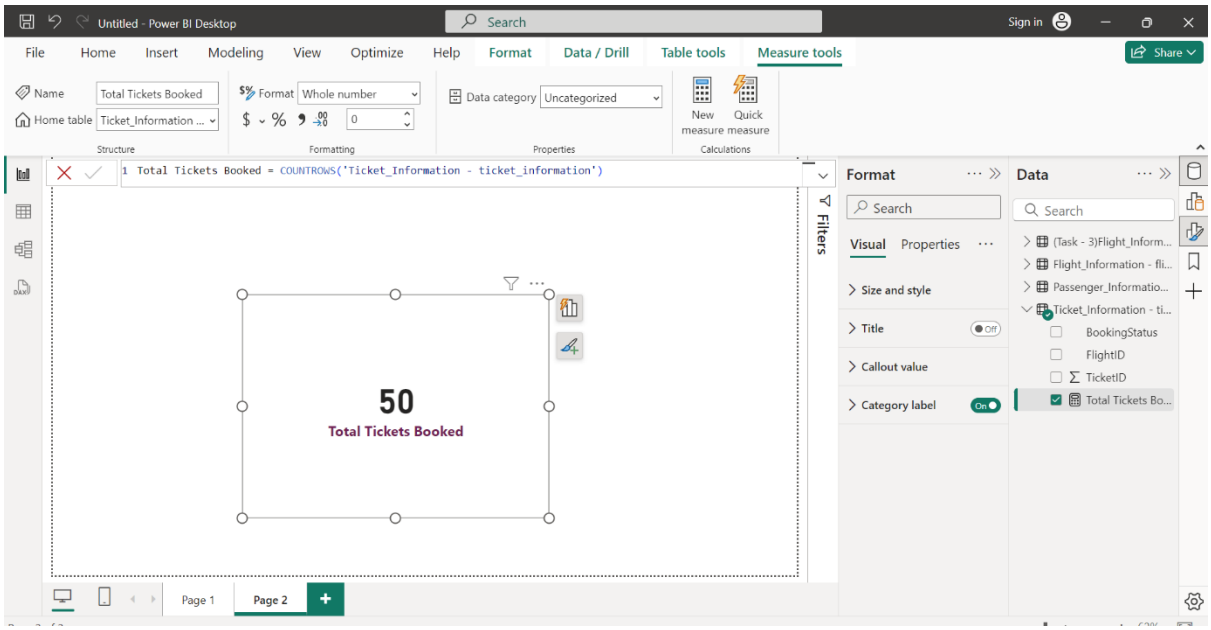
```
Total Passengers For Specific FlightID (1161) =
CALCULATE(COUNT('Passenger_Informationpassenger_information'[PassengerID]),
'Passenger_Information - passenger_information'[FlightID] = 1161
 )
```

- After creating the measure select a row card to represent the total no of passengers for specific flight.
- It shows the values for DAX formula.



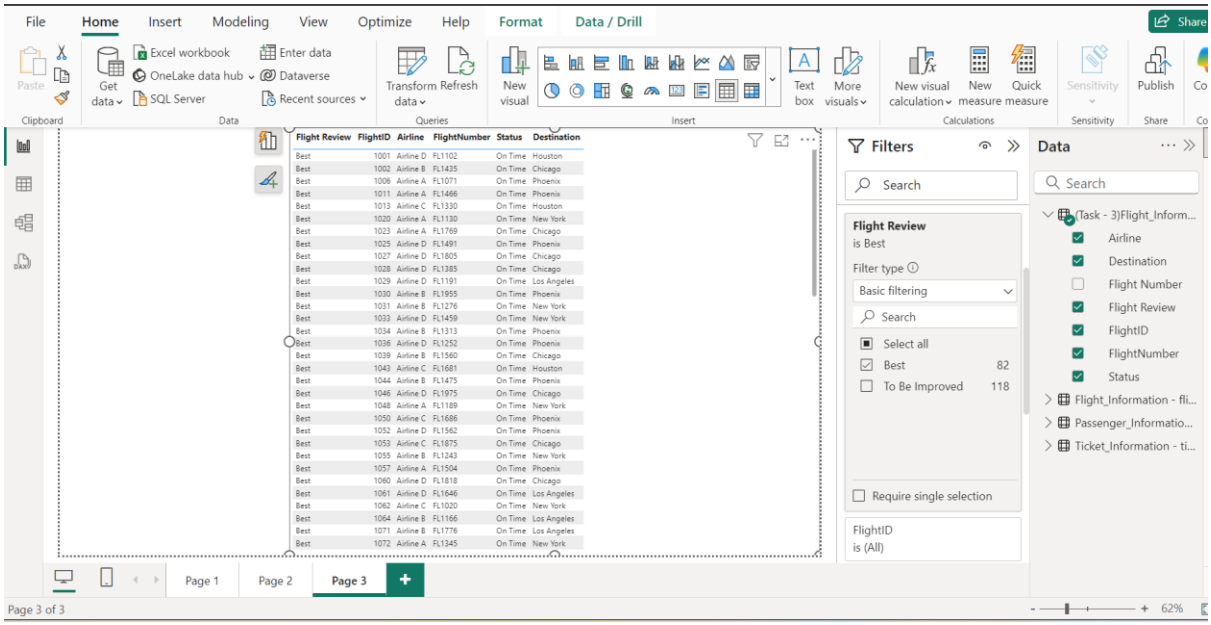
4(B)-Total tickets booked

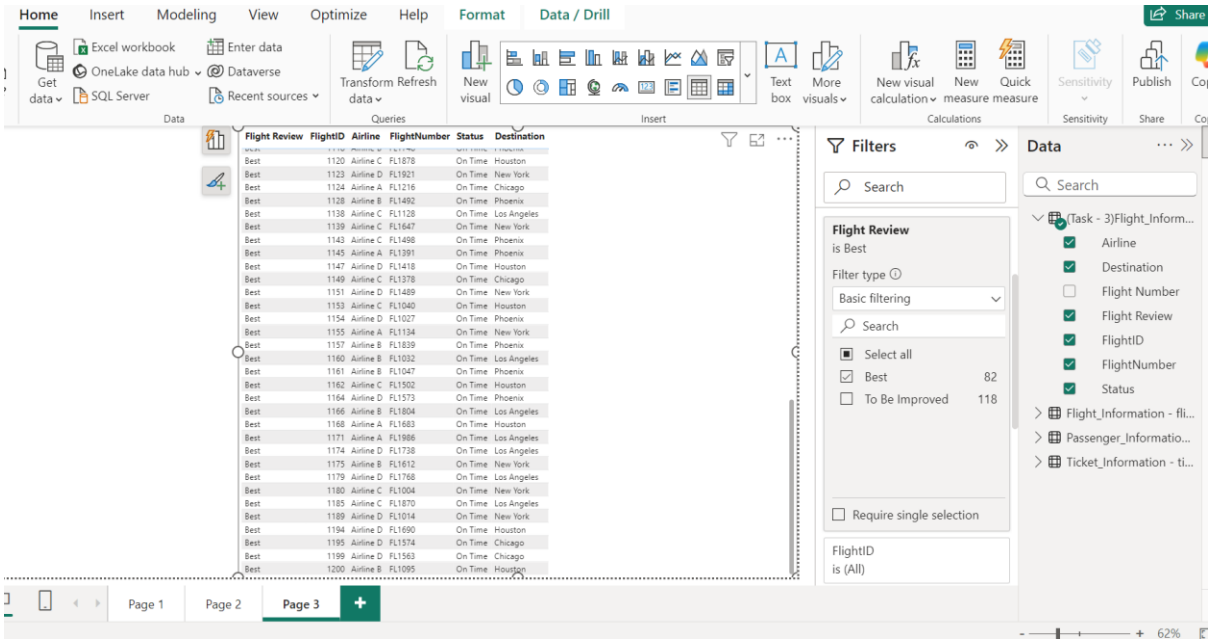
- To calculate the total tickets booked in the flight information we can create the measure.
- Formula,
  Total Tickets Booked = COUNTROWS('Ticket_Information - ticket_information')
- It creates the measure and gives total tickets booked.



4(C)-Filtered table showing ‘Best’ flights only

- Open the table visual and add all data to columns section.
- Open the filter section and apply ‘Best’ to it.
- Then it shows all the data that is filtered in it.

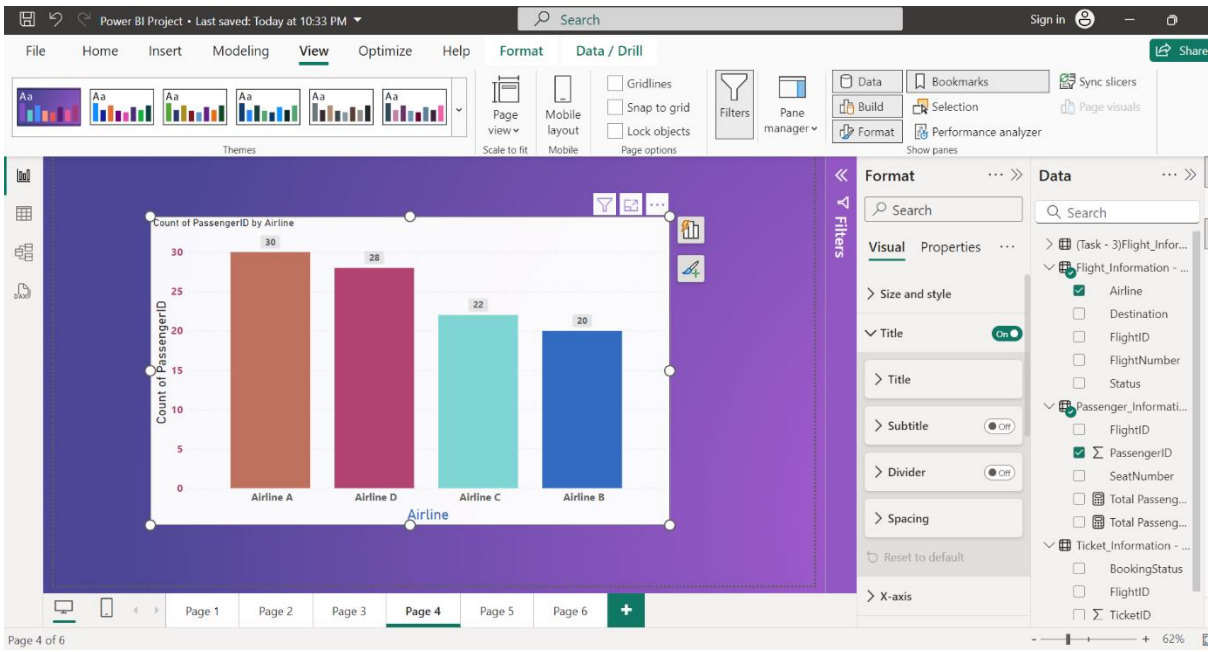




Task - 5 : Visualization and Interactive Features

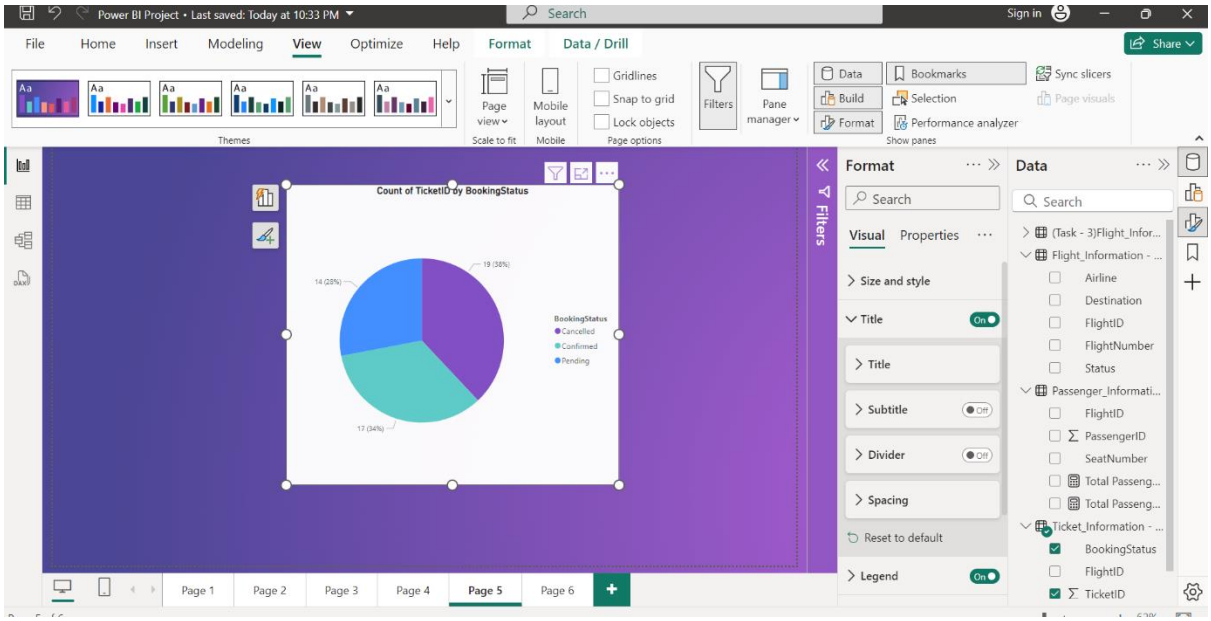
5(A)-Passenger count by airline

- Select the column chart visual and apply Passenger ID and Airline to get the visuals of Passenger count by airline.



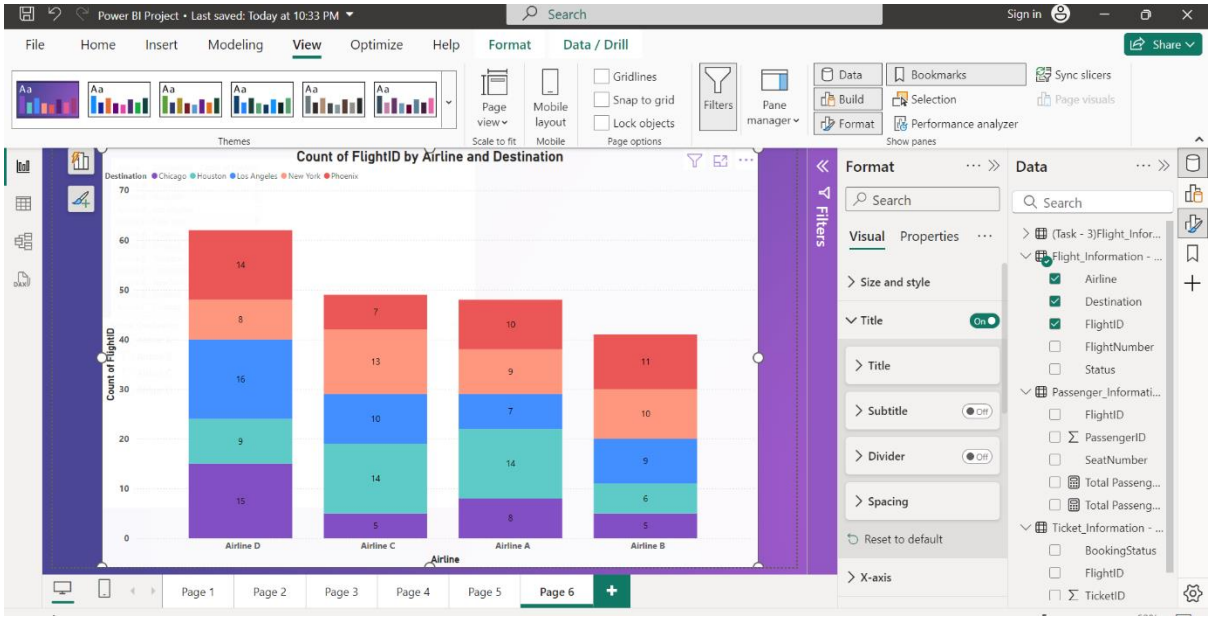
5(B)-Ticket booking status

- To get booking status of ticket information add booking status and ticket ID in the pie chart visuals.



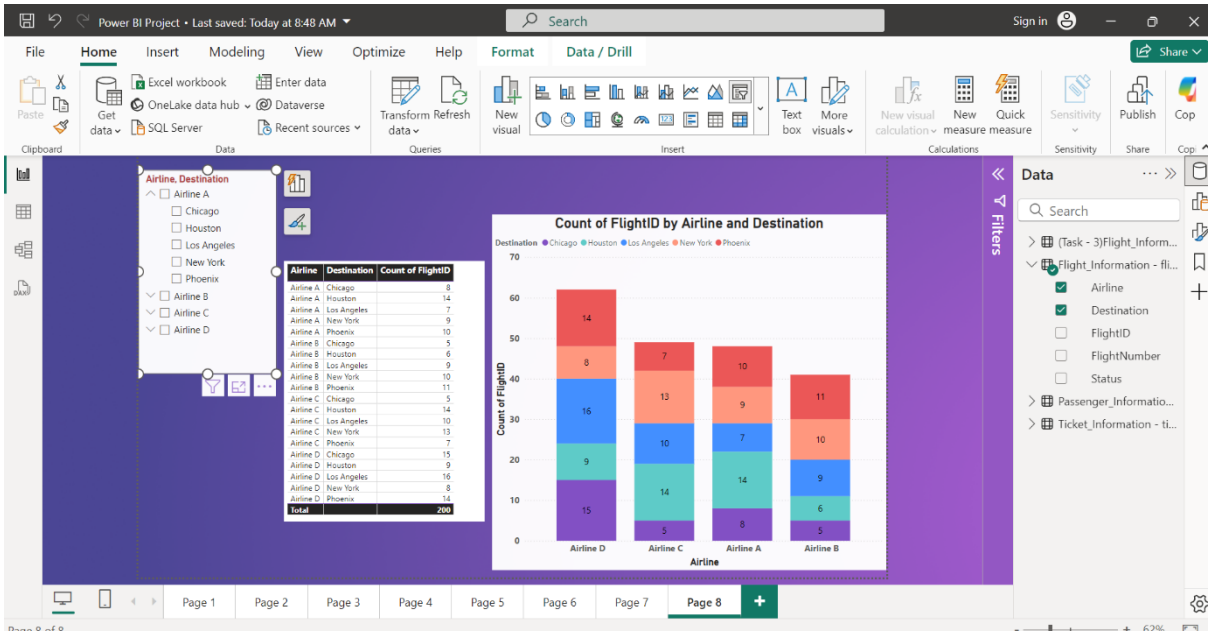
5(C)-Flights by airline and destination

- Add Airline, Destination and Flight ID to clustered column chart to get visuals of Flights by Airline and Destination.

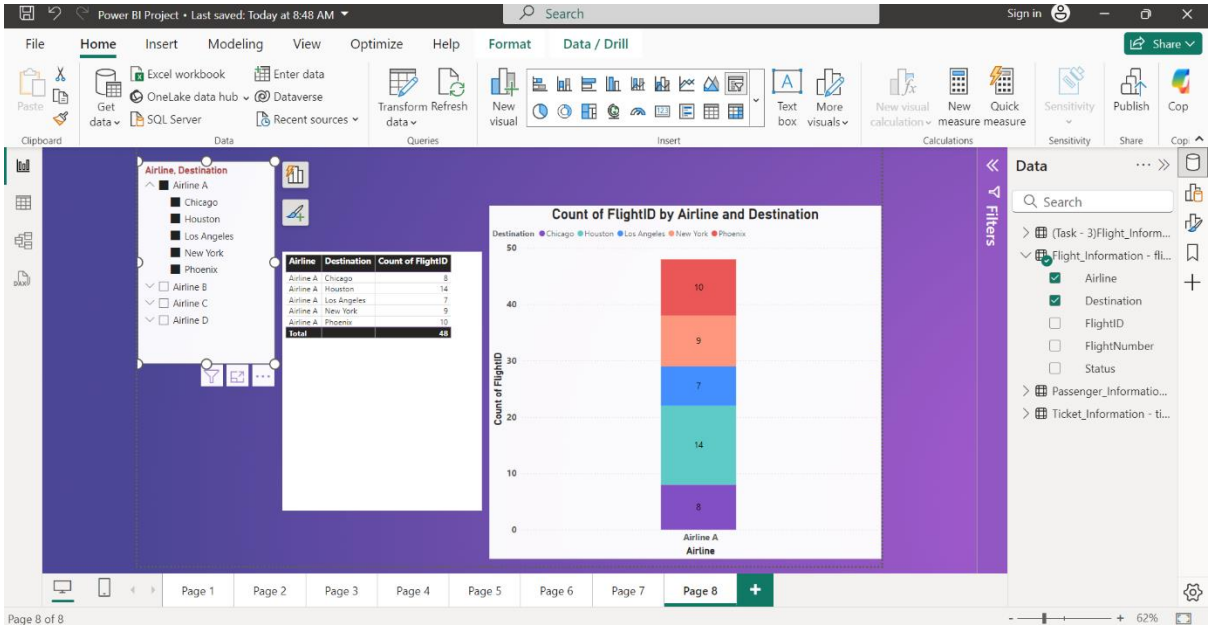


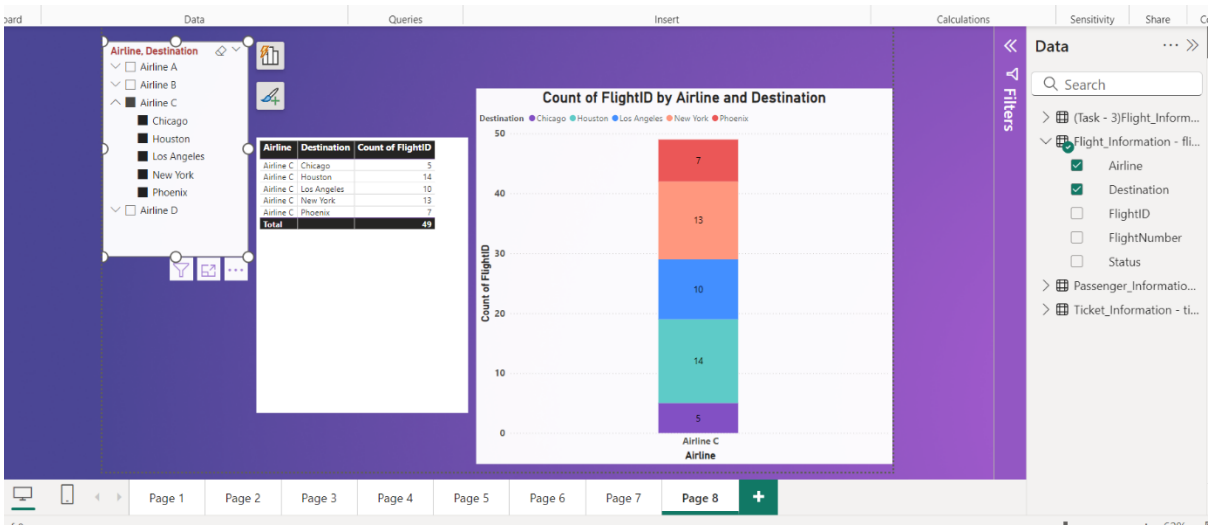
5(D)-Interactive Features for Destination and Airline

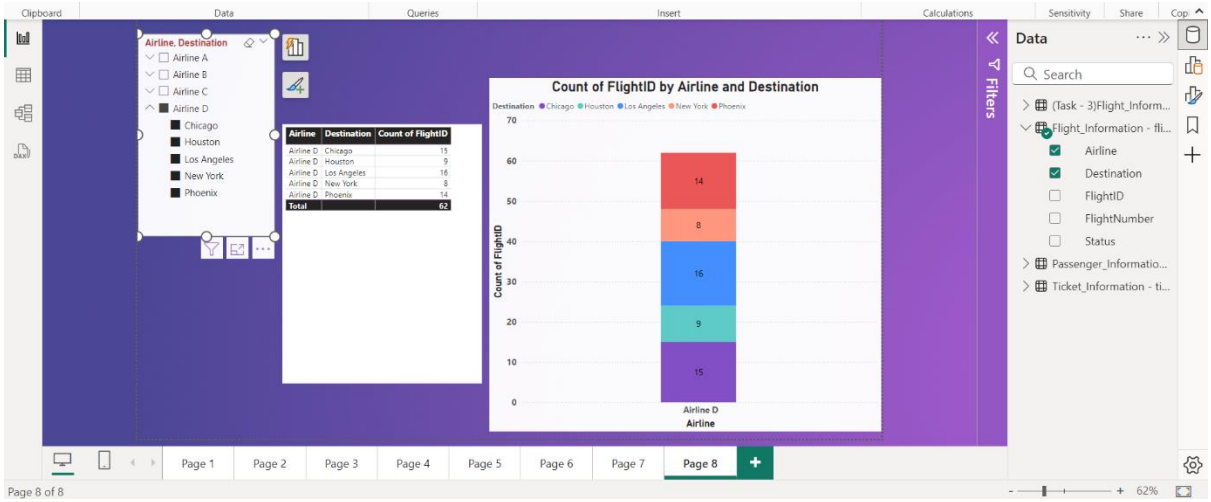
- Applying slicers for the report page gives the slicer pane and filters to get selected data and its visuals in the dashboard.



- Select Airline by clicking on the slicer visual it transforms the data in column chart and table chart to Airline name and destination.

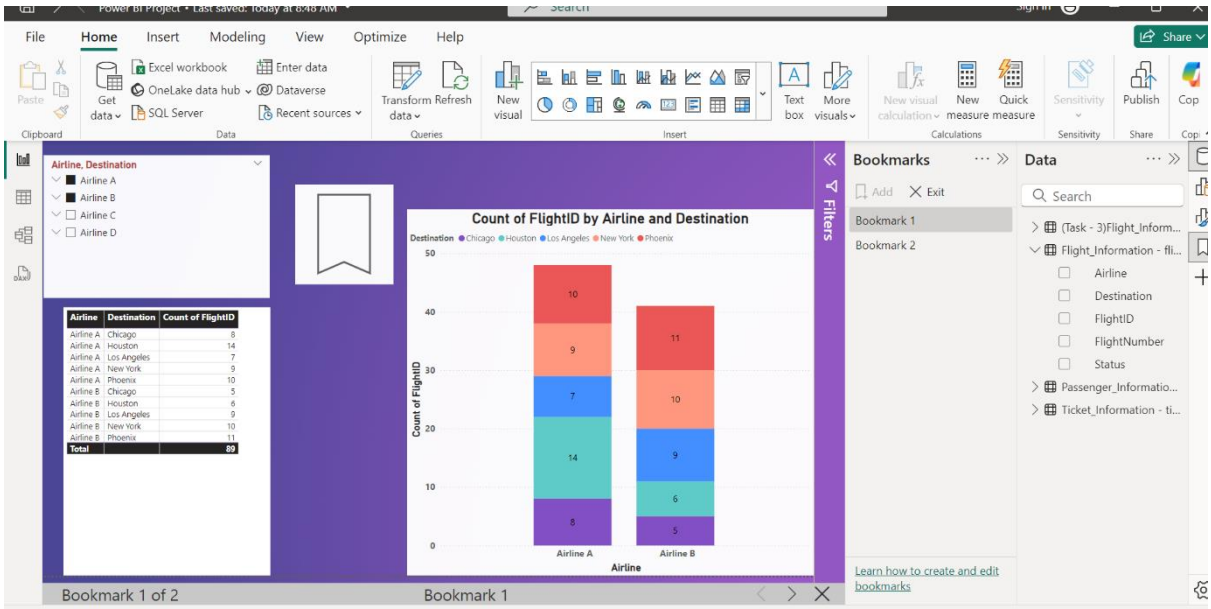


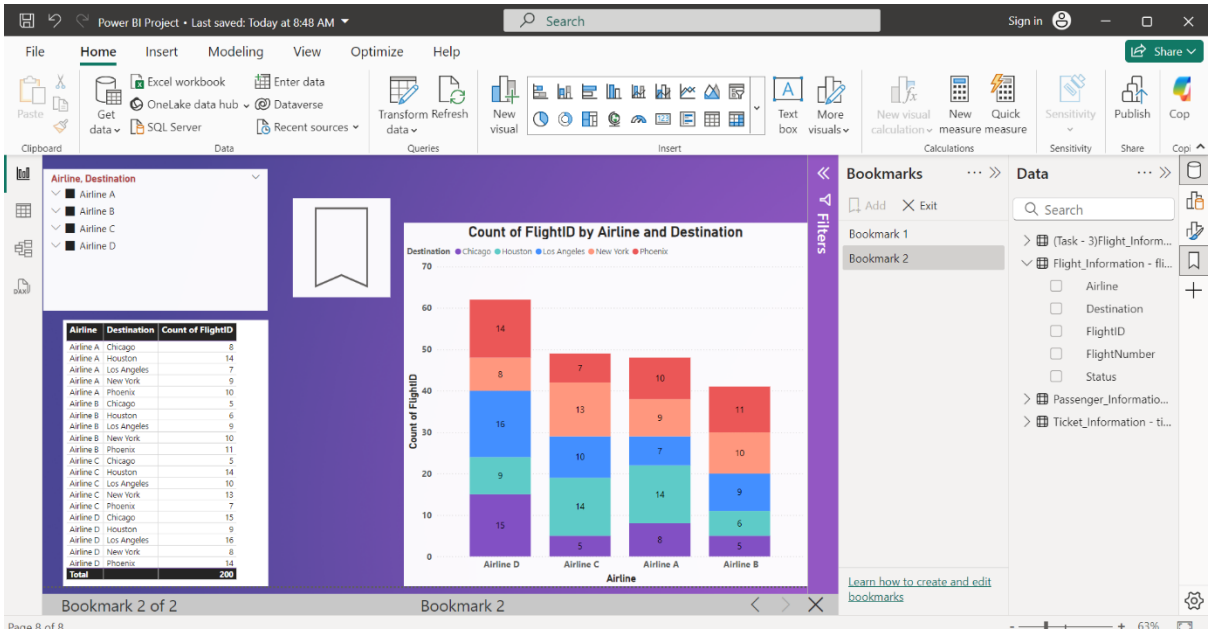




5(E)-Quick Views

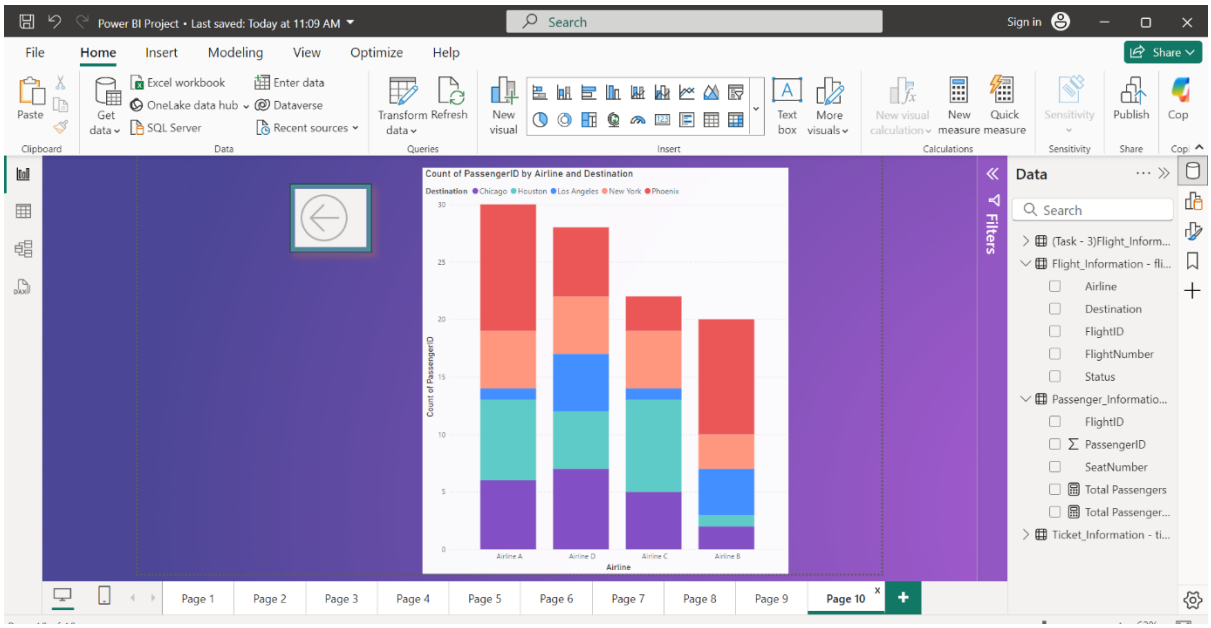
- Quick views can be either bookmarks or buttons that can be used to get back to the previous page by single click.
- By clicking on this bookmark symbol can be used to filter data and get back to it wherever we need.





5(F)-Airline specific pages

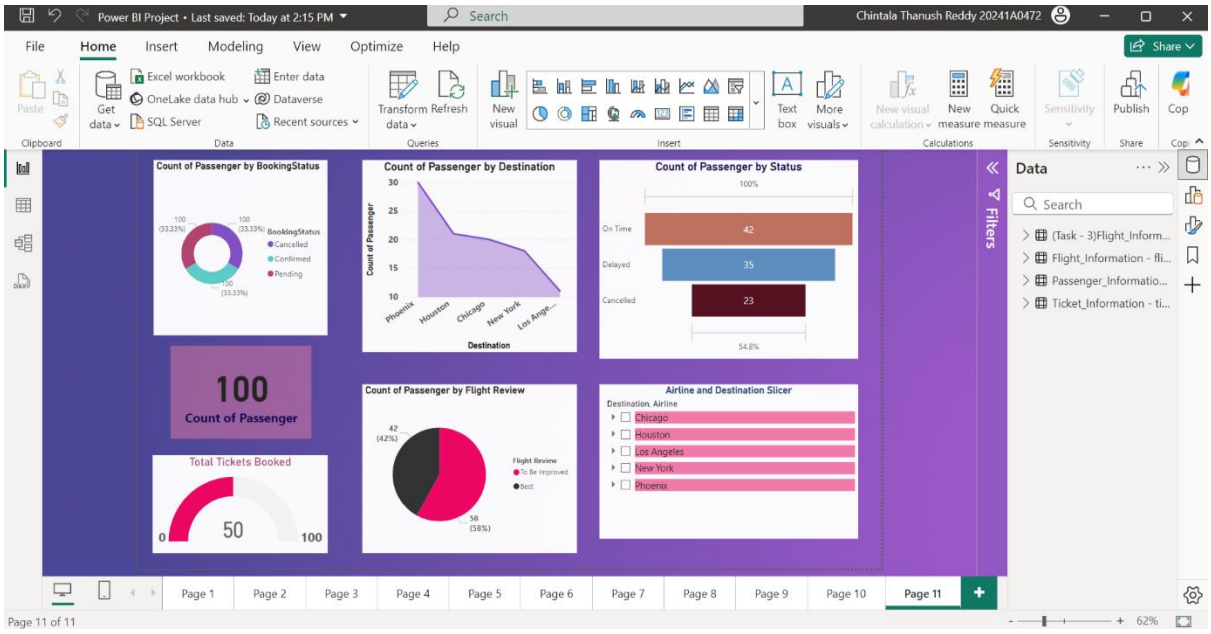
- Select a table visual in the visualization pane and add data regarding fields that exist in any previous report page.
- In the new page add another visual to drill through.
- Add data that exist in two report pages and apply drill through option to make a connection.
- When you click the drill through option it will filter to another report page view.



Task - 6 : Final Dashboard and Power BI Service

6(A)-Comprehensive dashboard

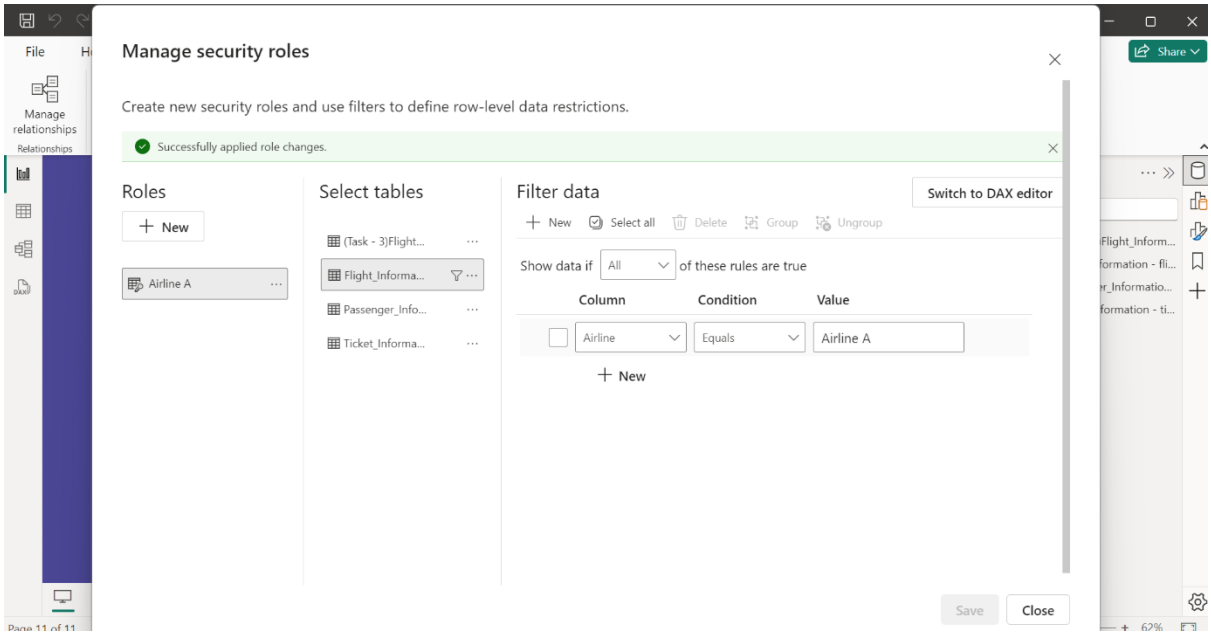
- Creating different dashboards with different datasets using visuals.
- These dashboards are used to understand the business requirements and problem statements.

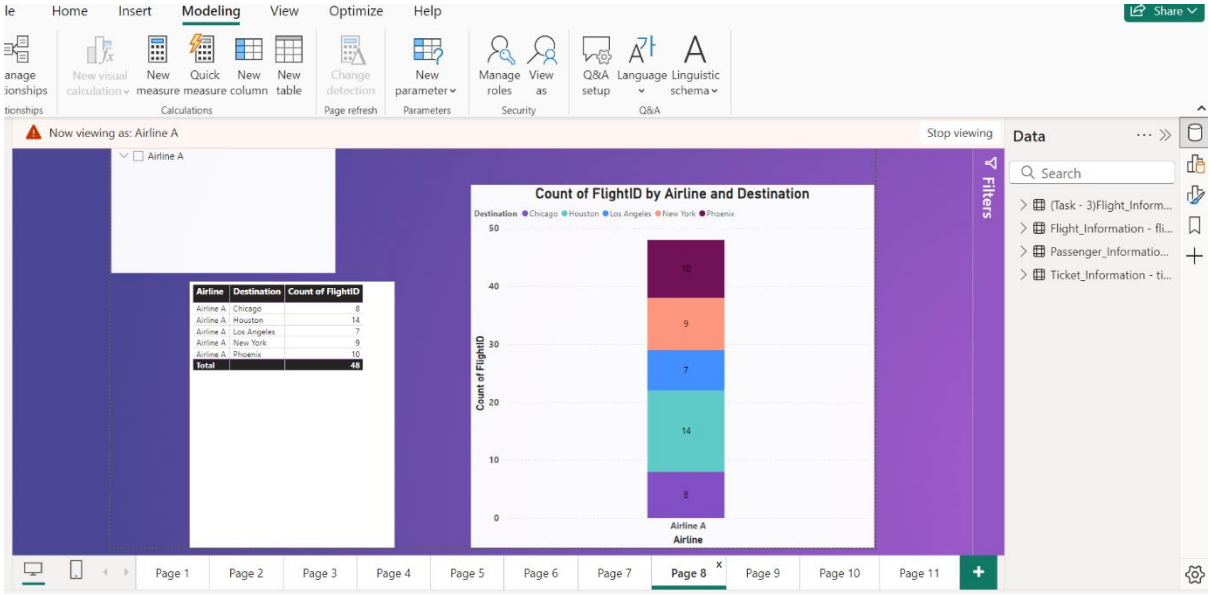


6(B)-Row Level Security

- To assign a Row-level security, initially go to Modeling tab and click on Manage roles
- On the roles section name it as “Airline A”. On the filters section add airline column with equals to value Airline A.

  “Add > Airline Column > Equals > Airline A”.
- Save the data and go to ‘view as’ ribbon in modeling tab. Select the Airline A section and apply. Now we can check all the report pages weather the Airline A visuals are present or not.
- In file section ‘publish’ it to workspace.
- Upon publition go to Power BI Service and select workspace.
- In the workspace panel open, latest created report page and click on options. It popup few options along with security.
- In that we get Row-level Security and assign it to those who have Power BI Service account and share with them.
- It shares only the Airline A data.


Manage security roles
Create new security roles and use filters to define row-level data restrictions.
Successfully applied role changes.
Roles
New
Airline A
Select tables
(Task - 3)Flight...
Flight_Informa...
Passenger_Info...
Ticket_Informa...
Filter data
Switch to DAX editor
New
Select all
Delete
Group
Ungroup
Show data if
All
of these rules are true
Column
Condition
Value
Airline
Equals
Airline A
New
Save
Close


Now viewing as: Airline A
Stop viewing
Count of FlightID by Airline and Destination
Destination Chicago Houston Los Angeles New York Phoenix
Count of FlightID
Airline A
Airline
Data
Search
(Task - 3)Flight_Inform...
Flight_Information - fli...
Passenger_Informatio...
Ticket_Information - ti...
Filters
Page 1
Page 2
Page 3
Page 4
Page 5
Page 6
Page 7
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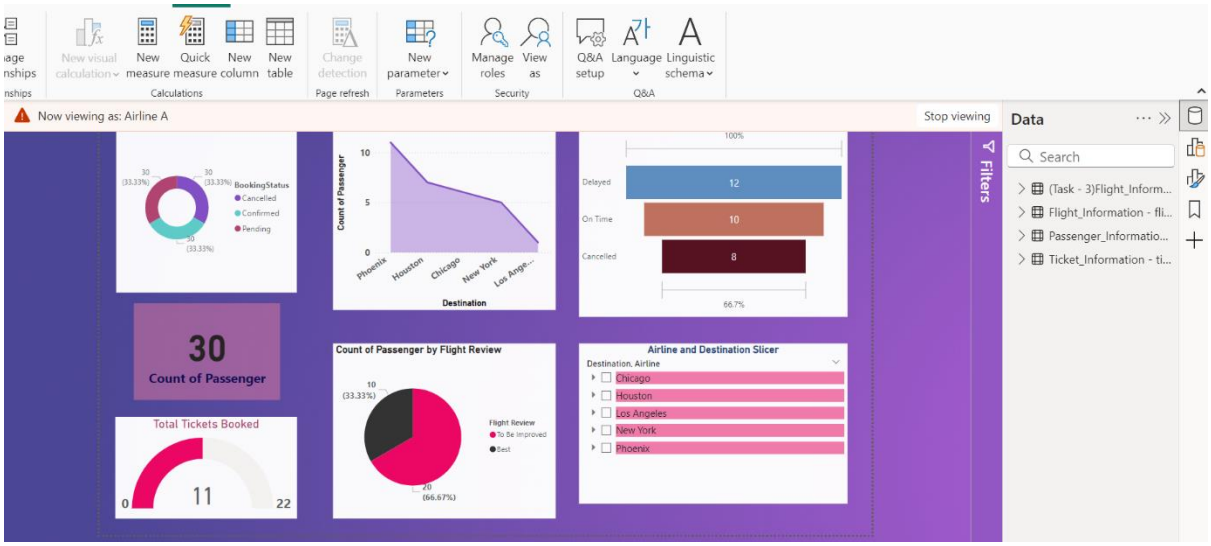
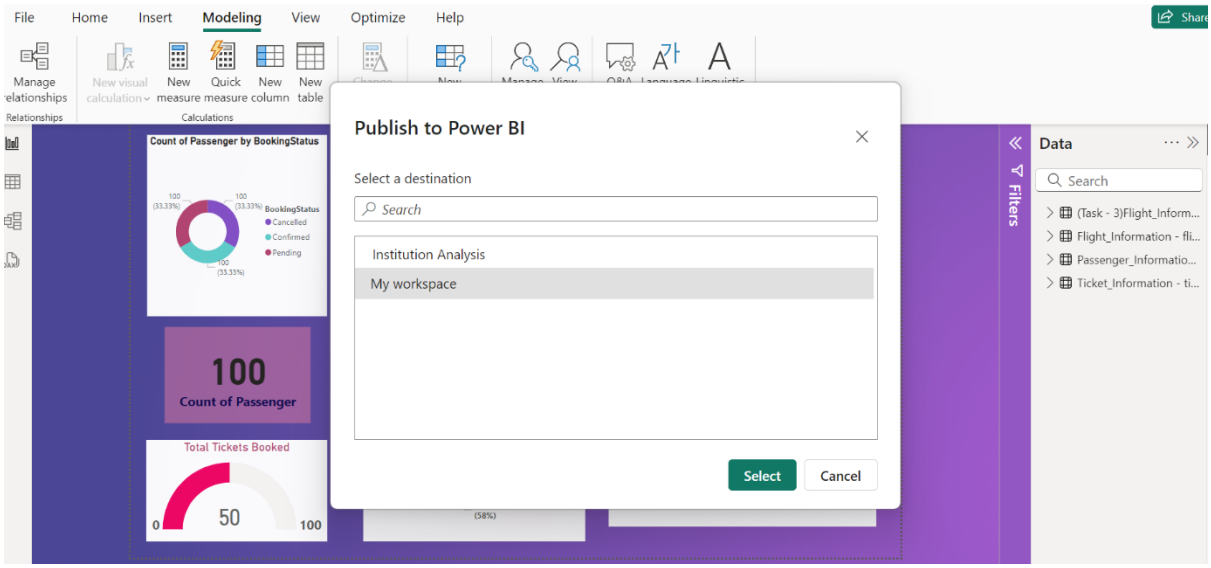
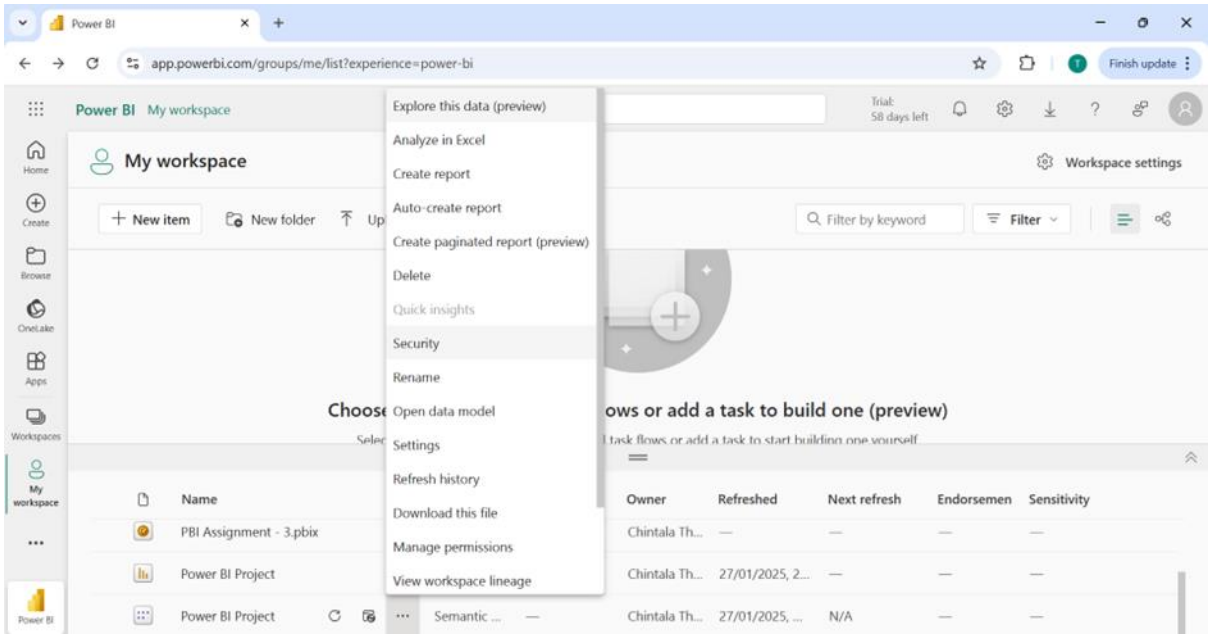
Page 11


Now viewing as: Airline A
Stop viewing
30
Count of Passenger
Total Tickets Booked
Count of Passenger by Flight Review
Airline and Destination Slicer
Destination, Airline
Chicago
Houston
Los Angeles
New York
Phoenix
Data
Search
Filters


File
Home
Insert
Modeling
View
Optimize
Help
Manage relationships
New visual calculation
New measure
Quick measure
New column
New table
Relationships
Calculations
Publish to Power BI
Select a destination
Search
Institution Analysis
My workspace
Select
Cancel
Count of Passenger by BookingStatus
BookingStatus
Cancelled
Confirmed
Pending
100
Count of Passenger
Total Tickets Booked
50
0
100
Data
Search
(Task - 3)Flight_Inform...
Flight_Information - fli...
Passenger_Informatio...
Ticket_Information - ti...
Filters


Power BI
app.powerbi.com/groups/me/list?experience=power-bi
Finish update
Power BI My workspace
Trial: 58 days left
My workspace
Workspace settings
New item
New folder
Filter by keyword
Filter
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
View workspace lineage
Name
Owner
Refreshed
Next refresh
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PBI Assignment - 3.pbix
Power BI Project
Power BI Project
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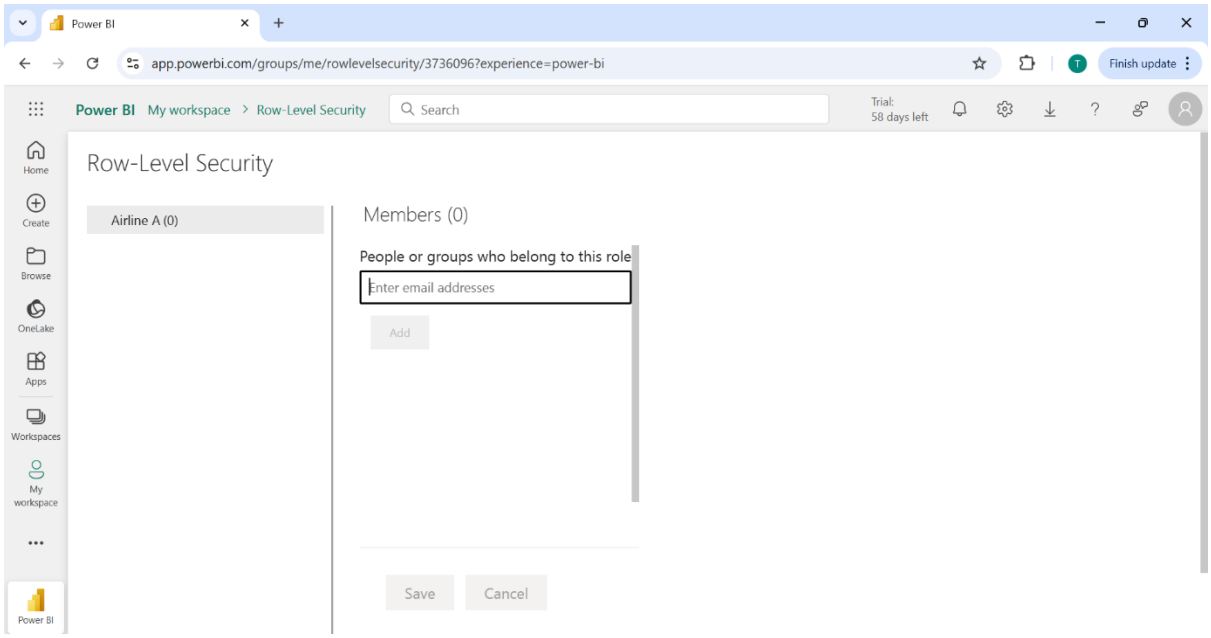

6(C)-Set up schedule refresh at 5 PM daily

- After creating the all-security levels and data gateway installation and sign in, now can schedule a refresh option.
- In the settings, go to Power BI settings and select sematic models.
- Now go to refresh option and select “Indian IST+5:30”. Select daily refresh option schedule time at 5:00 PM.