=PROJECT

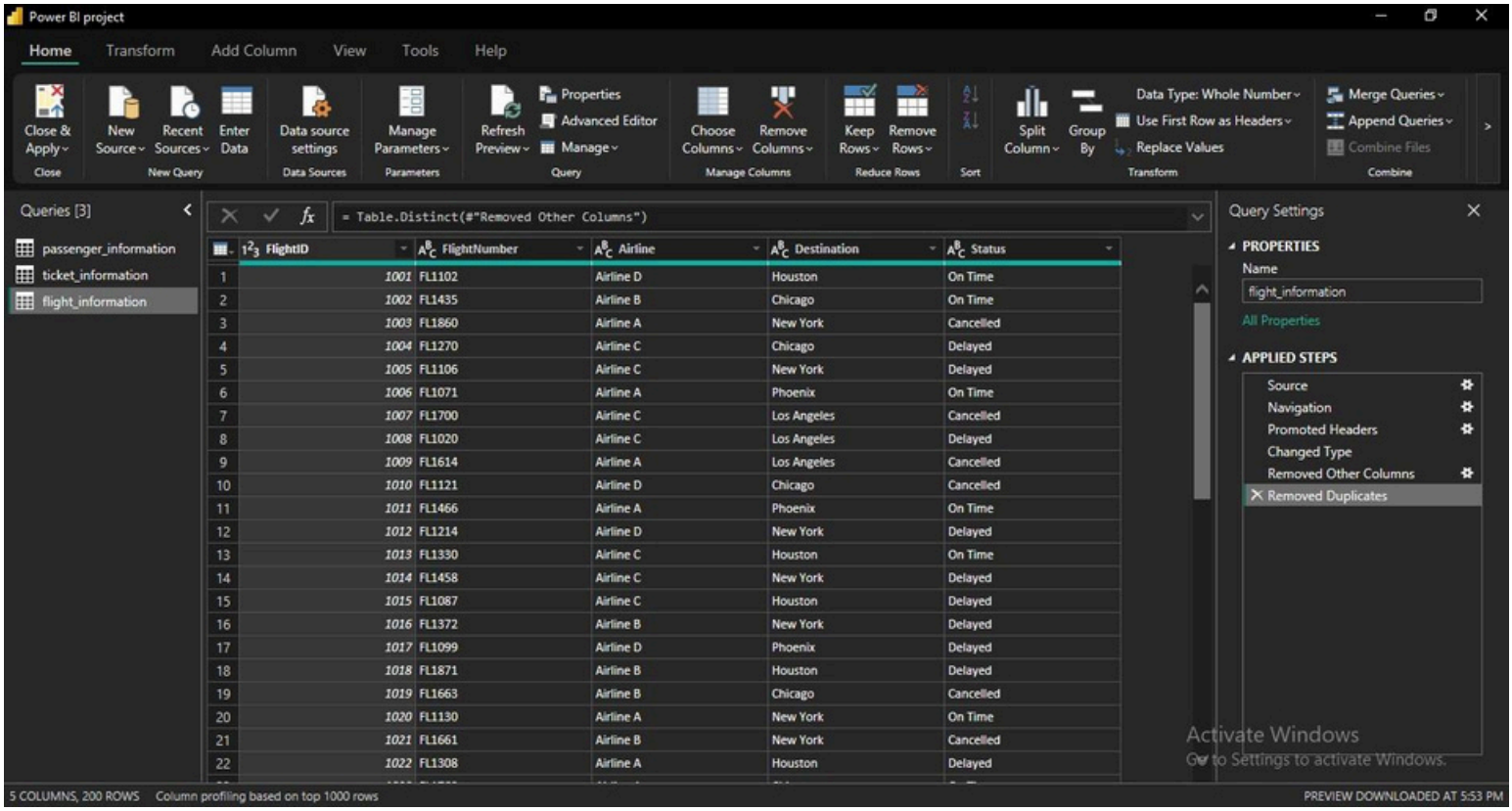
Airline Data Management and Analysis Using Power BI

Task-1:

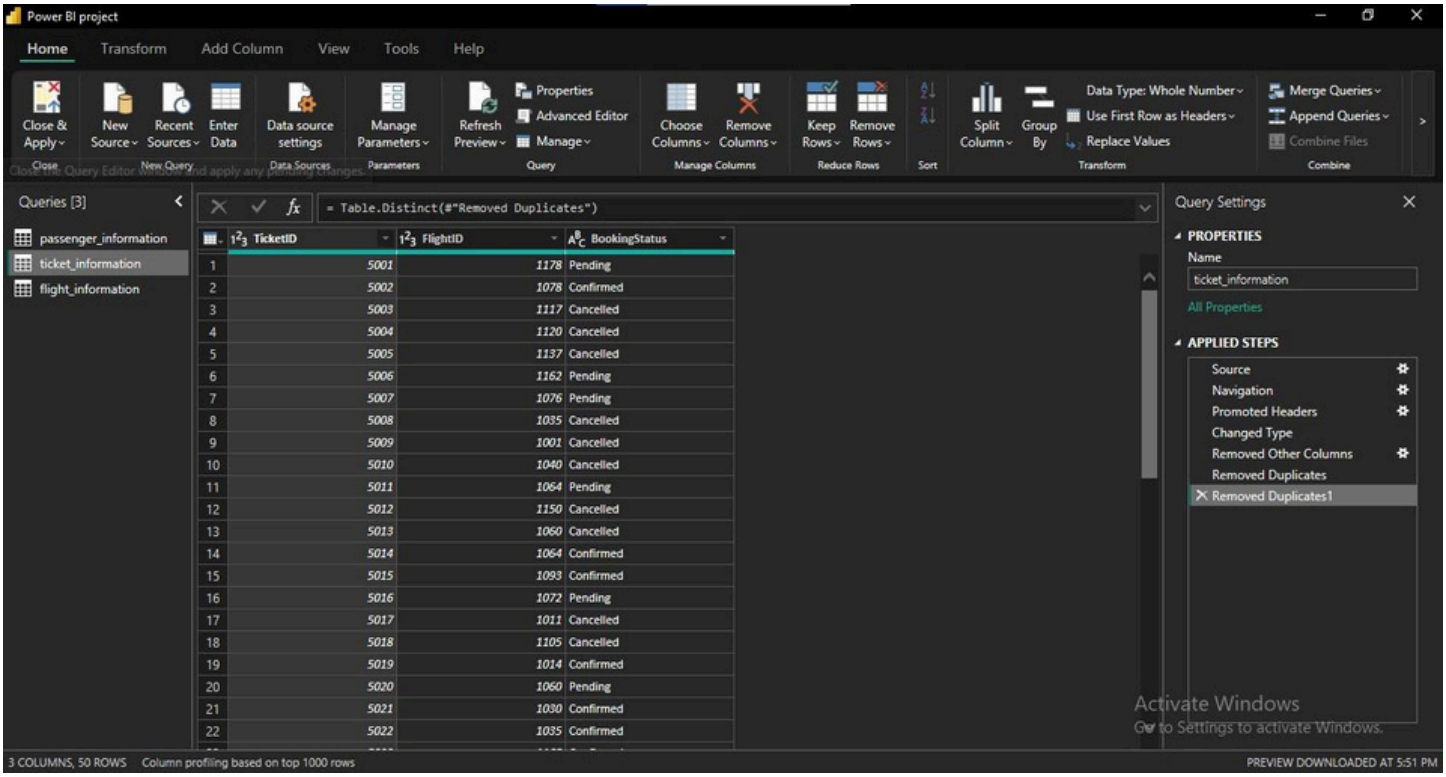
Data Preparation and Cleaning (10 Marks)

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

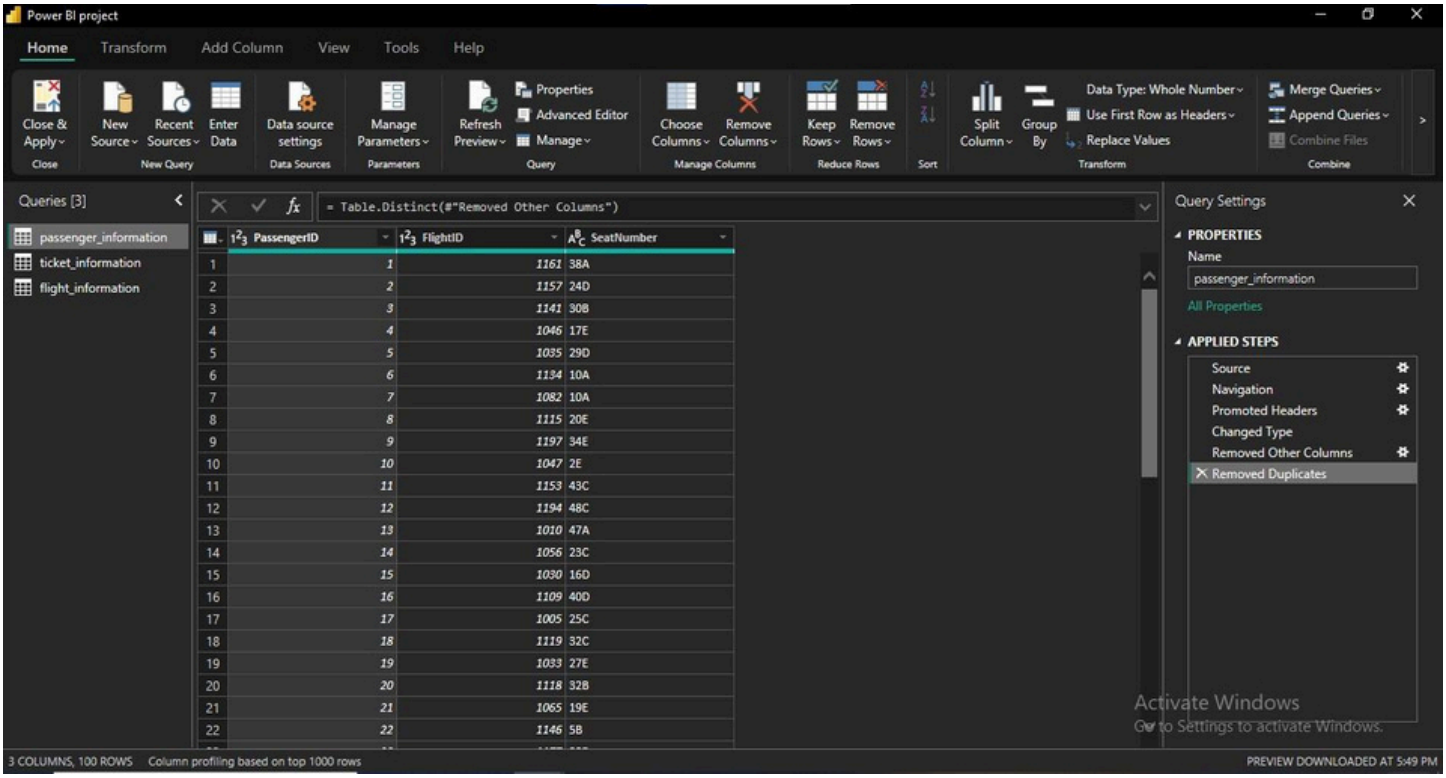
For flight_information dataset:



For ticket_information:



For passenger_information dataset:



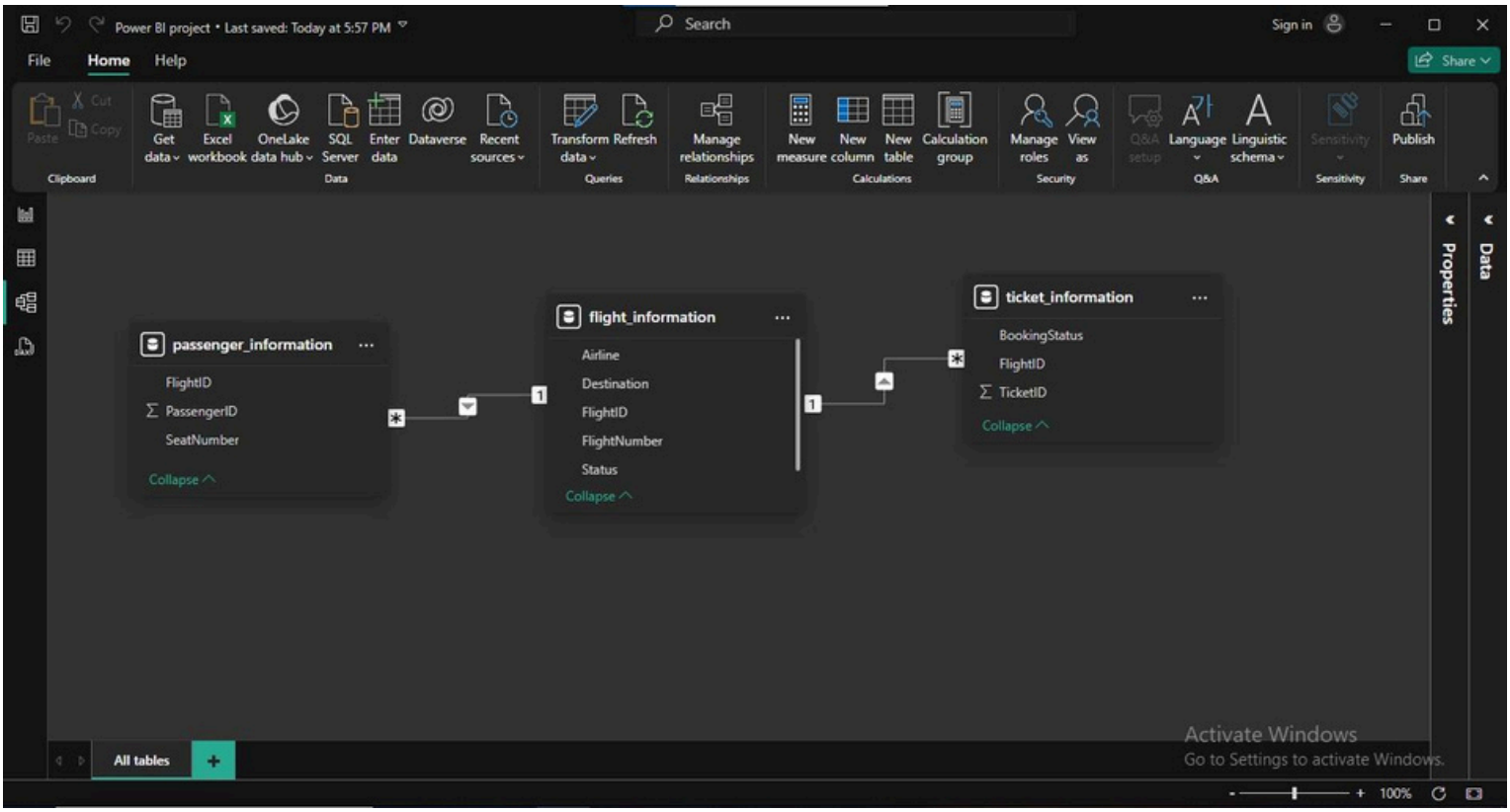
Steps Involved:

Power query editor > Select the dataset using ctrl + A > Home menu > Remove Duplicate Rows and Empty rows > changed the format of columns accordingly

Task-2:

Data Modeling

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



- Flight_information is forming one to many relationship with passenger_information and ticket_information.

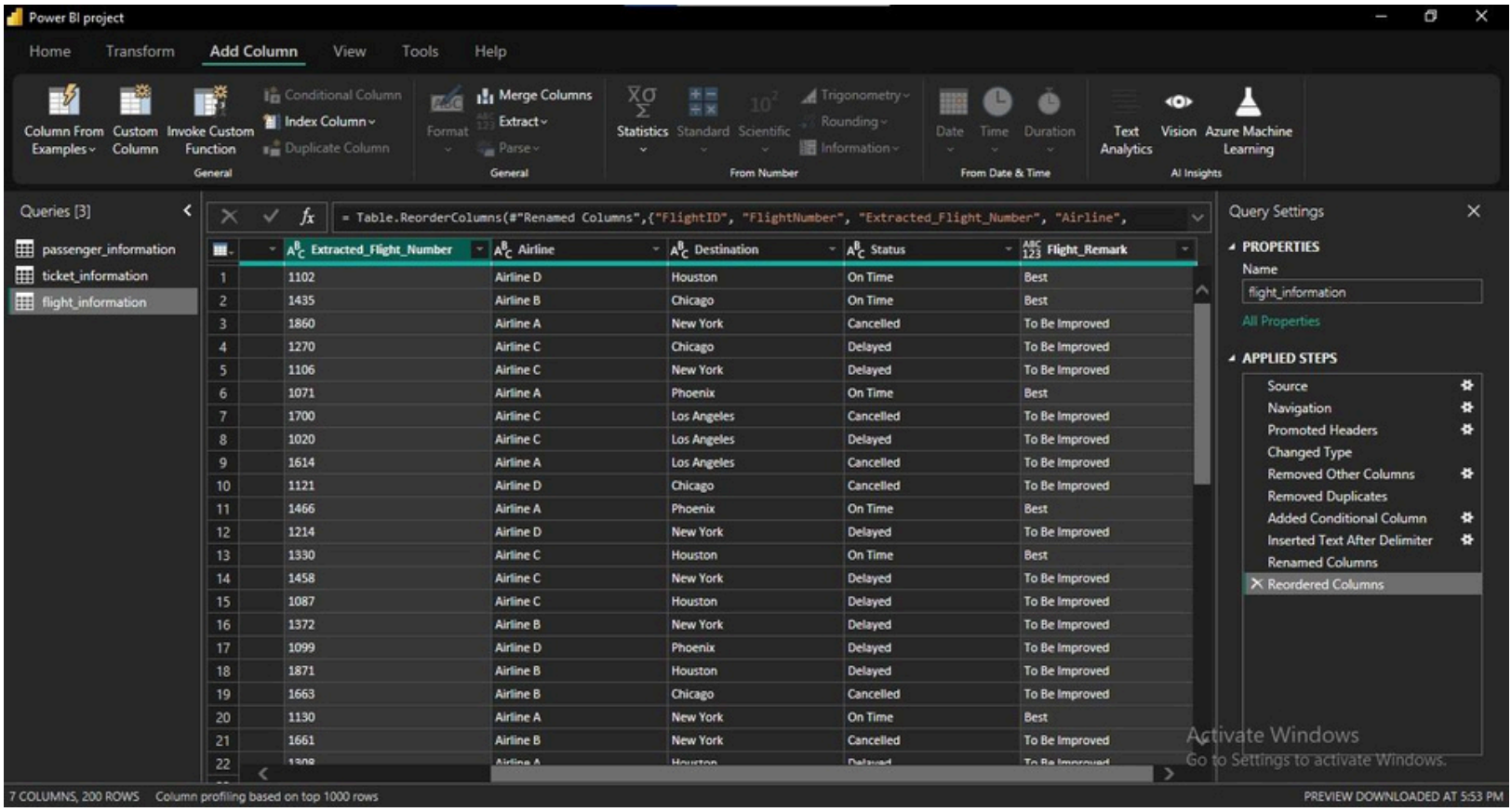
Steps involved:

Model view > arrange the blocks in correct order> drag the flightID column from passenger_information and ticket_infromation and drop in flight_information

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.



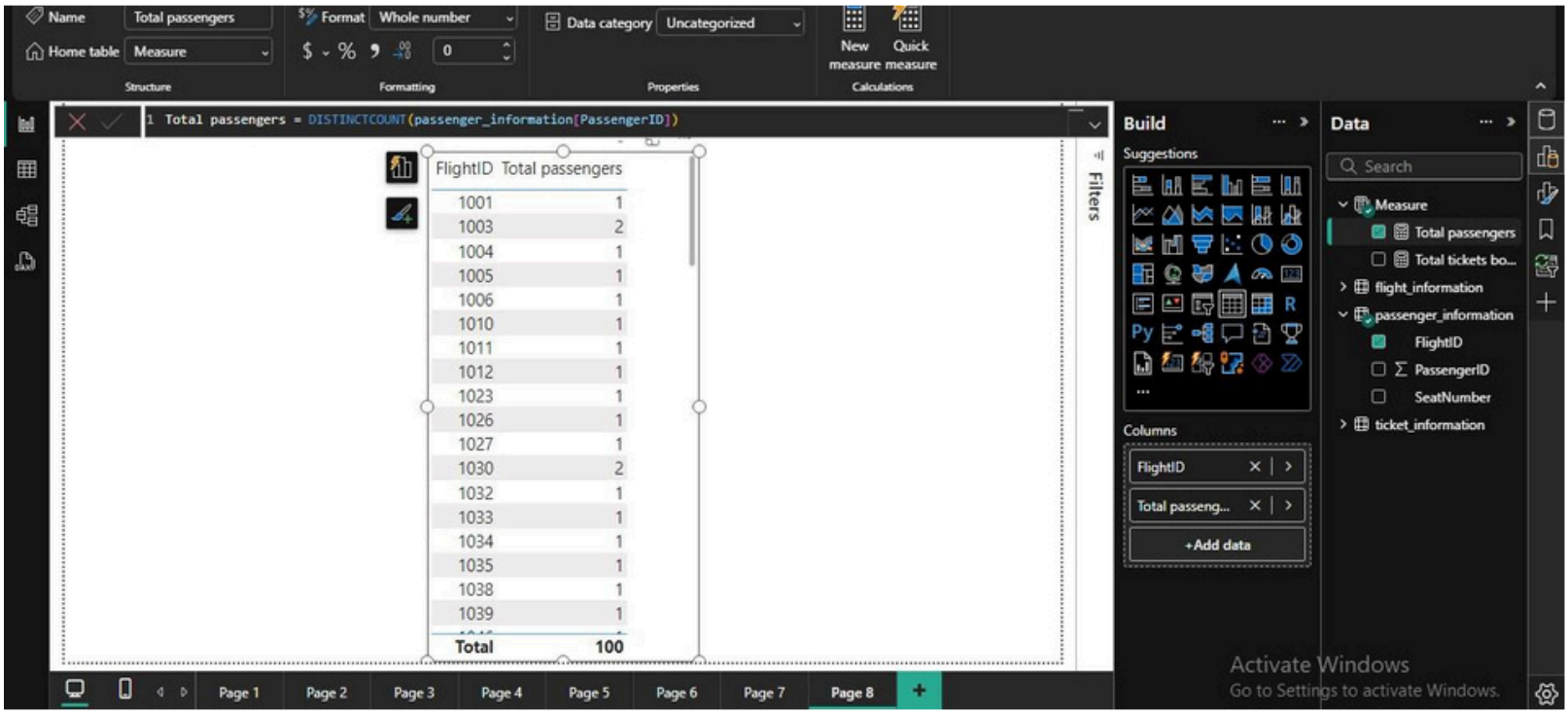
Steps involved:

Power query editor > Flight_information > Select Status column > Add column menu > conditional column > If Status = “On Time” then output = “Best” Otherwise = “To Be Impropved” > Select Flight_Number column > column from example > 1102 > 1435 > Rename the column > change the format of the column accordingly

Task-4:

Calculations Using DAX

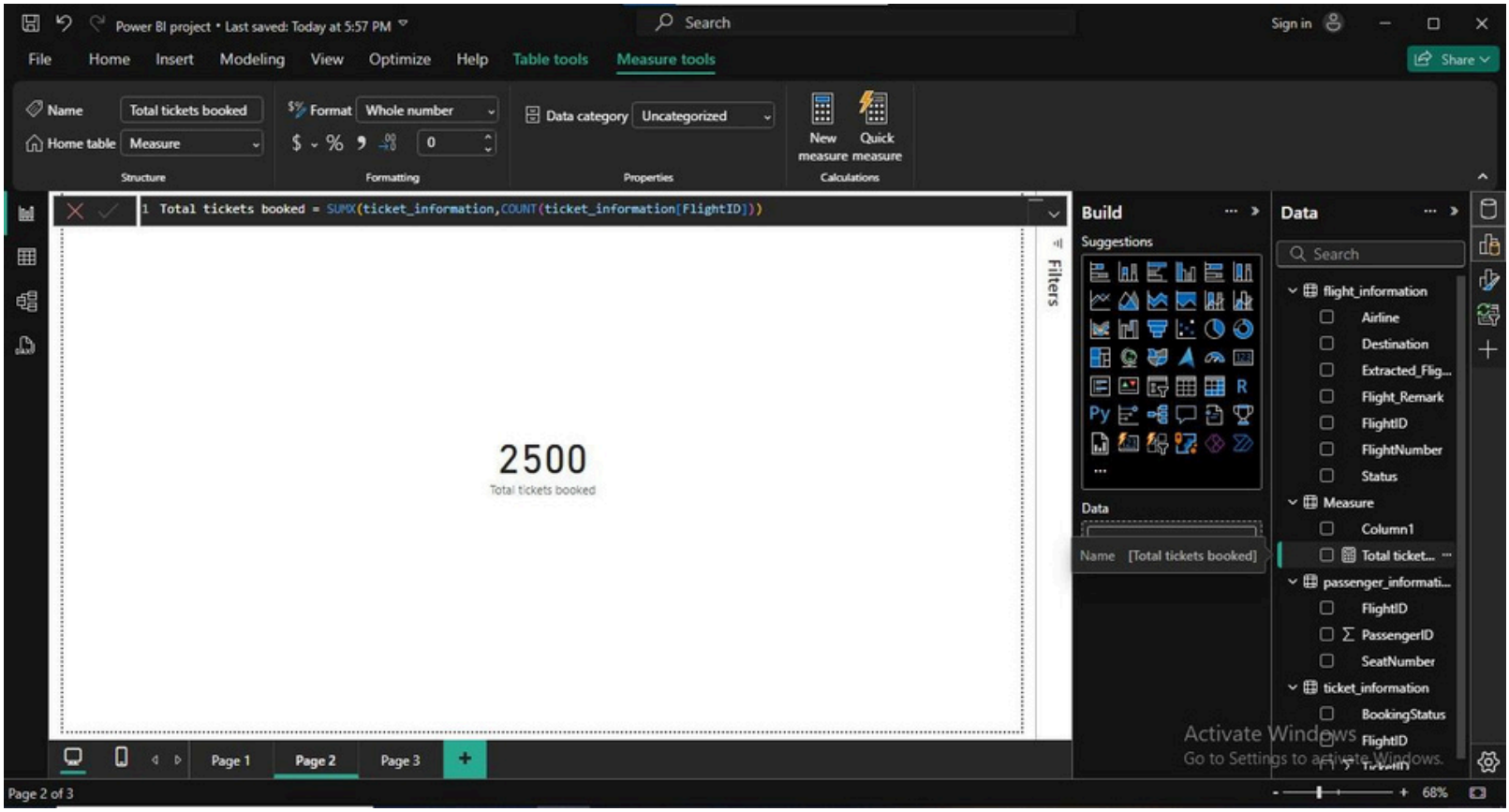
- Calculate:
  - Total passengers for a specific flight.



Steps involved:

Report view > Right click on measure > New measure > Total passengers = DISTINCTCOUNT(passenger_information[PassengerID]) > Select table visual > Add data = FlightID, Total passengers.

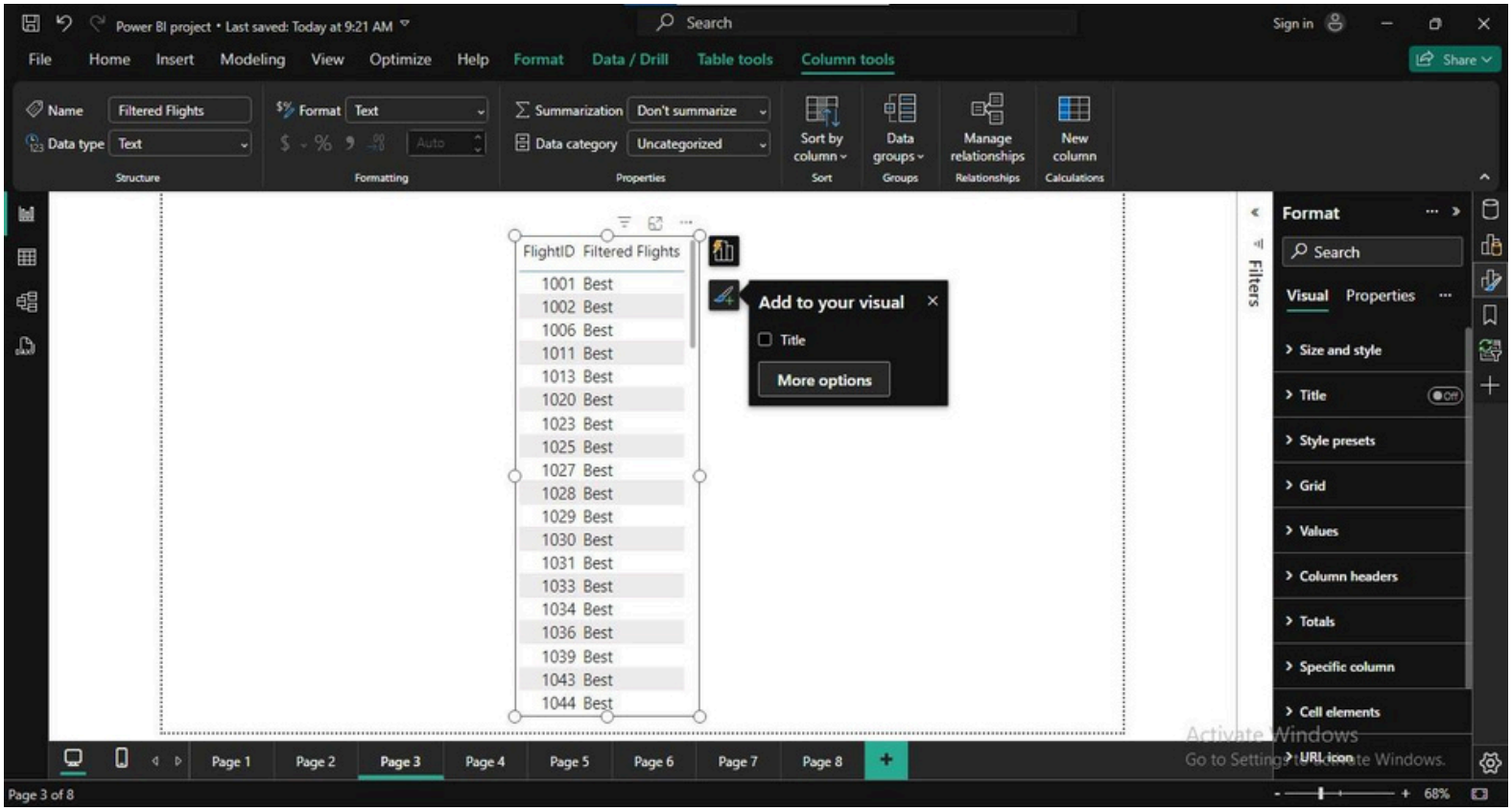
○ Total tickets booked.



Steps Involved:

Report view > Right click on measure > New measure > Total tickets booked = SUMX(ticket_information,COUNT(ticket_information[FlightID])) > select single-row card > add data = Total tickets booked

○ Filtered table showing "Best" flights only



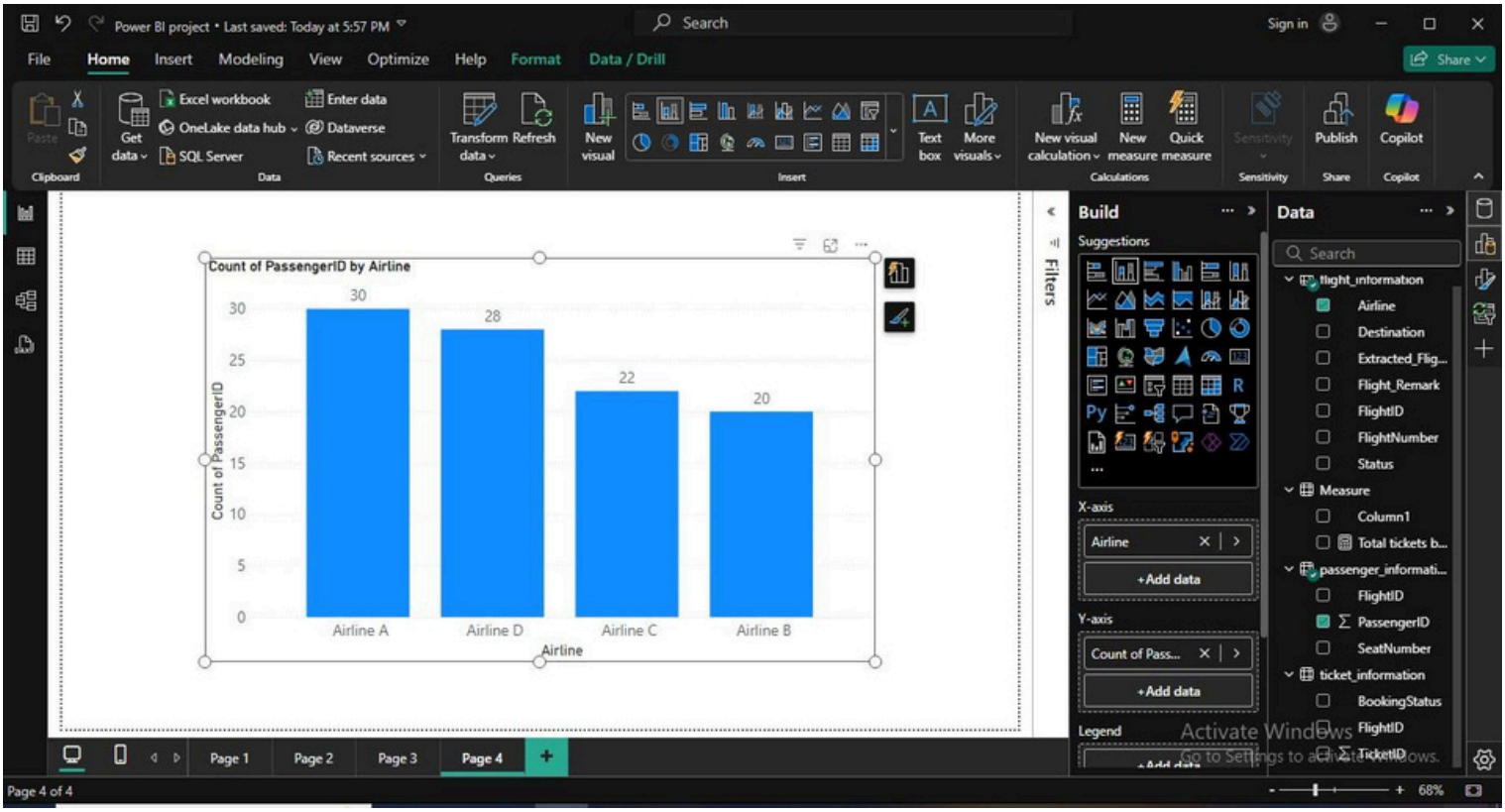
Steps Involved:

Report view > Right click on measure > New measure > Filtered Flights = FILTER(Flight_information, Flight_information[Flight_Remarks]="Best") >Table View > add Data = FlightID, Filtered Flights

Task-5:

Visualization and Interactive Features

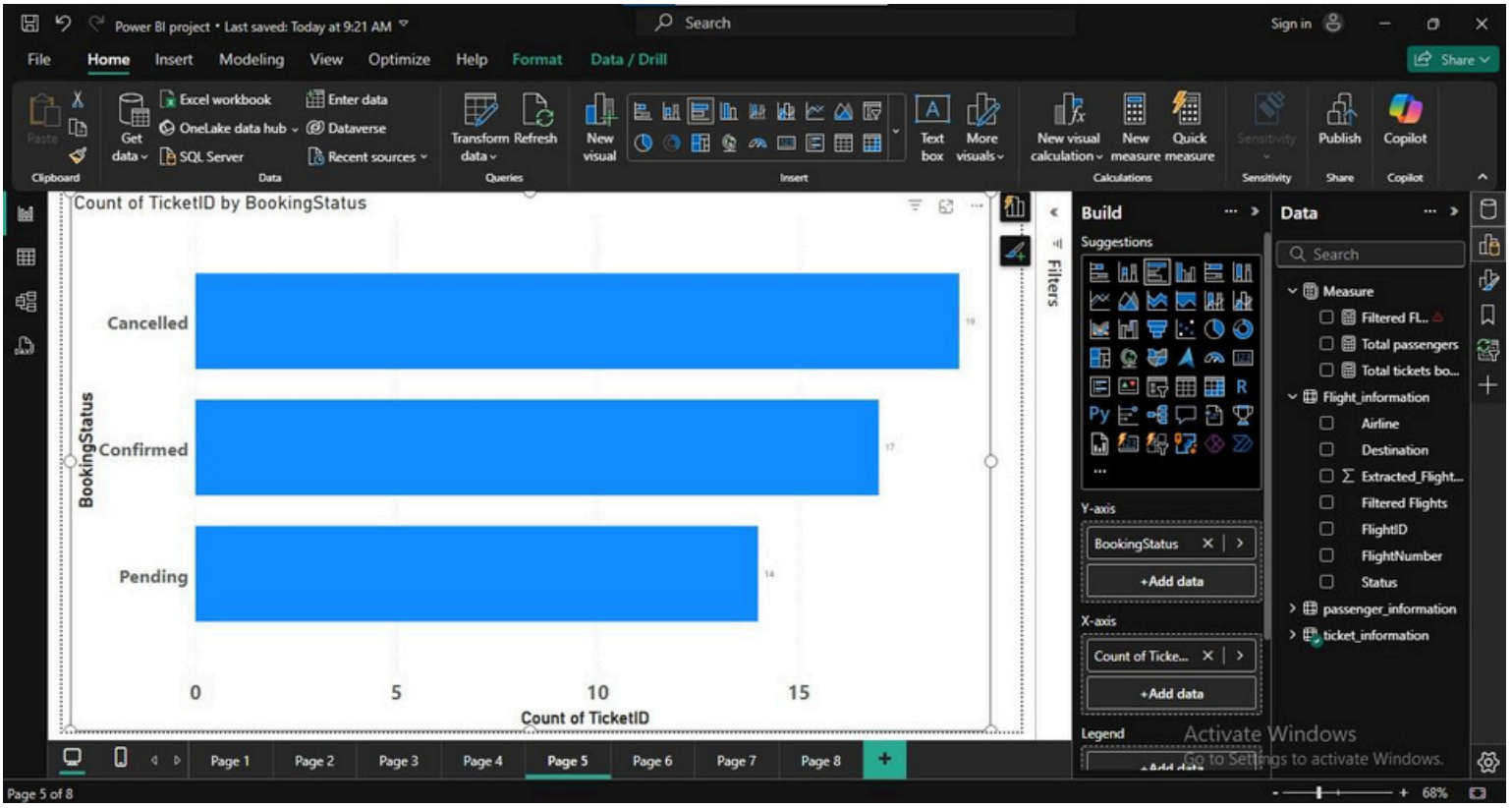
- Create visuals for:
  - Passenger count by airline.



Steps involved:

Report view > Select stacked bar chart > X-axis = Airlines > Y-axis= Count of passengers

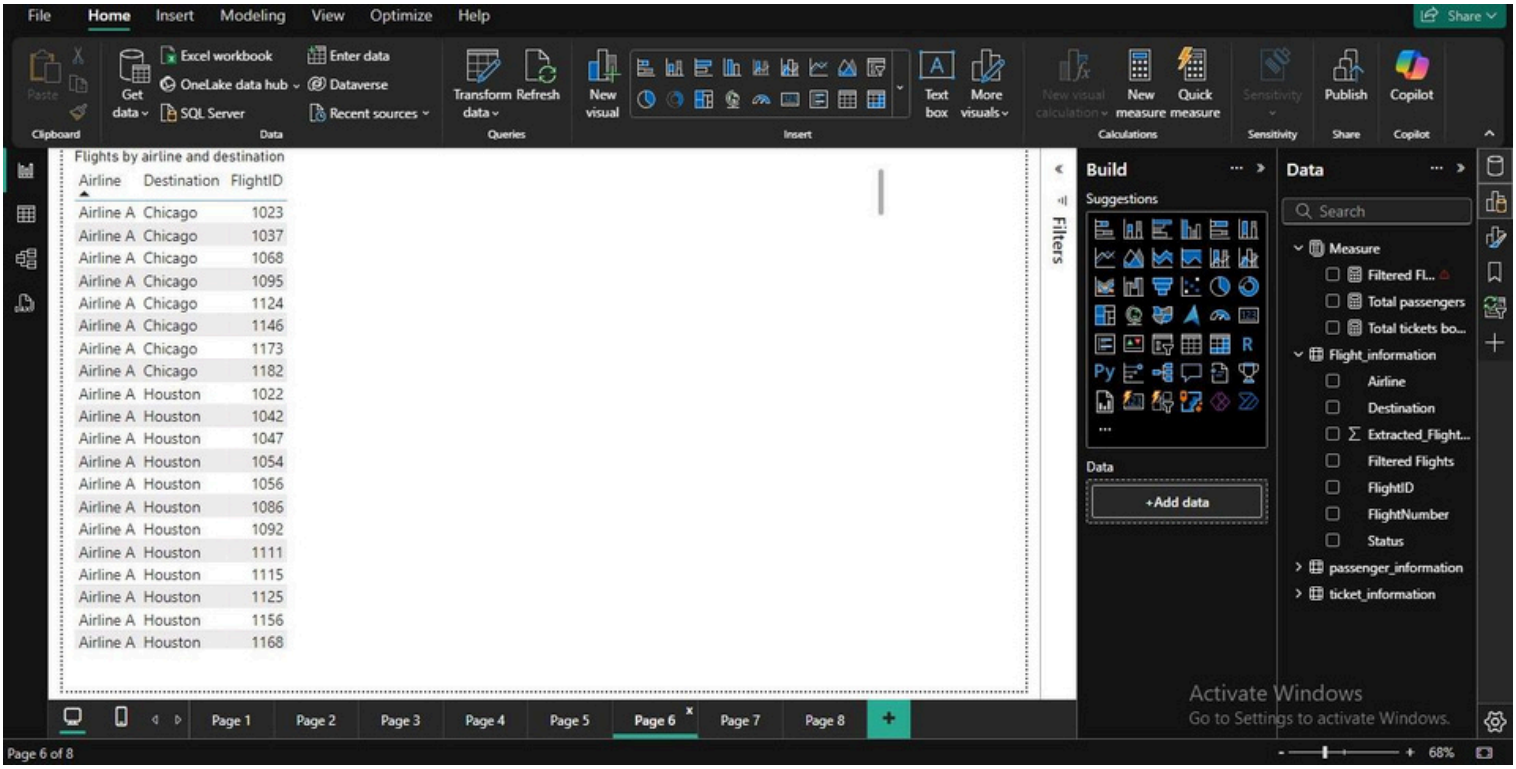
○ Ticket booking statuses.



Steps involved:

Report view > Select clustered bar chart > Y-axis= BookingStatus > X-axis = Count of TicketID

○ Flights by airline and destination.

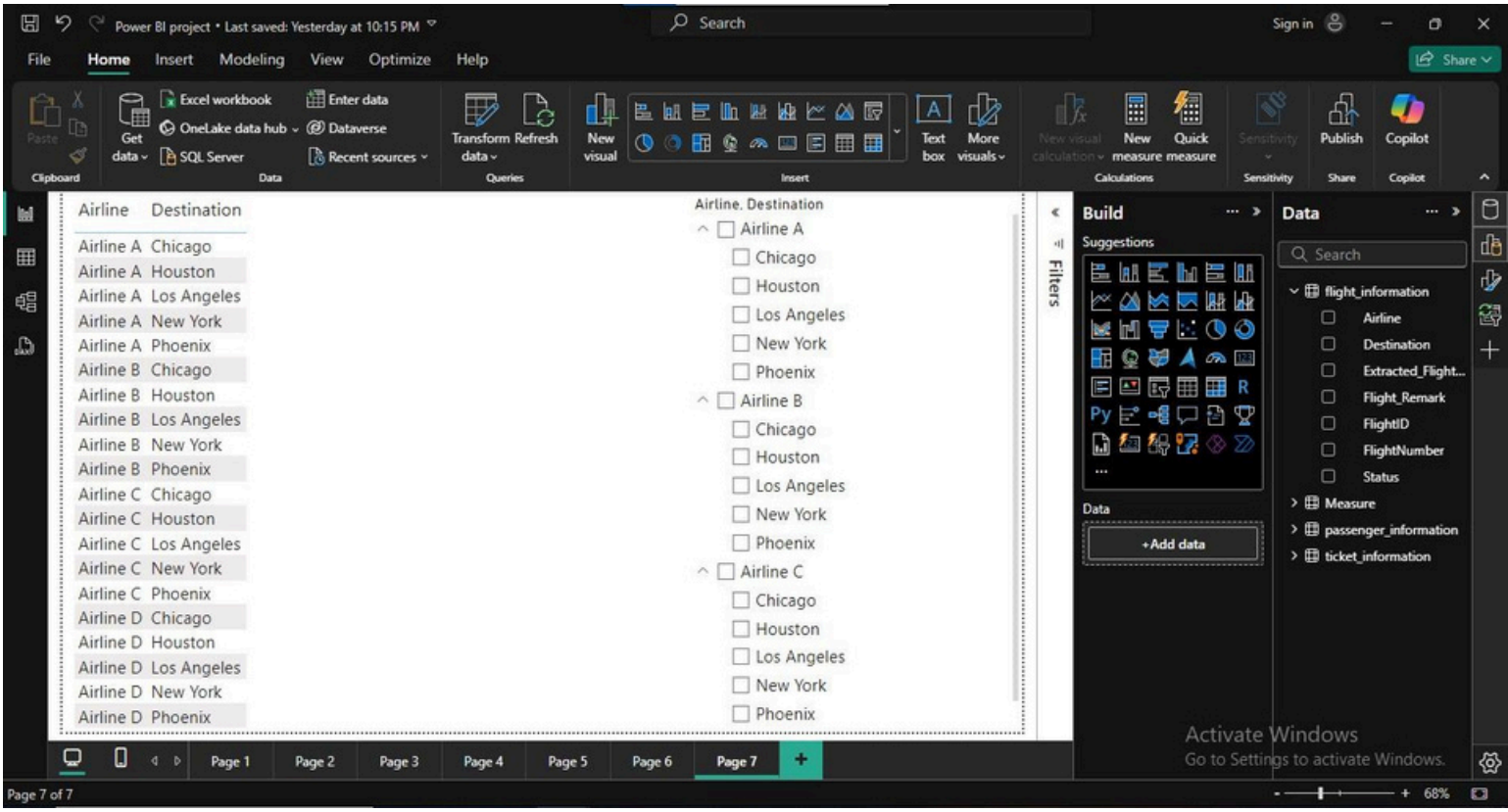


Steps involved:

Report view > Select table > add data = Airline, Destination, FlightID

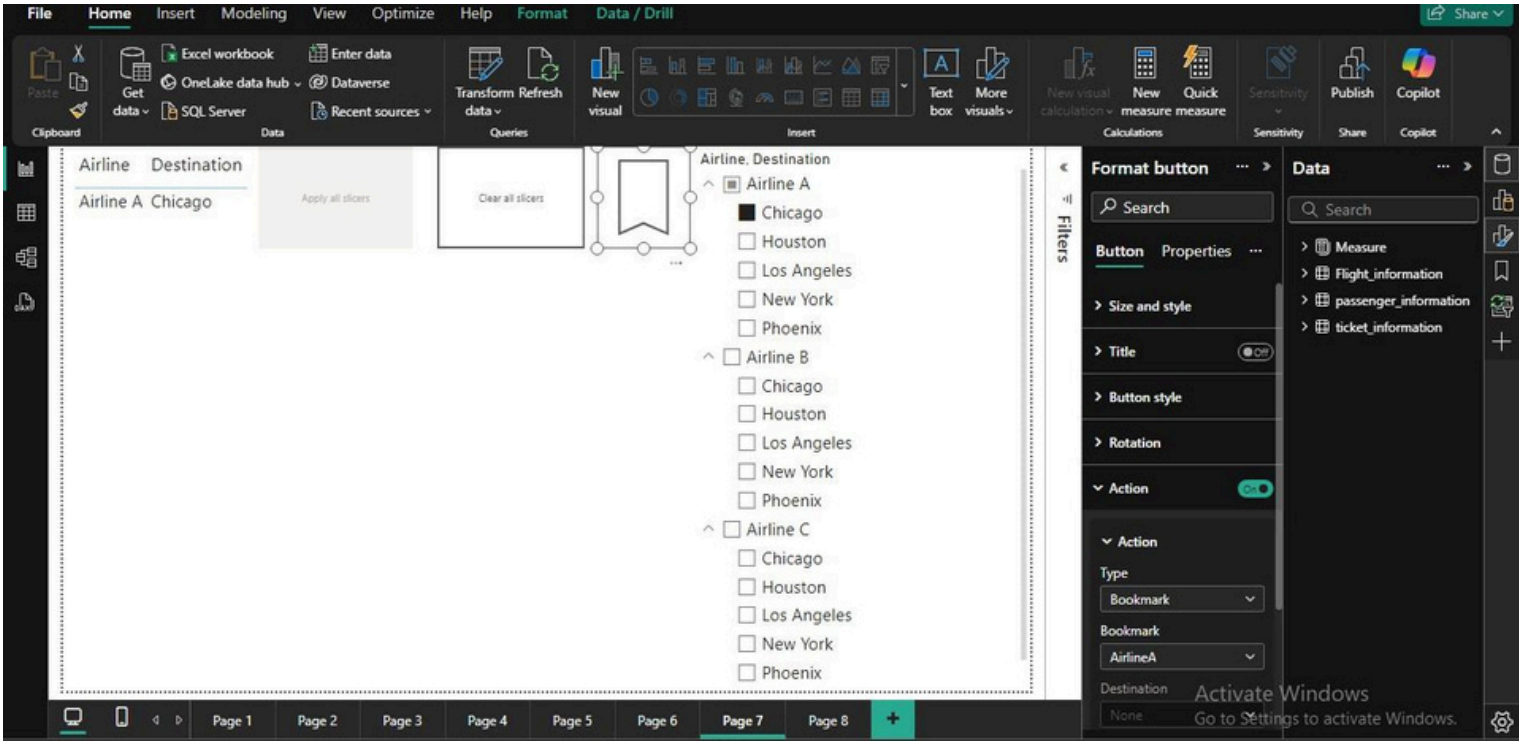
● Add interactive features for:

○ Destination and Airline.



Report view > select Table visual > Add data = Airlines, Destination > Select slicer visual > fields = Airlines, Destination

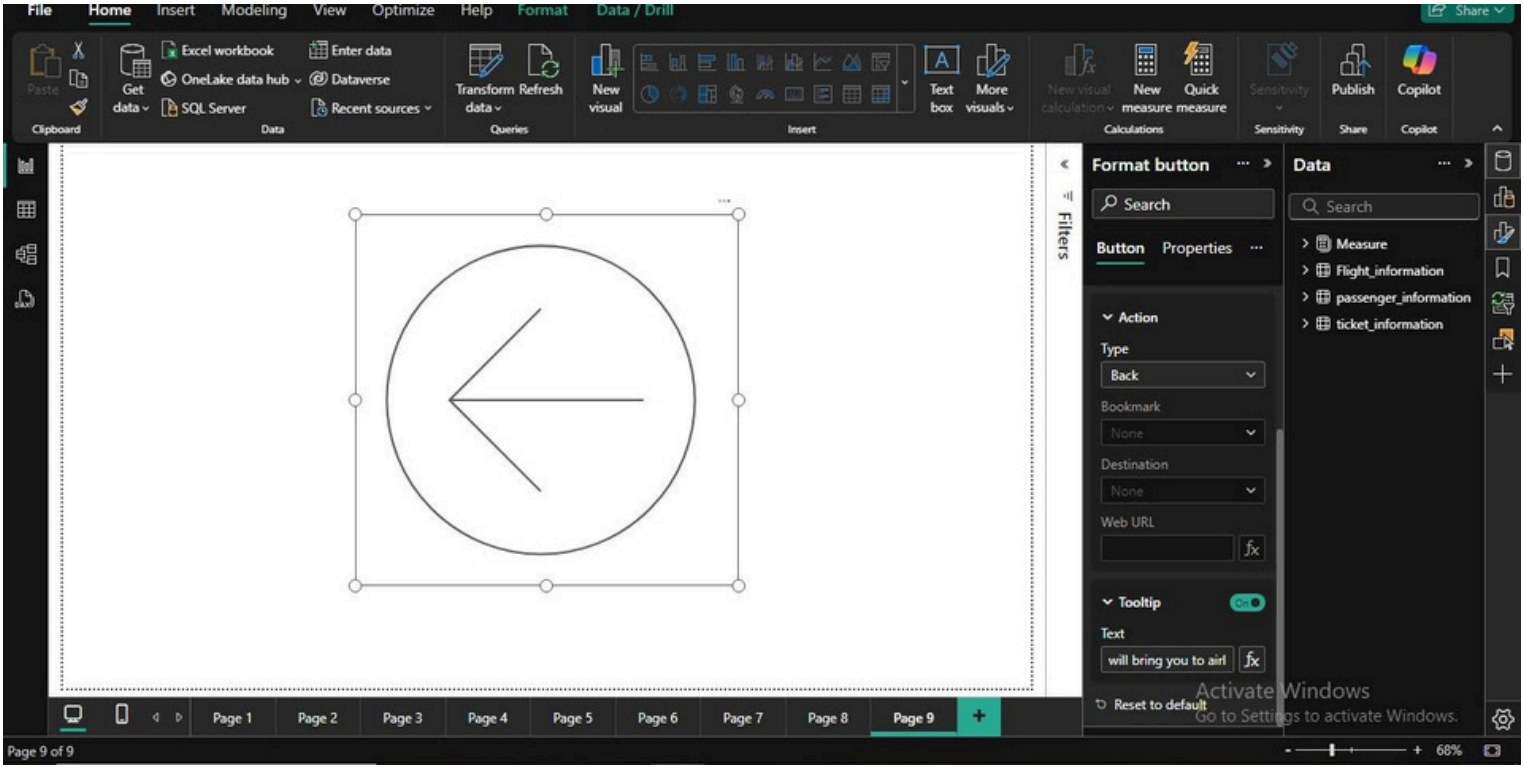
○ Quick views.



Steps involved:

Report view > Select table visual > Add data > Airlines, Destination > Select slicer visual > fields = Airlines, Destination > Select Chicago in Airline > view menu > Bookmark > Add > Rename to AirlineA > Insert menu > button > Bookmark > format pane of bookmark > bookmark = AirlineA > Button > Apply all slicer, Clear all slicers

○ Airline-specific pages



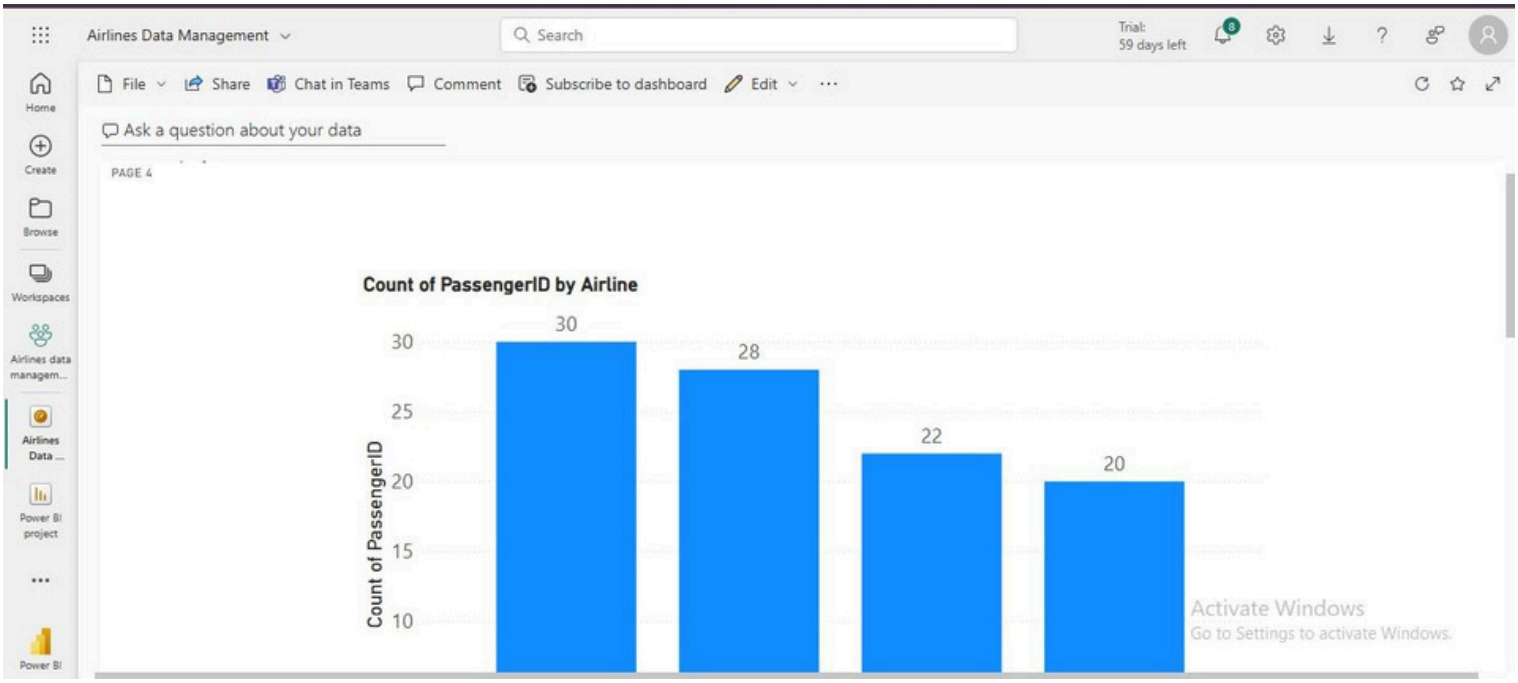
Steps involved:

Report view > Insert menu > button > back > format pane > tooltip > text = will bring you to airline specific pages.

Task-6:

Final Dashboard and Power BI Service

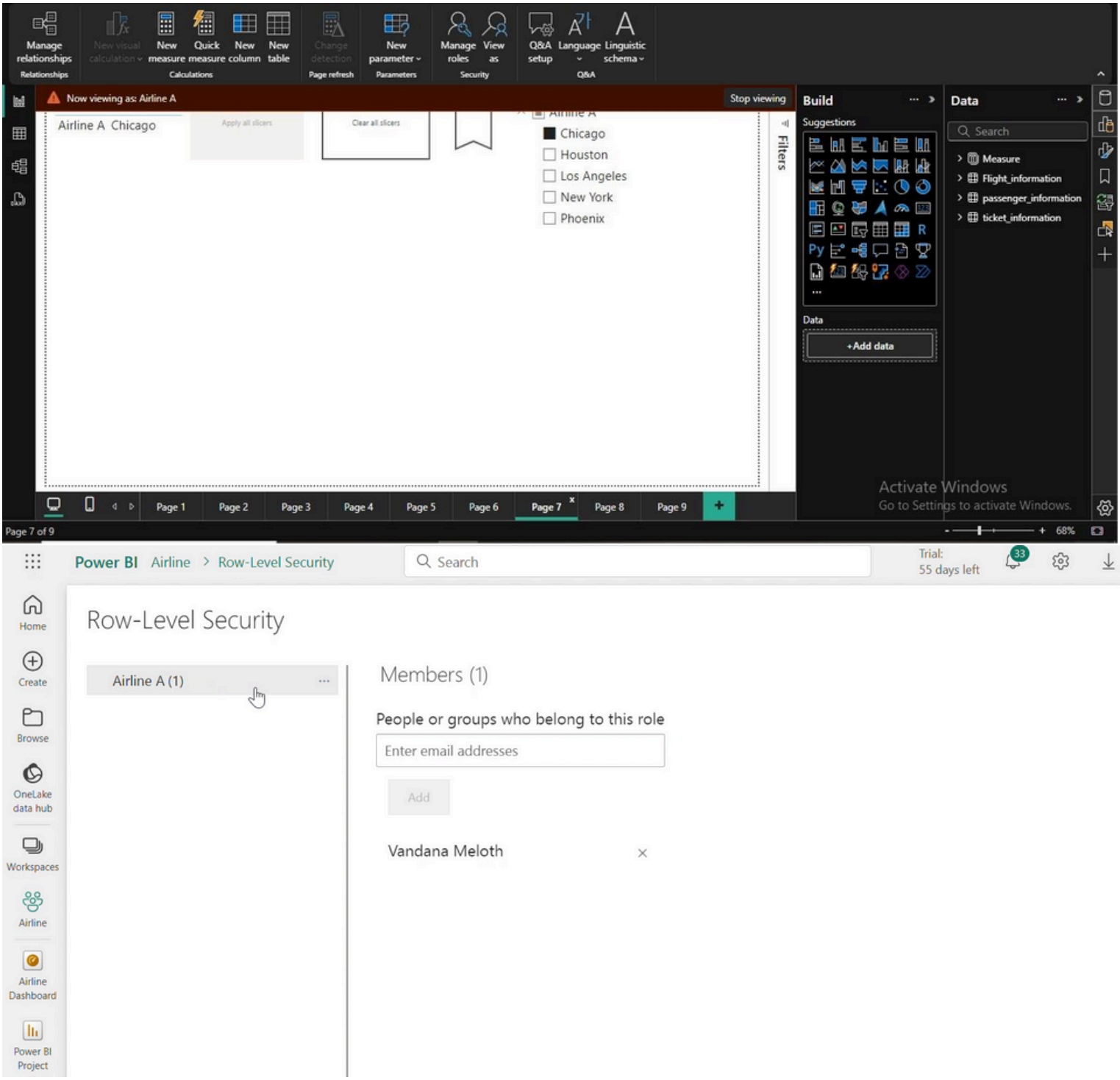
- Design a comprehensive dashboard with key visuals and insights.



Steps Involved:

PowerBI Service > Workspace > Report > … > Pin to a Dashboard > New Dashboard > Airlines Data Management > Pin Live

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

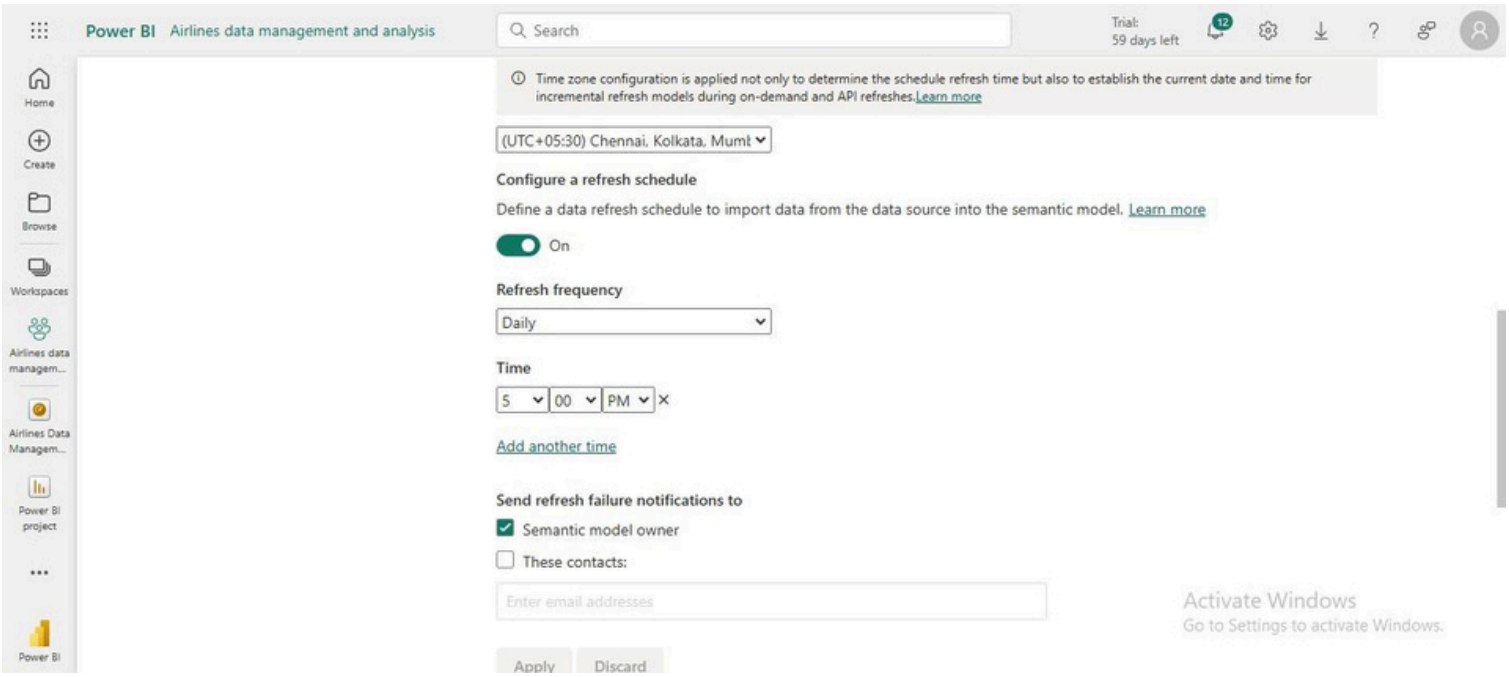


Steps Involved:

PowerBI Desktop > Modelling > Manage Roles > Airline A >Home > Publish > Airlines Data Management and analysis > select

PowerBI Service > Wrokspace > Semantic View of dataset > Security > Airline A > add the mail address of the person need to assign the file

● Set up a schedule refresh at 5 PM daily.



PowerBI Service > Create New Workspace = Airlines data management and analysis > Installed Data gateway > Settings > Semantic Model > Refresh Frequency = Daily > Time = 5:00 PM