Name:- Chaitanya Deshpande

Airline Data Management and Analysis Using Power BI

1. Data Preparation and Cleaning (10 Marks)

● Extract and transform data in Power Query.

● Clean data: remove duplicates, handle missing values, and format columns.

● Deliverables: Screenshot of Power Query Editor showing cleaned data.

Steps:-

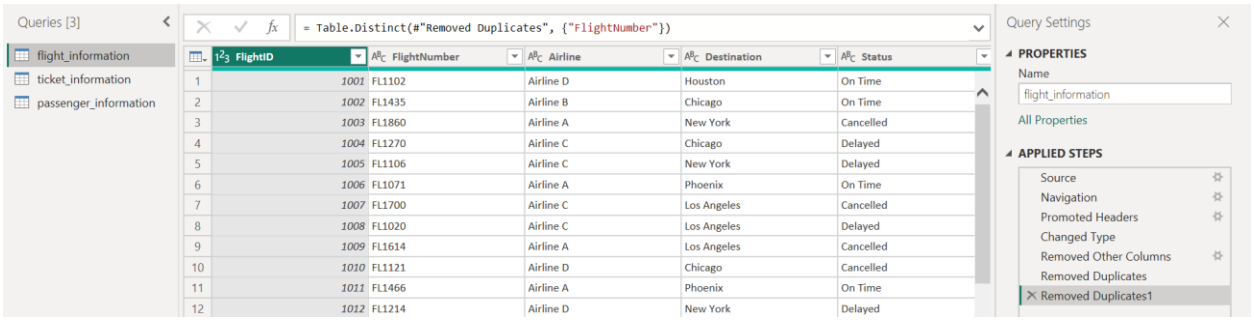
Load the three Excel files into Power BI via Power Query Editor.

Clean data:

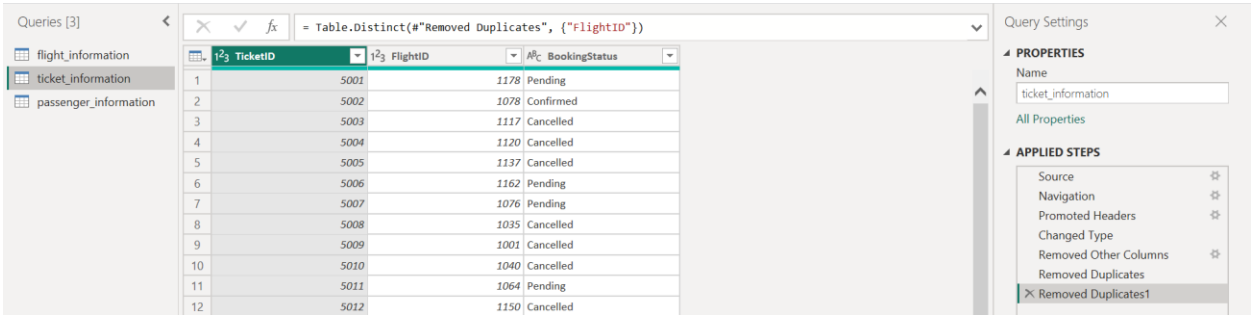
- Remove duplicates using Remove Duplicates.
- Handle missing values using Remove Rows → Remove Blank Rows or fill/replace as needed.
- Format columns (e.g., convert date columns to Date format, IDs to text, etc.).

Screenshots:-

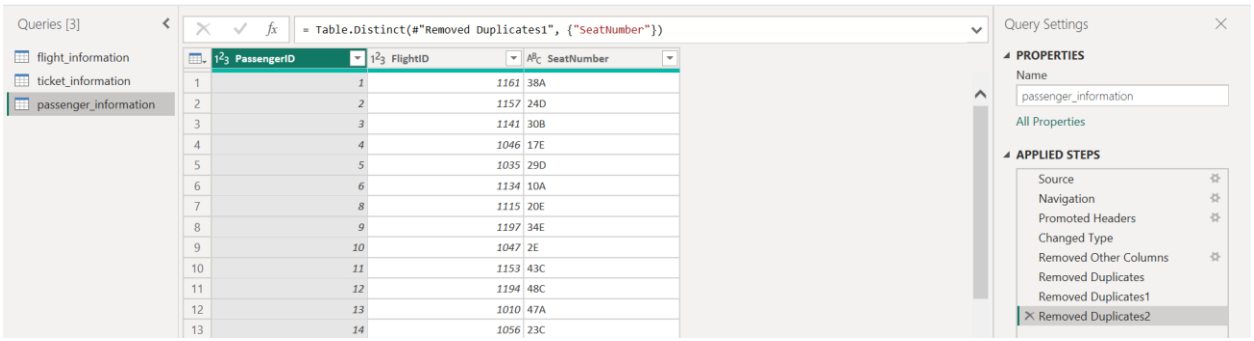
i) Flight Information:-



ii) Ticket Information:-



iii) Passenger Information:-



2. Data Modeling (10 Marks)

- **Create relationships between datasets (FlightID as the key).**
- **Understand cardinality and configure the model appropriately.**
- **Deliverables: Screenshot of the data model with relationships.**

Steps:-

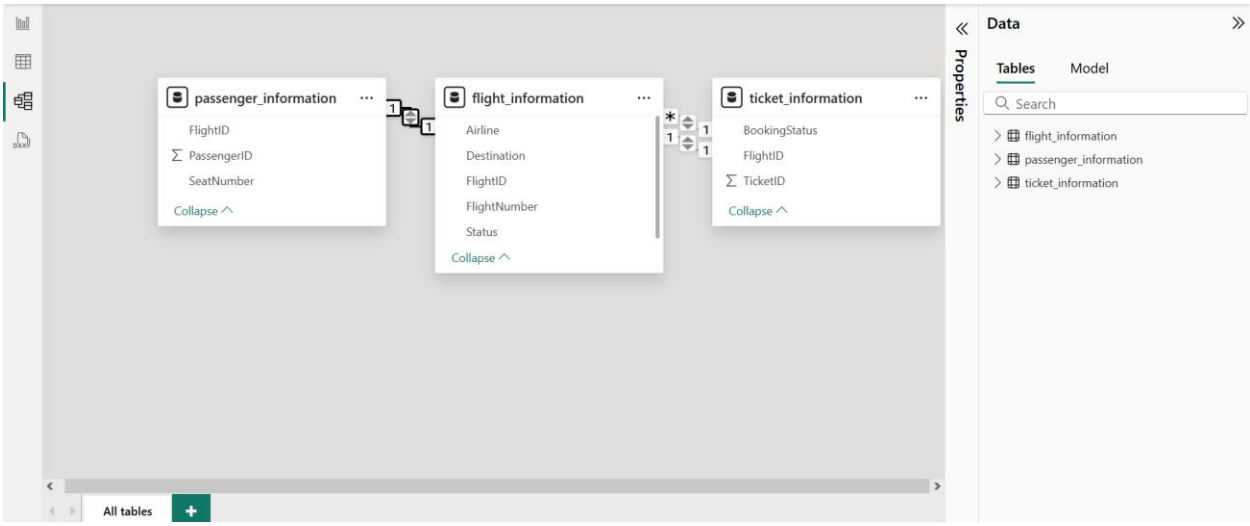
Go to Model View.

Create relationships:

- Flight_Information[FlightID] → Ticket_Information[FlightID]
- Flight_Information[FlightID] → Passenger_Information[FlightID]

Ensure cardinality is "One-to-Many" from Flight_Information to both other tables.

Screenshot:-



3. Enhanced Data Insights (10 Marks)

● Add a conditional column to classify flights as "Best" or "To Be Improved" based on status.

● Use"Columnfrom Examples" to extract the flight number from FlightNumber.

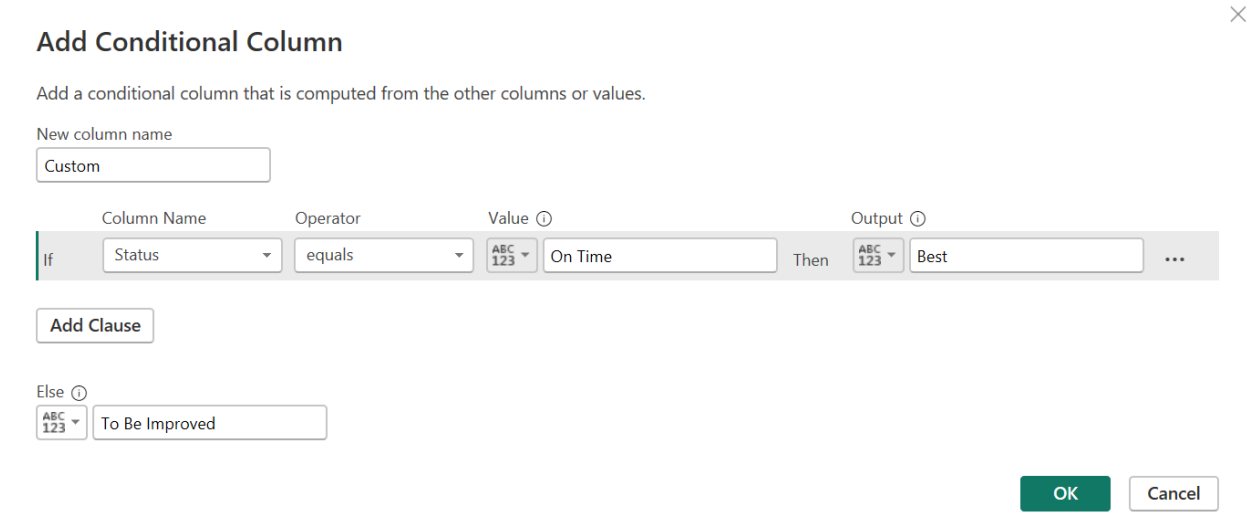
● Deliverables: Screenshot of the transformed data.

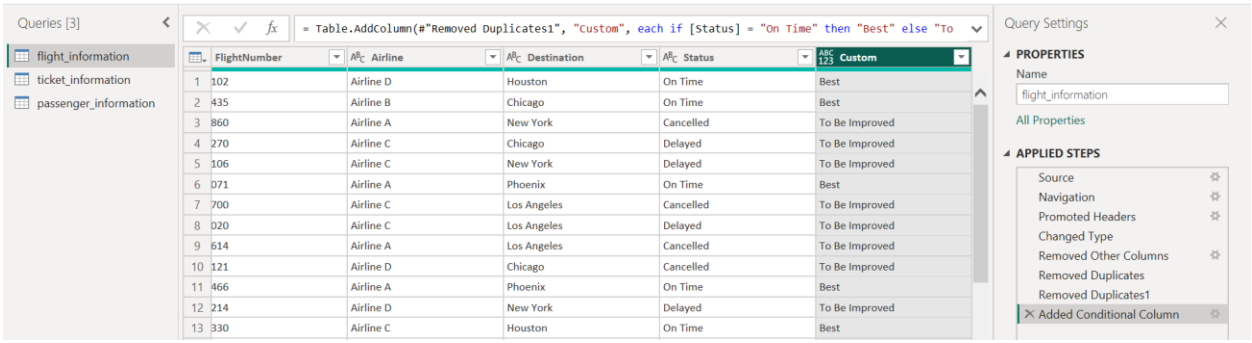
Steps:-

- In Power Query:

- Add a conditional column in Flight_Information:
  = if [Status] = "On Time" then "Best" else "To Be Improved"
- Use Column From Examples to extract flight number from FlightNumber (e.g., extract numeric part).

Screenshots:-





4. Calculations Using DAX (10 Marks)

- **Calculate:**
  - **Total passengers for a specific flight.**
  - **Total tickets booked.**

- **Filtered table showing "Best" flights only.**

- **Deliverables: Screenshot of DAX calculations and results.**

Dax Query:-

Flight Information:-

“BestFlights =

FILTER(Flight_Information, Flight_Information[FlightClass] = "Best")”

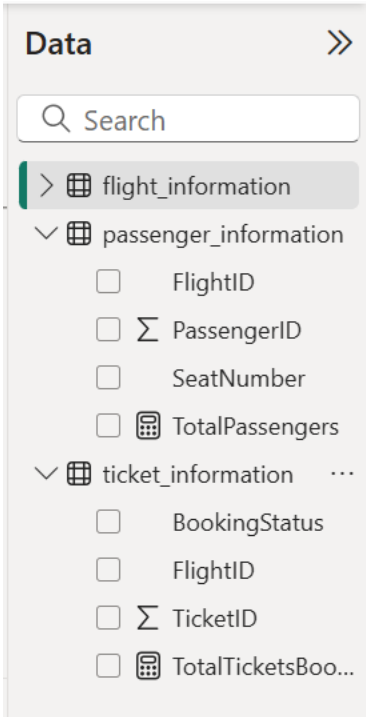
Passenger Information:-

“TotalPassengers = COUNTROWS(Passenger_Information)”

Ticket Information:-

“TotalTicketsBooked = COUNTROWS(Ticket_Information)”

Screenshots:-



5. Visualization and Interactive Features (20 Marks)

- **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.**
- **Deliverables: Screenshots of all visuals and interactive features.**

Steps:-

Create visuals:

- Passenger count by airline → Bar chart.
- Ticket booking status → Pie chart.
- Flights by airline & destination → Matrix or stacked bar chart.

Add slicers for:

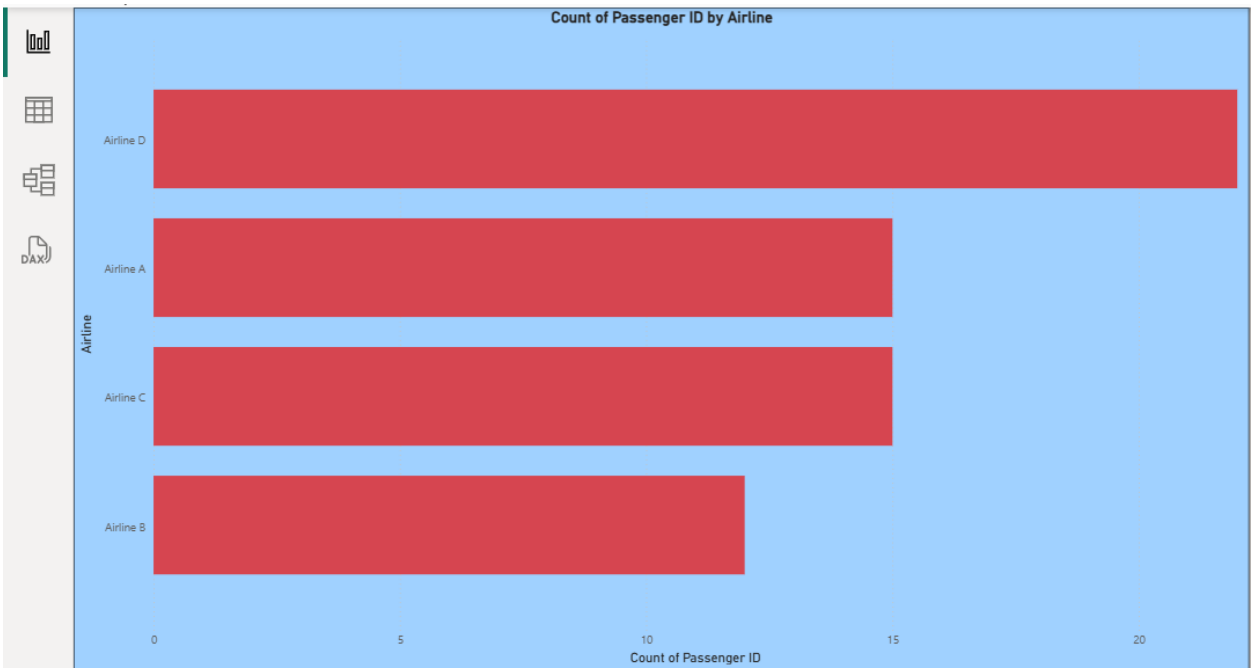
- Destination
- Airline

Use Page Navigation for airline-specific pages.

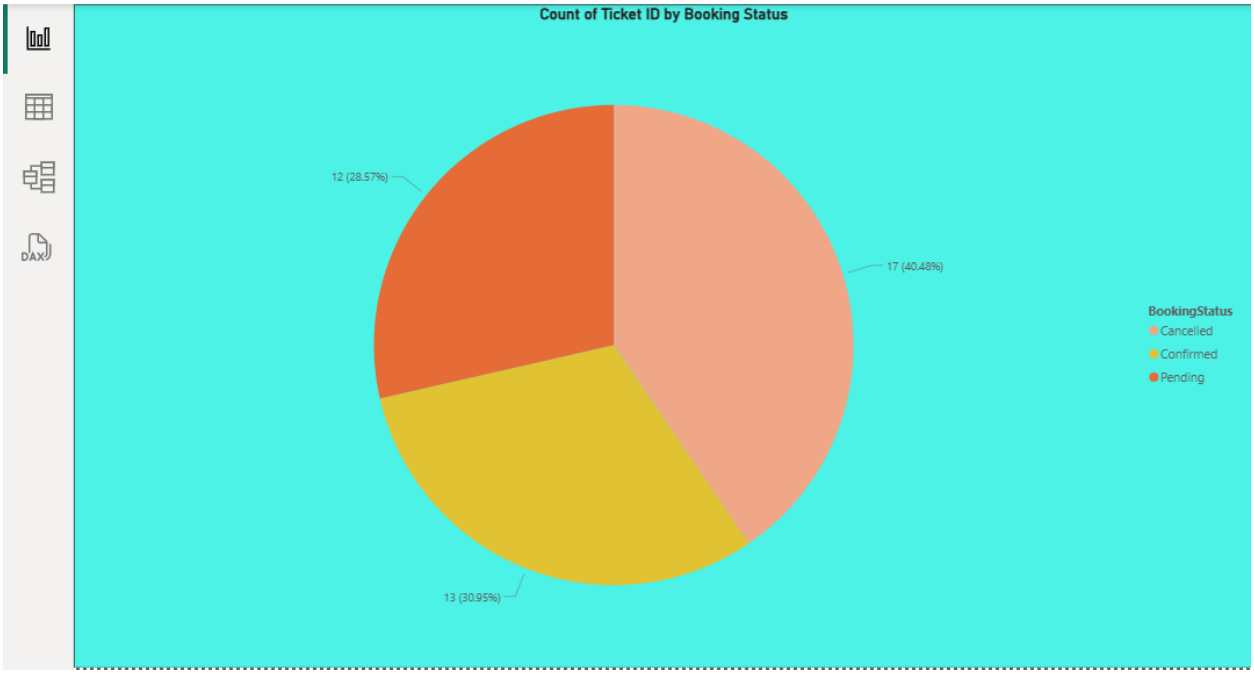
Add Quick Views using bookmarks and buttons.

Screenshots:-

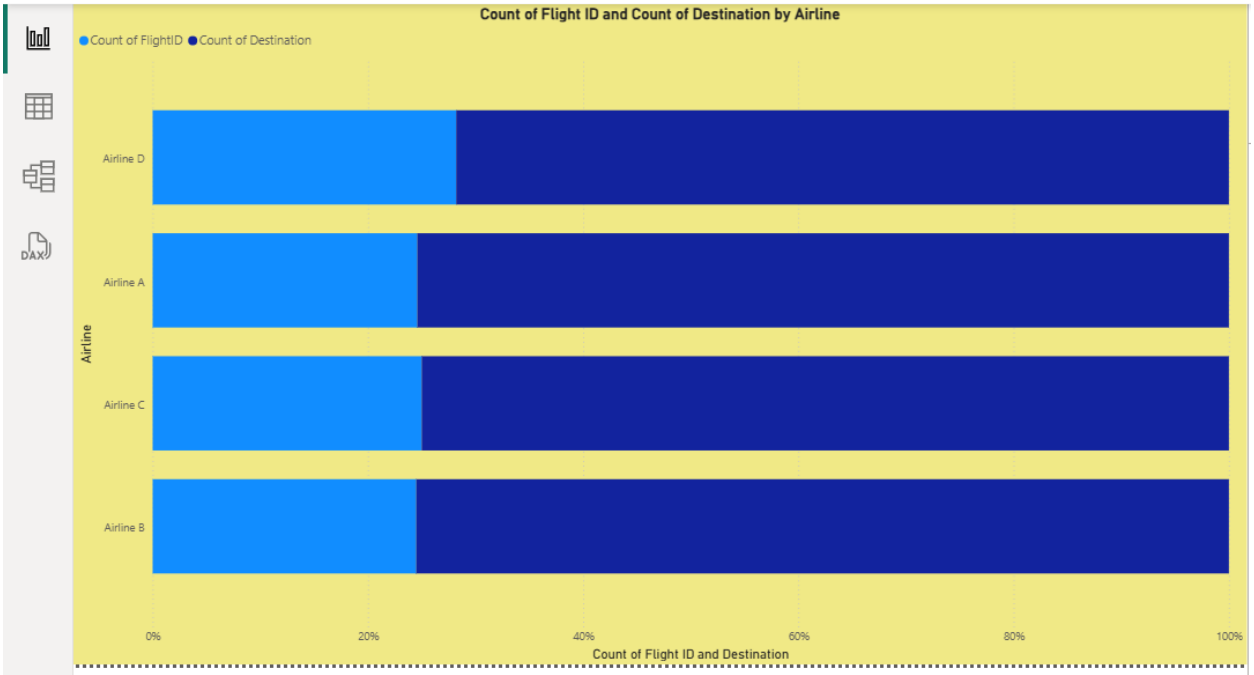
Passenger Count By Airline:-



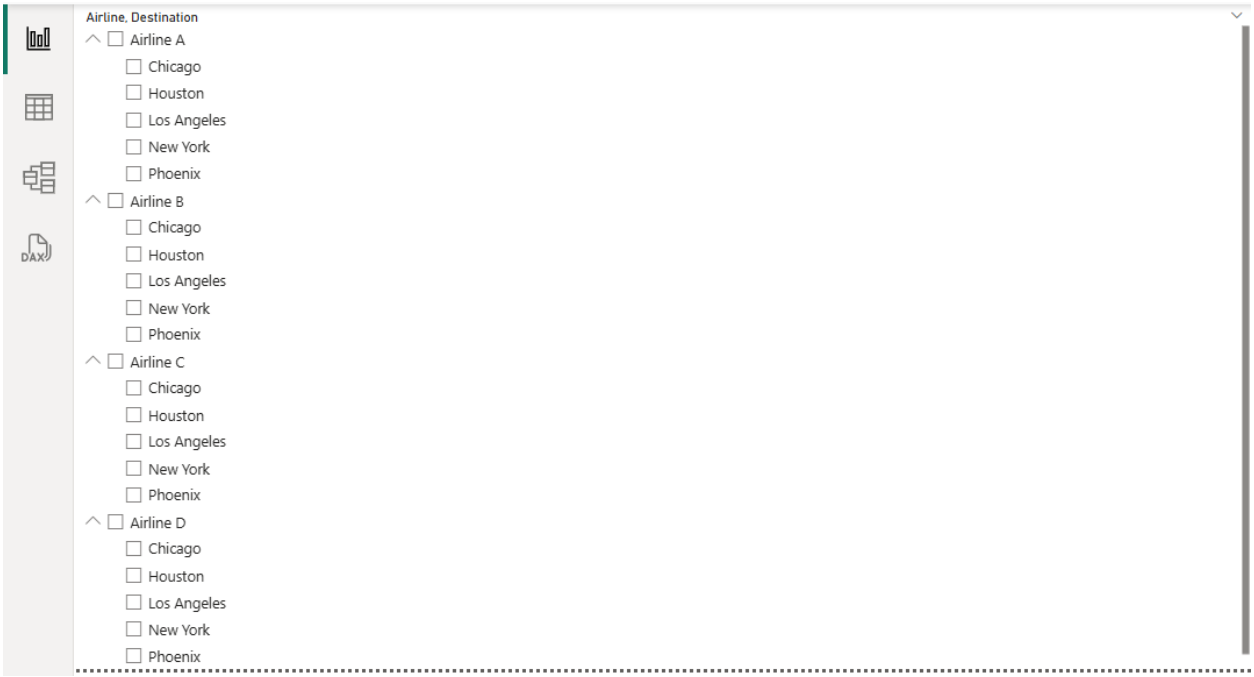
Ticket Booking Status:-



Flights By Airline and Destination:-



Slicer:-



6. Final Dashboard and Power BI Service (20 Marks)

- **Design a comprehensive dashboard with key visuals and insights.**

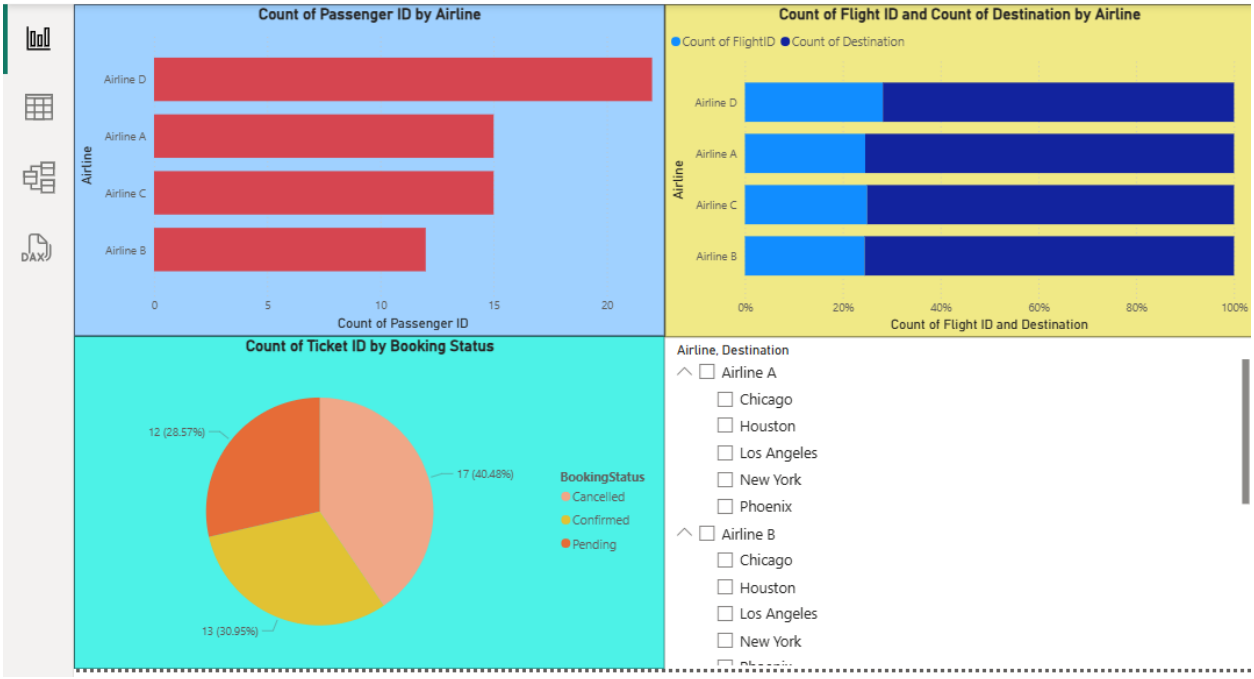
● **Configure Row-Level Security (RLS) for Airline A data and assign it to a user.**

● **Setup a schedule refresh at 5 PM daily.**

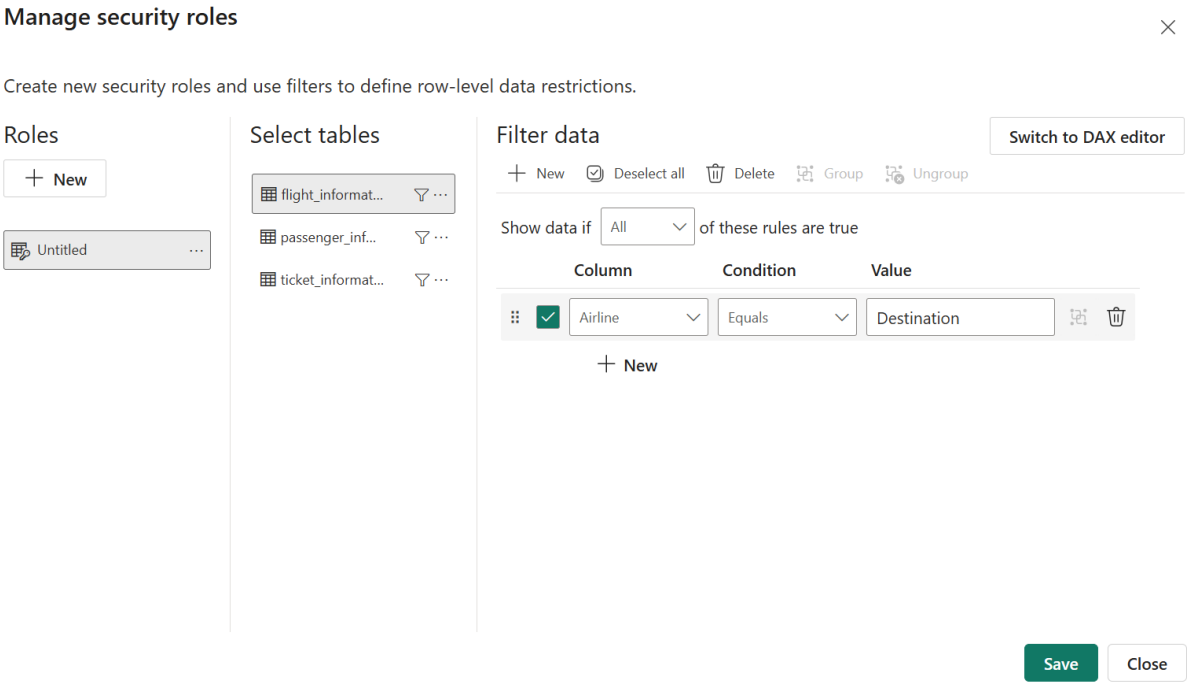
● **Deliverables: Screenshot of the published dashboard and RLS configuration.**

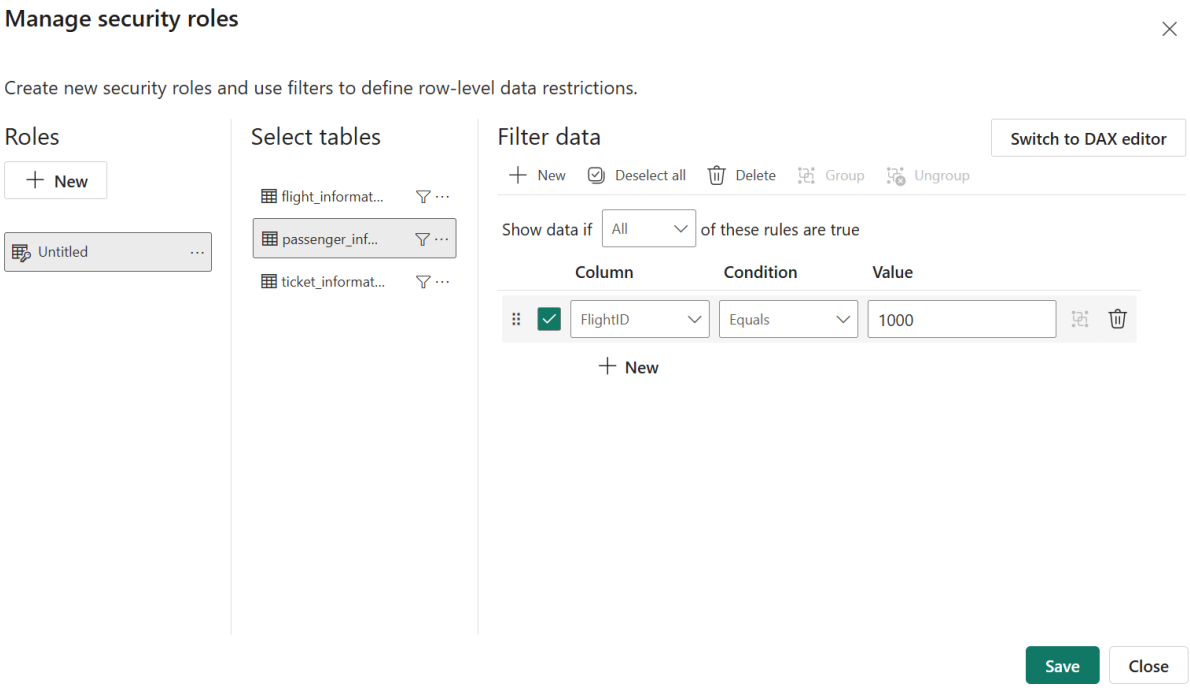
Screenshots:-

Published Dashboards:-



RLS Role Setup:-


Manage security roles
Create new security roles and use filters to define row-level data restrictions.
Roles
New
Untitled
Select tables
flight_informat...
passenger_inf...
ticket_informat...
Filter data
Switch to DAX editor
New
Deselect all
Delete
Group
Ungroup
Show data if
All
of these rules are true
Column
Condition
Value
Airline
Equals
Destination
New
Save
Close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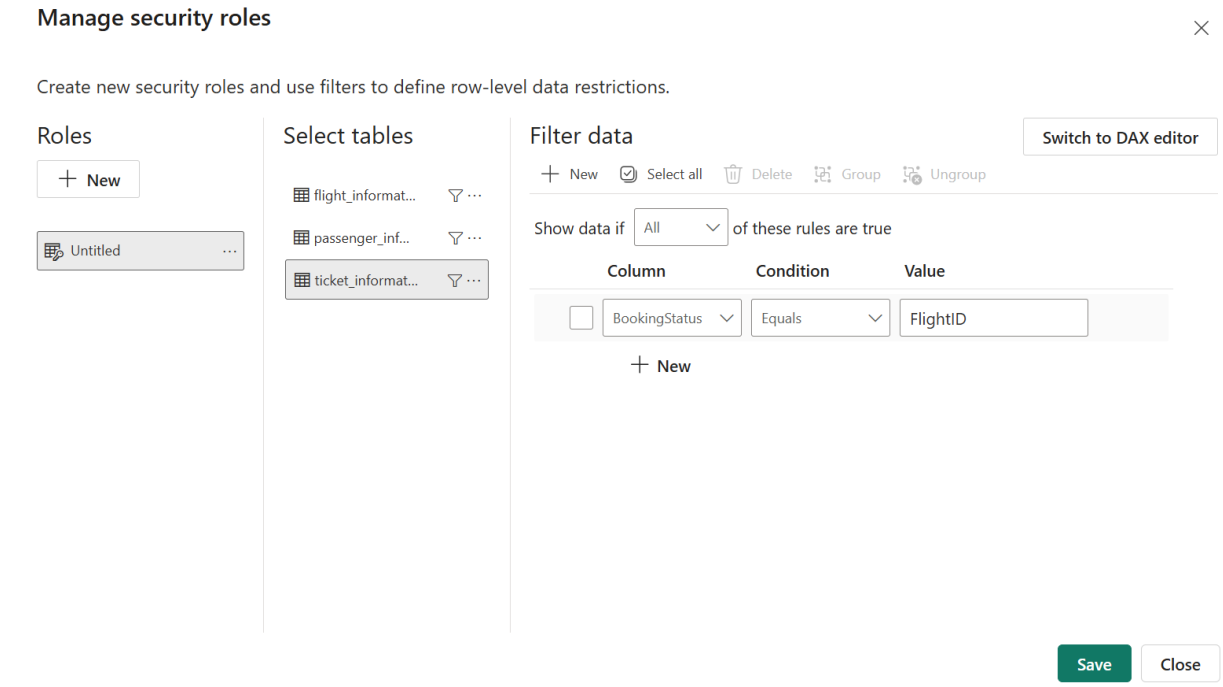
Deselect all
Delete
Group
Ungroup
Show data if
All
of these rules are true
Column
Condition
Value
FlightID
Equals
1000
New
Save
Close



Scheduled Refresh:-