

Untitled - Power Query Editor

Home Transform Add Column View Tools Help

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

Queries [3]

flight_information

| | 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 | FL1663 | 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 |
| 26 | 1026 | FL1413 | Airline D | Chicago | Cancelled |
| 27 | 1027 | FL1805 | Airline D | Chicago | On Time |
| 28 | 1028 | FL1385 | Airline D | Chicago | On Time |
| 29 | 1029 | FL1191 | Airline D | Los Angeles | On Time |
| 30 | 1030 | FL1955 | Airline B | Phoenix | On Time |
| 31 | 1031 | FL1276 | Airline B | New York | On Time |

5 COLUMNS, 200 ROWS Column profiling based on top 1000 rows PREVIEW DOWNLOADED AT 17:20

Task 1: Data Preparation and Cleaning

Extract and transform data in Power Query.

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

Steps Taken:

Flight information dataset:

- From the home tab in power query opted the remove rows option with duplicated as the dataset did not have any duplicates so none were removed.
- From the transform tab selected the option use first row as header to promote the headers by 1 row.
- From the drop down in column headers assigned the data types to each column.
- The data set had a lot of extra columns so from the home tab in power query choose the remove column option to remove those columns.

Untitled - Power Query Editor

Home Transform Add Column View Tools Help

Close & Apply New Recent Enter Data source settings Manage Refresh Advanced Editor Properties Choose Columns Remove Keep Rows Group Data Type Whole Number Merge Queries Text Analytics Close New Query Sources Data Sources Parameters Preview Manage Use First Row as Headers Append Queries Vision Combine Files Combine AI Insights

Queries [3] `= Table.Distinct(#"Removed Columns", {"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 |
| 22 | 22 | 1146 | 5B |
| 23 | 23 | 1177 | 28B |
| 24 | 24 | 1011 | 22E |
| 25 | 25 | 1085 | 6A |
| 26 | 26 | 1026 | 5A |
| 27 | 27 | 1063 | 12B |
| 28 | 28 | 1086 | 46B |
| 29 | 29 | 1059 | 49B |
| 30 | 30 | 1027 | 45C |
| 31 | 31 | 1177 | 9B |

3 COLUMNS, 100 ROWS Column profiling based on top 1000 rows PREVIEW DOWNLOADED AT 17:21

Task 1: Data Preparation and Cleaning

Extract and transform data in Power Query.

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

Steps Taken:

Passenger information dataset:

- From the home tab in power query opted the remove rows option with duplicated as the dataset did not have any duplicates so none were removed.
- From the drop down in column headers assigned the data types to each column.
- The data set had a lot of extra columns so from the home tab in power query choose the remove column option to remove those columns.

Untitled - Power Query Editor

Home Transform Add Column View Tools Help

Close & Apply New Source Recent Sources Enter Data Data source settings Manage Parameters Refresh Preview Advanced Editor Properties Choose Columns Remove Columns Split Column Group By Replace Values Data Type: Whole Number Merge Queries Use First Row as Headers 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_information

ticket_information

= Table.Distinct(#"Removed Columns", {"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 |
| 22 | 5022 | 1035 | Confirmed |
| 23 | 5023 | 1165 | Confirmed |
| 24 | 5024 | 1005 | Confirmed |
| 25 | 5025 | 1083 | Cancelled |
| 26 | 5026 | 1123 | Cancelled |
| 27 | 5027 | 1078 | Confirmed |
| 28 | 5028 | 1154 | Pending |
| 29 | 5029 | 1062 | Pending |
| 30 | 5030 | 1132 | Pending |
| 31 | 5031 | 1089 | Pending |

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

PREVIEW DOWNLOADED AT 17:21

Query Settings

PROPERTIES

Name ticket_information

All Properties

APPLIED STEPS

Source

Navigation

Promoted Headers

Changed Type

Removed Columns

Removed Duplicates

Task 1: Data Preparation and Cleaning

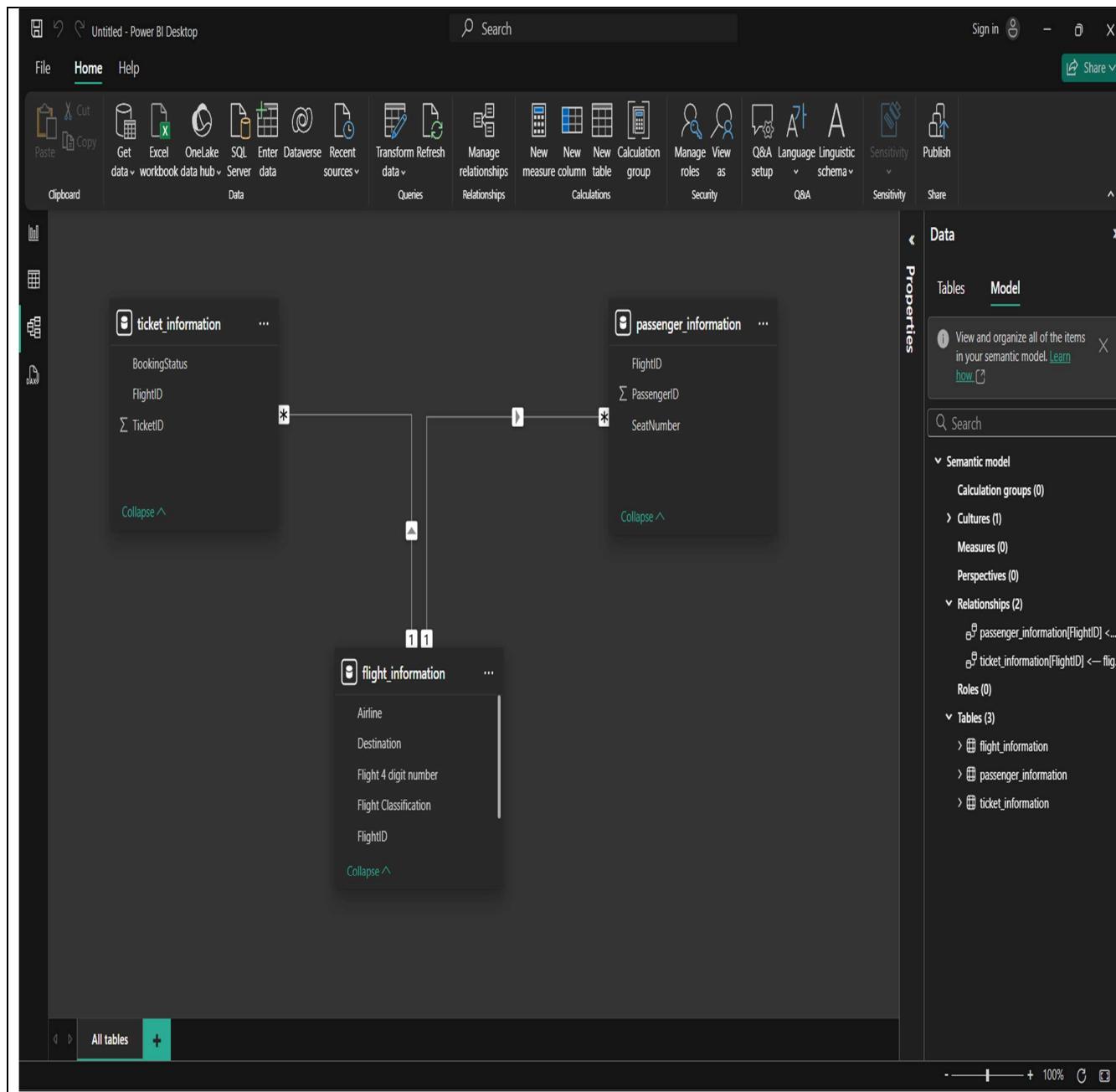
Extract and transform data in Power Query.

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

Steps Taken:

Ticket information dataset:

- *From the home tab in power query opted the remove rows option with duplicated as the dataset did not have any duplicates so none were removed.*
 - *From the drop down in column headers assigned the data types to each column.*
 - *The data set had a lot of extra columns so from the home tab in power query choose the remove column option to remove those columns.*



Task 2: Data Modelling

Create relationships between datasets
(*FlightID* as the key).

Understand cardinality and configure the model appropriately.

Steps Taken:

- On the power BI desktop switched to model view where all the tables are listed.
- From the **ticket_information** table selected the **flightID** column and dragged it over similar column of **flight_information** table to create a many-one relationship.
- From the **passenger_information** table selected the **flightID** column and dragged it over similar column of **flight_information** table to create a many-one relationship.
- Relationship **cannot** be formed in **ticket_information** to **passenger_information** as it would be many to many relationship.
- In the image we can see the **star-schema model** with **flight_infomation** table in the middle.

Final Project

Home Transform Add Column View Tools Help

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

Close New Query Data Sources Parameters Query Manage Columns Reduce Rows Sort Transform Combine

Queries [3]

flight_information

| | FlightID | FlightNumber | Airline | Destination | Status | Flight Classification | Flight 4 digit number |
|----|----------|--------------|-----------|-------------|-----------|-----------------------|-----------------------|
| 1 | 1001 | FL1102 | Airline D | Houston | On Time | Best | 1102 |
| 2 | 1002 | FL1435 | Airline B | Chicago | On Time | Best | 1435 |
| 3 | 1003 | FL1860 | Airline A | New York | Cancelled | To Be Improved | 1860 |
| 4 | 1004 | FL1270 | Airline C | Chicago | Delayed | To Be Improved | 1270 |
| 5 | 1005 | FL1106 | Airline C | New York | Delayed | To Be Improved | 1106 |
| 6 | 1006 | FL1071 | Airline A | Phoenix | On Time | Best | 1071 |
| 7 | 1007 | FL1700 | Airline C | Los Angeles | Cancelled | To Be Improved | 1700 |
| 8 | 1008 | FL1020 | Airline C | Los Angeles | Delayed | To Be Improved | 1020 |
| 9 | 1009 | FL1614 | Airline A | Los Angeles | Cancelled | To Be Improved | 1614 |
| 10 | 1010 | FL1121 | Airline D | Chicago | Cancelled | To Be Improved | 1121 |
| 11 | 1011 | FL1466 | Airline A | Phoenix | On Time | Best | 1466 |
| 12 | 1012 | FL1214 | Airline D | New York | Delayed | To Be Improved | 1214 |
| 13 | 1013 | FL1330 | Airline C | Houston | On Time | Best | 1330 |
| 14 | 1014 | FL1458 | Airline C | New York | Delayed | To Be Improved | 1458 |
| 15 | 1015 | FL1087 | Airline C | Houston | Delayed | To Be Improved | 1087 |
| 16 | 1016 | FL1372 | Airline B | New York | Delayed | To Be Improved | 1372 |
| 17 | 1017 | FL1099 | Airline D | Phoenix | Delayed | To Be Improved | 1099 |
| 18 | 1018 | FL1871 | Airline B | Houston | Delayed | To Be Improved | 1871 |
| 19 | 1019 | FL1663 | Airline B | Chicago | Cancelled | To Be Improved | 1663 |
| 20 | 1020 | FL1130 | Airline A | New York | On Time | Best | 1130 |
| 21 | 1021 | FL1661 | Airline B | New York | Cancelled | To Be Improved | 1661 |
| 22 | 1022 | FL1308 | Airline A | Houston | Delayed | To Be Improved | 1308 |
| 23 | 1023 | FL1769 | Airline A | Chicago | On Time | Best | 1769 |
| 24 | 1024 | FL1343 | Airline B | Chicago | Delayed | To Be Improved | 1343 |
| 25 | 1025 | FL1491 | Airline D | Phoenix | On Time | Best | 1491 |
| 26 | 1026 | FL1413 | Airline D | Chicago | Cancelled | To Be Improved | 1413 |
| 27 | 1027 | FL1805 | Airline D | Chicago | On Time | Best | 1805 |
| 28 | 1028 | FL1385 | Airline D | Chicago | On Time | Best | 1385 |
| 29 | 1029 | FL1191 | Airline D | Los Angeles | On Time | Best | 1191 |
| 30 | 1030 | FL1955 | Airline B | Phoenix | On Time | Best | 1955 |

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

PREVIEW DOWNLOADED AT 11:28

Task 3: Enhanced Data Insights

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

Steps Taken:

- On Power Query- Add column tab selected the **conditional column option**.
- In the dialog box set the conditions for "Best" when "On Time".
- And "To Be Improved" when "Cancelled" and "Delayed".
- And then renamed the column as "Flight Classification".
- As shown in the image a new column has been created with the set conditions as classifications.

Final Project

Home Transform Add Column View Tools Help

Close & Apply New Recent Enter Data Data source settings Manage Refresh Properties Advanced Editor Preview Manage Choose Columns Columns Keep Rows Remove Rows Split Group Data Type: Text Data Type: Text Merge Queries Text Analytics Close New Query Data Sources Parameters Query Manage Columns Reduce Rows Sort Combine Use First Row as Headers Append Queries Vision Combine Files Azure Machine Learning AI Insights

Queries [3]

flight_information

| | A ^b FlightNumber | A ^b Airline | A ^b Destination | A ^b Status | A ^b Flight Classification | A ^b Flight 4 digit number |
|----|-----------------------------|------------------------|----------------------------|-----------------------|--------------------------------------|--------------------------------------|
| 1 | 1001 FL1102 | Airline D | Houston | On Time | Best | 1102 |
| 2 | 1002 FL1435 | Airline B | Chicago | On Time | Best | 1435 |
| 3 | 1003 FL1860 | Airline A | New York | Cancelled | To Be Improved | 1860 |
| 4 | 1004 FL1270 | Airline C | Chicago | Delayed | To Be Improved | 1270 |
| 5 | 1005 FL1106 | Airline C | New York | Delayed | To Be Improved | 1106 |
| 6 | 1006 FL1071 | Airline A | Phoenix | On Time | Best | 1071 |
| 7 | 1007 FL1700 | Airline C | Los Angeles | Cancelled | To Be Improved | 1700 |
| 8 | 1008 FL1020 | Airline C | Los Angeles | Delayed | To Be Improved | 1020 |
| 9 | 1009 FL1614 | Airline A | Los Angeles | Cancelled | To Be Improved | 1614 |
| 10 | 1010 FL1121 | Airline D | Chicago | Cancelled | To Be Improved | 1121 |
| 11 | 1011 FL1466 | Airline A | Phoenix | On Time | Best | 1466 |
| 12 | 1012 FL1214 | Airline D | New York | Delayed | To Be Improved | 1214 |
| 13 | 1013 FL1330 | Airline C | Houston | On Time | Best | 1330 |
| 14 | 1014 FL1458 | Airline C | New York | Delayed | To Be Improved | 1458 |
| 15 | 1015 FL1087 | Airline C | Houston | Delayed | To Be Improved | 1087 |
| 16 | 1016 FL1372 | Airline B | New York | Delayed | To Be Improved | 1372 |
| 17 | 1017 FL1099 | Airline D | Phoenix | Delayed | To Be Improved | 1099 |
| 18 | 1018 FL1871 | Airline B | Houston | Delayed | To Be Improved | 1871 |
| 19 | 1019 FL1663 | Airline B | Chicago | Cancelled | To Be Improved | 1663 |
| 20 | 1020 FL1130 | Airline A | New York | On Time | Best | 1130 |
| 21 | 1021 FL1661 | Airline B | New York | Cancelled | To Be Improved | 1661 |
| 22 | 1022 FL1308 | Airline A | Houston | Delayed | To Be Improved | 1308 |
| 23 | 1023 FL1769 | Airline A | Chicago | On Time | Best | 1769 |
| 24 | 1024 FL1243 | Airline B | Chicago | Delayed | To Be Improved | 1243 |
| 25 | 1025 FL1491 | Airline D | Phoenix | On Time | Best | 1491 |
| 26 | 1026 FL1413 | Airline D | Chicago | Cancelled | To Be Improved | 1413 |
| 27 | 1027 FL1805 | Airline D | Chicago | On Time | Best | 1805 |
| 28 | 1028 FL1385 | Airline D | Chicago | On Time | Best | 1385 |
| 29 | 1029 FL1191 | Airline D | Los Angeles | On Time | Best | 1191 |
| 30 | 1030 FL1955 | Airline B | Phoenix | On Time | Best | 1955 |
| 31 | | | | | | |

7 COLUMNS, 200 ROWS Column profiling based on top 1000 rows PREVIEW DOWNLOADED AT 11:28

Task 3: Enhanced Data Insights

Use "Column from Examples" to extract the flight number from FlightNumber.

Steps Taken:

- On Power Query- Add column tab selected the **Column from example** option.
- With the new column created entered 2 rows with the **last 4 digits** from the **FlightNumber** column.
- This leads to the entire column being created on its own.
- Then renamed the column to "**Flight 4 digit number**".

Final Project • Last saved: Today at 10:33 am

File Home Insert Modeling View Optimize Help Format Data / Drill Table tools Measure tools

Name: FL1205_passenger
Home table: Measure
Format: Whole number
Data category: Uncategorized

Measure tools: New measure, Quick measure

Structure, Formatting, Properties, Calculations

```
1 FL1205_passenger = CALCULATE(DISTINCTCOUNT(passenger_information[PassengerID]),FILTER(flight_information,flight_information[FlightNumber]="FL1205"))
```

Visualizations pane: Build visual, Filters, Data, Columns, Drill through, Cross-report, Keep all filters, Add drill-through fields here.

Data pane: flight_information, Measure, passenger_information, ticket_information.

Table visual: FlightNumber FL1205_passenger (FL1205, 3)

Card visual: FL1205_passenger (3)

Page navigation: 4a, 4b, 4c, 5a, 5b, 5c, slicer, bookmark, drill, Drill through, Dashboard, +

Page 1 of 11

Task 4: Calculations Using DAX

Calculate: Total passengers for a specific flight.

Steps Taken:

- Created a new measure with the DAX formula: `FL1205_passenger = CALCULATE(DISTINCTCOUNT(passenger_information[PassengerID]),FILTER(flight_information,flight_information[FlightNumber]="FL1205"))`
- This measure counts the number of passengers in the flight **FL1205**.
- From the visualization pane created a new visual using single card and applied the created measure as the field.
- From the visualization pane created another table visual and added the column `FlightNumber` and the measure `FL1205_passenger`.
- In both the visuals we can see the number of passengers in the flight **FL1205**.

Final Project • Last saved: Today at 10:33 am

File Home Insert Modeling View Optimize Help Format Data / Drill Table tools Measure tools

Name: Total_tickets Format: Whole number Data category: Uncategorized

Home table: Measure \$ % 0

Structure, Formatting, Properties, Calculations

`1 Total_tickets = DISTINCTCOUNT(ticket_information[TicketID])`

Visualizations: Build visual, Filters, Search, Charts, Tables, Maps, etc.

Data pane:

- Flight information: Airline, Destination, Flight 4 digit nu..., Flight Classifica..., FlightID, FlightNumber, Status
- Measure: best_flights, Σ column, confirmed_total, FL1205_passen..., Total_tickets
- Fields: confirmed_total
- Drill through, Cross-report, Keep all filters, Add drill-through fields here

ticket_information: BookingStatus, FlightID, Σ PassengerID, SeatNumber, Σ TicketID

Dashboard navigation: 4b, 4a, 4c, 5a, 5b, 5c, slicer, bookmark, drill, Drill through, Dashboard, +

Page 2 of 11

Task 4: Calculations Using DAX

Calculate: Total tickets booked.

Steps Taken:

- In order to calculate the total number of tickets we need to create a new measure with the DAX formula:

$$\text{Total_tickets} = \text{DISTINCTCOUNT}(\text{ticket_information}[TicketID])$$
- From the visualization pane created a single card visual with the created measure as the field to view the result “50” as shown in the image.
- We can also get the number of tickets booked out of this with a DAX measure formula:
$$\text{confirmed_total} = \text{CALCULATE}(\text{DISTINCTCOUNT}(\text{ticket_information}[TicketID]), \text{FILTER}(\text{ticket_information}, \text{ticket_information}[\text{BookingStatus}] = \text{"Confirmed"}))$$
- Plotting this measure into single card we can see the result as “17”.

Final Project • Last saved: Today at 10:33 am

File Home Insert Modeling View Optimize Help Format Data / Drill Table tools Measure tools

Name: best_flights Format: Text Data category: Uncategorized

Home table: Measure \$ % Auto New Quick measure measure

Structure Formatting Properties Calculations

```
1 best_flights = CALCULATE(SELECTCOLUMNS(flight_information,flight_information[Flight Classification]), FILTER(flight_information,flight_information[Flight Classification]="Best"))
```

| FlightNumber | Airline | Classification |
|--------------|-----------|----------------|
| FL1004 | Airline C | Best |
| FL1014 | Airline D | Best |
| FL1020 | Airline C | Best |
| FL1027 | Airline D | Best |
| FL1032 | Airline B | Best |
| FL1040 | Airline C | Best |
| FL1047 | Airline B | Best |
| FL1071 | Airline A | Best |
| FL1091 | Airline B | Best |
| FL1095 | Airline B | Best |
| FL1102 | Airline D | Best |
| FL1128 | Airline C | Best |
| FL1130 | Airline A | Best |
| FL1134 | Airline A | Best |
| FL1166 | Airline B | Best |
| FL1189 | Airline A | Best |
| FL1191 | Airline D | Best |
| FL1200 | Airline A | Best |

Visualizations Data

Build visual

Filters

Search: flight_information

- FlightNumber
- Airline
- Destination
- Flight 4 digit nu...
- Flight Classifica...
- FlightID
- Status

Measure

- best_flights
- Σ Column
- confirmed_total
- FL1205_passen...
- Total_tickets

Columns

- FlightNumber
- Airline
- Classification

Drill through

Cross-report

Keep all filters

Add drill-through fields here

Dashboard +

Page 3 of 11

Task 4: Calculations Using DAX

Calculate: Filtered table showing "Best" flights only.

Steps Taken:

- To get list of flights with only "Best" classification we can use DAX formula:
best_flights =
CALCULATE(SELECTCOLUMNS(flight_information,flight_information[Flight Classification]),
FILTER(flight_information,flight_information[Flight Classification]= "Best"))
- Creating a table visual and adding the fields FlightNumber, Airline and the created measure we get the list of all the flights classified as "Best".

Final Project • Last saved: Today at 10:33 am

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File Home Insert Modeling View Optimize Help Format Data / Drill Share

Cut Copy Get Excel OneLake SQL Enter Dataverse Recent sources Transform Refresh data New visual New box More New visual calculation New measure Quick Sensitivity Publish Capilot Paste Format painter data workbook data hub Server data Queries Insert Calculations Sensitivity Share Copilot Clipboard

Data

Visualizations > Data

Build visual

Search

flight_information

- Airline
- Destination
- Flight 4 digit nu...
- Flight Classifica...
- FlightID
- FlightNumber
- Status

Measure

- best_flights
- \sum Column
- confirmed_total
- Total_tickets

X-axis

Airline

Y-axis

Count of PassengerID

Legend

Add data fields here

Small multiples

Add data fields here

Tooltips

Add data fields here

Drill through

Cross-report

Total Passengers Vs Airlines

| Airline | Count of PassengerID |
|-----------|----------------------|
| Airline A | 30 |
| Airline D | 28 |
| Airline C | 22 |
| Airline B | 20 |

4a 4b 4c 5a 5b 5c slicer bookmark drill Drill through Dashboard +

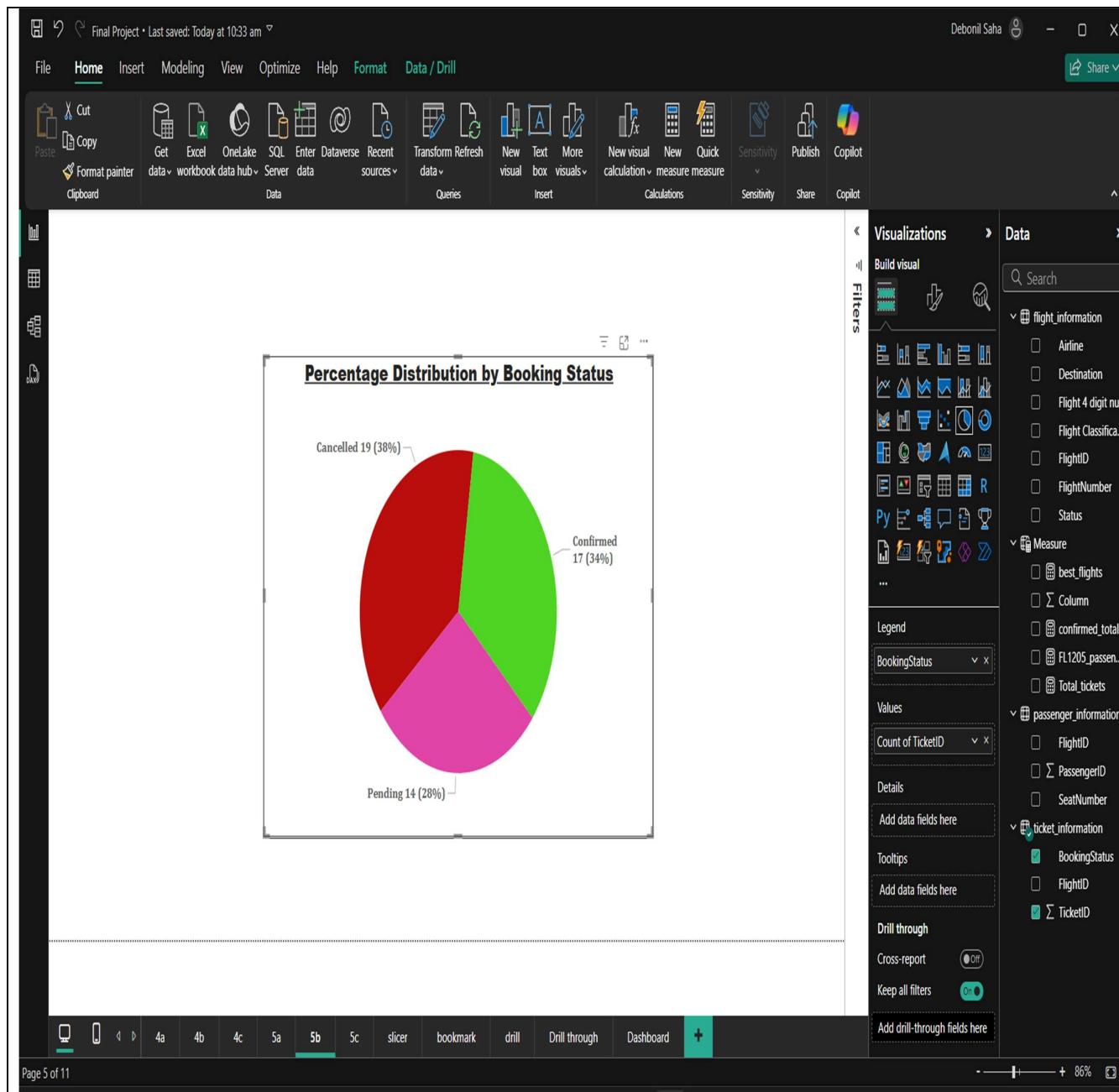
Page 4 of 11

Task 5: Visualization and Interactive Features

Create visuals for: Passenger count by airline.

Steps Taken:

- From the visualization pane inserted a new visual for **column chart**.
 - Added the fields **Airline in X-axis** and **count of PassengerID as Y-axis**.
 - Formatting the chart with **title, effects** and adding **data labels** we get the desired result.



Task 5: Visualization and Interactive Features

Create visuals for: Ticket booking statuses.

Steps Taken:

- From the visualization pane inserted the pie chart.
- Added the column **BookingStatus** as legend and Count of **TicketID** as Values.
- Formatting the chart with removing with different slice colors, adding a title we get the given pie chart.

Final Project • Last saved: Today at 10:33 am

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File Home Insert Modeling View Optimize Help Format Data / Drill

Cut Copy Paste Get Excel OneLake SQL Enter Dataverse Recent Transform Refresh New visual New Text box New calculation New measure Sensitivity Publish Copilot

Format painter Clipboard Data Sources Queries Insert Calculations Sensitivity Share Copilot

| Airline | Destination | Count of FlightID |
|--------------|-------------|-------------------|
| Airline D | Los Angeles | 16 |
| Airline D | Chicago | 15 |
| Airline A | Houston | 14 |
| Airline C | Houston | 14 |
| Airline D | Phoenix | 14 |
| Airline C | New York | 13 |
| Airline B | Phoenix | 11 |
| Airline C | Los Angeles | 10 |
| Airline B | New York | 10 |
| Airline A | Phoenix | 10 |
| Airline D | Houston | 9 |
| Airline B | Los Angeles | 9 |
| Airline A | New York | 9 |
| Airline A | Chicago | 8 |
| Airline D | New York | 8 |
| Airline A | Los Angeles | 7 |
| Airline C | Phoenix | 7 |
| Total | | 200 |

Visualizations

Airline X Destination X

Data

Build visual

Filters

Search

- flight_information
 - Airline
 - Destination
 - Flight 4 digit nu...
 - Flight Classifica...
 - FlightID
 - FlightNumber
 - Status
- Measure
 - best_flights
 - \sum Column
 - confirmed_total
 - FL1205_passen...
 - Total_tickets
- passenger_information
 - FlightID
 - \sum PassengerID
 - SeatNumber
- ticket_information
 - BookingStatus
 - FlightID
 - \sum TicketID

Analyze

Count of FlightID

Explain by

Airline

Destination

Tooltips

Add data fields here

Drill through

Cross-report

Keep all filters

Add drill-through fields here

Page 6 of 11

Task 5: Visualization and Interactive Features

Create visuals for: Flights by airline and destination.

Steps Taken:

- From the visualization pane inserted the **table visual** added the columns **Airline**, **Destination** and **count of FlightID**, using this visual we can see the number of flights from a particular airline and destination.
- Added another visual **decomposition tree** by analyzing the count of FlightID by **Airline** and **Destination**. Using this visual we can see the number of flights first integrating it on airline basis and then by destination.

Final Project • Last saved: Today at 10:33 am

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File Home Insert Modeling View Optimize Help Format Data / Drill Share

Cut Copy Get Excel OneLake SQL Enter Dataverse Recent sources Transform Refresh data New visual New measure Sensitivity Publish Copilot

Clipboard data workbook data hub Server data Sources Queries Insert Calculations Sensitivity Share Copilot

Clipboard

Home

Airline Destination Count of FlightID

| Airline | Destination | Count of FlightID |
|--------------|-------------|-------------------|
| Airline A | Houston | 14 |
| Airline B | Houston | 6 |
| Airline C | Houston | 14 |
| Airline D | Houston | 9 |
| Airline A | Los Angeles | 7 |
| Airline B | Los Angeles | 9 |
| Airline C | Los Angeles | 10 |
| Airline D | Los Angeles | 16 |
| Airline A | New York | 9 |
| Airline B | New York | 10 |
| Airline C | New York | 13 |
| Airline D | New York | 8 |
| Total | | 125 |

Number of Passengers by Airline

| Airline | Count of PassengerID |
|-----------|----------------------|
| Airline D | 15 |
| Airline C | 14 |
| Airline A | 13 |
| Airline B | 8 |

Airline

- Select all
- Airline A
- Airline B
- Airline C
- Airline D

Visual General ...

Flight information

- Airline
- Destination
- Flight 4 digit nu...
- Flight Classifica...
- FlightID
- FlightNumber
- Status

Values

Measure

- best_flights
- \sum Column
- \sum confirmed_total
- \sum FL1205_passen...
- \sum Total tickets

Destination

- Select all
- Chicago
- Houston
- Los Angeles
- New York
- Phoenix

Dashboard

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Task 5: Visualization and Interactive Features

Add interactive features for: Destination and Airline.

Steps Taken:

- From the visualization pane added the **slicer visual** with the **field as Airlines**.
 - Added another **slicer visual** with **field as Destinations**.
 - Using these 2 slicers we can filter the data into the shown visual as per our requirements.

Final Project • Last saved: Today at 10:33 am

File Home Insert Modeling View Optimize Help Format Data / Drill

Cut Copy Paste Get Excel OneLake SQL Enter Dataverse Recent Transform Refresh New visual New Text More New visual New Quick Sensitivity Publish Copilot

Clipboard Data Sources Queries Insert Calculations Sensitivity Share Copilot

Airline Destination Count of FlightID

| | | |
|--------------|-------------|------------|
| Airline B | Houston | 6 |
| Airline C | Houston | 14 |
| Airline D | Houston | 9 |
| Airline B | Los Angeles | 9 |
| Airline C | Los Angeles | 10 |
| Airline D | Los Angeles | 16 |
| Airline B | New York | 10 |
| Airline C | New York | 13 |
| Airline D | New York | 8 |
| Airline B | Phoenix | 11 |
| Airline C | Phoenix | 7 |
| Airline D | Phoenix | 14 |
| Total | | 127 |

Number of Passengers Vs Airline

| Airline | Count of Passengers |
|-----------|---------------------|
| Airline D | 21 |
| Airline B | 18 |
| Airline C | 16 |

Confirmed Booking Vs Airlines

| Airline | Confirmed Bookings (%) |
|-----------|------------------------|
| Airline D | 46.15% |
| Airline B | 30.77% |
| Airline A | 23.08% |
| Airline C | 0% |

Format button

Data

Search

- flight_information
 - Airline
 - Destination
 - Flight 4 digit nu...
 - Flight Classifica...
 - FlightID
 - FlightNumber
 - Status
- Shape
- Rotation
- Style
- Action **On**

Filters

Buttons

Actions

Measure

Passenger Information

Ticket Information

Page 8 of 11

Task 5: Visualization and Interactive Features

Add interactive features for: Quick views.

Steps Taken:

- From the **insert tab-button option** selected the **bookmark button** and added it to the current report.
- From the **view tab** added the **bookmarks pane**.
- Then selected my required filter condition using **slicers**.
- Then in the **bookmarks pane** added this scenario as a bookmark.
- Then by formatting the **bookmarks button** added the **action** as the bookmark created.
- So now every-time we click the **bookmarks button** we will be taken the same scenario that was added as bookmark.

The screenshot shows a Power BI report titled "Final Project". The main visual is a bar chart titled "Total Passengers Vs Airlines" with four bars representing Airline A (30), Airline D (28), Airline C (22), and Airline B (20). Below the chart is a table with the same data. A context menu is open over the first bar, with "Drill through" selected. The drill-through target is a new page titled "Airline" showing a table of passenger counts for four airlines.

| Airline | Count of PassengerID |
|-----------|----------------------|
| Airline A | 30 |
| Airline B | 20 |
| Airline C | 22 |
| Airline D | 28 |
| Total | 100 |

The screenshot shows a Power BI report titled "Final Project". The main visual is a table titled "Flight Information" showing flight details for Airline B. The table includes columns for Airline, PassengerID, FlightNumber, FlightID, Destination, Flight Classification, and Status. A filter pane on the right side is set to "is Airline B".

| Airline | PassengerID | FlightNumber | FlightID | Destination | Flight Classification | Status |
|-----------|-------------|--------------|----------|-------------|-----------------------|-----------|
| Airline B | 1 | FL1047 | 1161 | Phoenix | Best | On Time |
| Airline B | 2 | FL1839 | 1157 | Phoenix | Best | On Time |
| Airline B | 15 | FL1955 | 1030 | Phoenix | Best | On Time |
| Airline B | 18 | FL1337 | 1119 | Los Angeles | To Be Improved | Delayed |
| Airline B | 20 | FL1748 | 1118 | Phoenix | Best | On Time |
| Airline B | 29 | FL1484 | 1059 | New York | To Be Improved | Cancelled |
| Airline B | 32 | FL1047 | 1161 | Phoenix | Best | On Time |
| Airline B | 33 | FL1702 | 1098 | Phoenix | To Be Improved | Delayed |
| Airline B | 38 | FL1243 | 1055 | New York | Best | On Time |
| Airline B | 52 | FL1955 | 1078 | Los Angeles | To Be Improved | Cancelled |
| Airline B | 55 | FL1957 | 1051 | New York | To Be Improved | Delayed |
| Airline B | 60 | FL1251 | 1113 | Houston | Best | On Time |
| Airline B | 62 | FL1313 | 1034 | Phoenix | Best | On Time |
| Airline B | 66 | FL1560 | 1039 | Chicago | Best | On Time |
| Airline B | 70 | FL1748 | 1118 | Phoenix | Best | On Time |
| Airline B | 88 | FL1201 | 1103 | Los Angeles | To Be Improved | Cancelled |
| Airline B | 89 | FL1804 | 1166 | Los Angeles | Best | On Time |
| Airline B | 93 | FL1702 | 1098 | Phoenix | To Be Improved | Delayed |
| Airline B | 95 | FL1955 | 1030 | Phoenix | Best | On Time |
| Airline B | 99 | FL1553 | 1191 | Chicago | To Be Improved | Delayed |

Task 5: Visualization and Interactive Features

Add interactive features for: Airline-specific pages.

Steps Taken:

- Drill through feature is applied by assigning a drill page which contains the values you want to see while doing a deeper analysis.
- On the drill page in the visualization pane added the Airline as field in drill through option.
- Now when we select any other visual from any other page in the report and choose airline option as drill though we are directed to the drill page.
- As shown in the image we drill the airlines in the column chart where we get directed to drill page where information about the passenger and other flight details are available.

Final Project • Last saved: Today at 10:33 am

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Sensitivity Publish Copilot ...

AIRLINES ANALYSIS

200 Count of FlightID

100 Count of PassengerID

5 Count of Destination

79 Count of SeatNumber

17 confirmed_total

Airline Destin... Data Filters Visualizations

| Airline | Destination | Number of Flights |
|-----------|-------------|-------------------|
| Airline D | Los Angeles | 16 |
| Airline D | Chicago | 15 |
| Airline A | Houston | 14 |
| Airline C | Houston | 14 |
| Airline D | Phoenix | 14 |
| Airline C | New York | 13 |
| Airline B | Phoenix | 11 |
| Airline C | Los Angeles | 10 |
| Airline B | New York | 10 |
| Airline A | Phoenix | 10 |
| Airline D | Houston | 9 |
| Airline B | Los Angeles | 9 |
| Airline A | New York | 9 |
| Total | | 200 |

Distribution of Flight Classes

Distribution of passengers by Destination

Number of Passengers Vs Airline

Distribution by Booking Status

Share 4a 4b 4c 5a 5b 5c slicer bookmark drill Drill through Dashboard +

Page 11 of 11

Task 6: Final Dashboard and Power BI Service

Design a **comprehensive dashboard** with key visualizations and insights.

Key Insights:

- Total flights: 200
- Total passengers: 100
- Number of unique destinations: 5
- Tickets analysed: 50 in which only 17 are confirmed
- Airline D operates the highest number of flights to a single destination, specifically Los Angeles (16 flights).
- Other destinations, such as Chicago (15 flights) and Houston (14 flights), are also popular among different airlines.
- Phoenix is serviced by multiple airlines but has significant coverage from Airline C and Airline A.
- By Airline: Airline A has the highest passenger count (30), followed closely by Airline D (28), indicating their strong market share.
- By Destination: Phoenix leads with 30% of passengers, followed by Houston (21%) and Chicago (20%). Los Angeles and New York have smaller passenger shares (11% and 18%, respectively).

Final Project • Last saved: Today at 10:33 am

File Home Insert Modeling View Optimize Help

Sensitivity Publish Copilot ...

AIRLINES ANALYSIS

200 Count of FlightID

100 Count of PassengerID

5 Count of Destination

79 Count of SeatNumber

17 confirmed_total

Airline ▾ Select all □ Airline A □ Airline B □ Airline C □ Airline D

Destin... ▾ Select all □ Chicago □ Houston □ Los Ang... □ New York □ Phoenix

Distribution of Flight Classes

To Be Improved 118 (59%)

Best 82 (41%)

Distribution of passengers by Destination

Houston 21 (21%)

Phoenix 30 (30%)

Chicago 20 (20%)

Los Angeles 11 (11%)

New York 18 (18%)

Number of Passengers Vs Airline

| Airline | Count of PassengerID |
|-----------|----------------------|
| Airline A | 30 |
| Airline D | 28 |
| Airline C | 22 |
| Airline B | 20 |

Distribution by Booking Status

Confirmed 17 (34%)

Cancelled 19 (38%)

Pending 14 (28%)

Dashboard +

4a 4b 4c 5a 5b 5c slicer bookmark drill Drill through

Page 11 of 11 103%

Contd:

Key Insights:

- "To Be Improved" flights account for 59% (118 flights), while "Best" flights make up 41% (82 flights). This indicates a significant opportunity for quality improvement across services.
- Confirmed bookings constitute 34%, while 38% of flights are cancelled, and 28% remain pending. This indicates potential inefficiencies in booking or operational processes.

The screenshot shows the Power BI Desktop interface. A modal window titled 'Manage security roles' is open, allowing the creation of new security roles and defining row-level data restrictions. The 'Roles' section shows a new role named 'Airline A'. The 'Select tables' section lists 'flight_information', 'Measure', 'passenger_information', and 'ticket_information'. The 'Filter data' section contains a condition: 'Show data if All of these rules are true' with a single rule: 'Column: Airline, Condition: Equals, Value: Airline A'. Below this is a preview of a dashboard card showing a count of 200 flight IDs for Airline A.

Power BI Service Screenshot:

The screenshot shows the Power BI Service website under the 'Row-Level Security' section. It displays a list of members for the 'Airline A' role, which currently has one member: 'Debonil Saha'. There is a search bar at the top and a 'Save' button at the bottom.

Task 6: Final Dashboard and Power BI Service

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

Steps Taken:

- On the **modelling tab** selected the option **Manage roles**.
- Created a new role named “**Airline A**” with the **condition** from the **flight_information** table as **value equals “Airline A”**.
- Publish** the report again on the cloud service website of power BI.
- Now on the power BI service website- my workspace of **Airline Analysis**, selected the **security option** from file type **semantics model**.
- Assigned the newly created role to a email-id or user as shown in the image.

Flight_Information.xlsx Edit credentials Show in lineage view
Passenger_Information.xlsx Edit credentials Show in lineage view
Ticket_Information.xlsx Edit credentials Show in lineage view

Parameters

Refresh

Time zone

Time zone configuration is applied not only to determine the schedule refresh time but also to establish the current date and time for incremental refresh models during on-demand and API refreshes. [Learn more](#)

(UTC+05:30) Chennai, Kolkata, Mumbai

Configure a refresh schedule

Define a data refresh schedule to import data from the data source into the semantic model. [Learn more](#)

On

Refresh frequency

Daily

Time

5 00 PM

Add another time

Send refresh failure notifications to

Semantic model owner

These contacts:

Enter email addresses

Apply Discard

Task 6: Final Dashboard and Power BI Service

Set up a **schedule refresh at 5 PM daily**.

Steps Taken:

- After **publishing** the report on a workspace named “Airline Analysis-Internshala” and installing personal **Data Gateway**.
- In the **Power BI settings** selected the **semantics model** which had an option for **refresh**.
- In the refresh option entered the time **5PM daily** and saved the settings.
- So as shown in the image the entire workspace will refresh the linked dataset at 5PM IST.

Video Submission:

Link: <https://drive.google.com/file/d/1gMs6bVTKTKRqi-9G1frZLHSs3WmMweeD/view?usp=sharing>