

FLIGHT DELAYS AND CANCELLATIONS

OVERVIEW

As you work on your analysis of the flight data, you may need to perform certain calculations to gain insights. Below are the business questions along with specific calculation guides to help you.

Business Questions and Calculation Guidance

1. **What are the most common causes of flight delays and cancellations?**
 - **Guide:**
 - **Calculation:** Count the occurrences of each Delay Reason and Cancellation Reason.
 - **Steps:**
 1. Use the **COUNTROWS** or **COUNT** function to calculate the frequency of each reason.
 2. Create a bar or pie chart to visualize the most common reasons for delays and cancellations.
2. **Which airlines experience the highest number of delays and cancellations?**
 - **Guide:**
 - **Calculation:** Aggregate the count of delays and cancellations by Airline Name.
 - **Steps:**
 1. Group the data by Airline Name and count the number of delays and cancellations.
 2. Use a bar chart to compare the number of delays and cancellations across different airlines.
3. **How does flight duration vary across different airlines and routes?**
 - **Guide:**
 - **Calculation:** Calculate the average Flight Duration for each airline and route combination.
 - **Steps:**
 1. Use the **AVERAGE** function to compute the average flight duration.
 2. Group the data by Airline Name, Departure Airport, and Arrival Airport.
 3. Visualize the variations using line graphs or scatter plots to compare different airlines and routes.
4. **What is the average delay time across different airlines and routes?**
 - **Guide:**
 - **Calculation:** Compute the average Delay Time for each airline and route.
 - **Steps:**
 1. Use the **AVERAGE** function to determine the average delay time.
 2. Group by Airline Name, Departure Airport, and Arrival Airport.
 3. Present the data using a line chart to show how delay times vary.

5. **Are there particular times of the year when delays and cancellations are more frequent?**
- **Guide:**
 - **Calculation:** Count the number of delays and cancellations by Date of Flight and then aggregate by month or quarter.
 - **Steps:**
 1. Extract the month or quarter from the Date of Flight using a calculated column.
 2. Count the occurrences of delays and cancellations.
 3. Use a line chart or heat map to display trends over the months or quarters.
6. **Which airports experience the most delays and cancellations?**
- **Guide:**
 - **Calculation:** Count the delays and cancellations for each Departure Airport and Arrival Airport.
 - **Steps:**
 1. Group by Departure Airport and Arrival Airport.
 2. Count the occurrences of delays and cancellations.
 3. Visualize using bar charts or maps to identify the airports with the most disruptions.
7. **Is there a correlation between scheduled vs. actual departure/arrival times?**
- **Guide:**
 - **Calculation:** Calculate the difference between Scheduled Departure Time and Actual Departure Time, and similarly for arrival times.
 - **Steps:**
 1. Create calculated columns for the time differences (e.g., Actual Departure Time - Scheduled Departure Time).
 2. Use a scatter plot to visualize the correlation between scheduled and actual times.
 3. Look for patterns or significant discrepancies in the data.

Submission Instructions

1. **Create a video presentation:**
 - Duration: More than 2 minutes.
 - Content: Present your findings, insights, and the Power BI dashboard.
2. **Upload the video:**
 - Post the video on your LinkedIn account.
 - Include the GitHub link to the dataset.
3. **Deadline:**
 - 4th September 2024