Dashboard Report

Audience & Context

This dashboard was created with the general public in mind. Its goal is to highlight trends in airline delays, disruptions, and cancellations across major U.S. airports. Flight delays are a frequent concern for travelers, but this visualization shows that delays are relatively small compared to the overall number of flights departing and arriving daily. By exploring the dashboard, users can identify which airports are most prone to delays and plan their trips with a better understanding of potential disruptions.

KPIs Chosen

The key performance indicators (KPIs) I prioritized are:

- **Delays**
- **Diversions**
- **Cancellations**

These metrics were selected because they are the most relevant to travelers and offer clear insight into overall airline performance. Understanding these measures helps users anticipate possible travel challenges and compare airport reliability.

Dashboard Structure

The dashboard features several key visual elements:

- **Interactive Map:** Allows users to explore airports across the dataset and view the average number of delays at each location.
- **Line Chart:** Displays the most common causes of delays, helping users recognize external factors such as weather or airline operations.
- **Bar Chart:** Compares delay frequencies across airports, providing a view of performance differences.

To maintain focus, I placed the three main KPIs at the top of the dashboard so they remain visible at all times and immediately capture attention.

Data Cleaning & Preprocessing

I used a dataset from a previous project, so minimal preprocessing was required for this assignment. However, I did remove null values and unnecessary columns, such as an ID field that did not contribute to the analysis. Cleaning the dataset in this way ensured more accurate insights and improved the dashboard's clarity and performance.

Design Choices

The dashboard's color palette uses shades of blue to reflect the sky and air travel theme. I also added hover interactivity to allow users to explore specific data points without overwhelming the visuals. The layout was designed to keep charts centralized and balanced, making the dashboard easy to navigate and visually cohesive. I intentionally avoided overcrowding the page to maintain a clean and focused design that supports quick understanding.

Reflection

Overall, the dashboard successfully communicates key insights about airline delays in a way that's both informative and visually engaging. One of the biggest challenges was adapting to Power BI, as this was my first time using the tool. Learning how to manage limited dashboard space and organize visuals effectively required careful planning and experimentation. If I had more time, I would refine the layout further and expand the dashboard to include additional metrics and interactive filters for deeper exploration. Some valuable insights became lost, and I am looking forward to adapting and creating a better visualization for everyone

Code & Data Access

The dataset and Power BI dashboard file are available here:
https://github.com/NinerNay/Project-2-ITCS-4122/tree/main