



**BUSINESS
ANALYTICS
NANO-DEGREE**

PROJECT 4

FLIGHTS DELAYS

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INTRODUCTION

In this project I use Flight delays Data set, Flight delays and cancellations are a major inconvenience for travelers and a challenge for airlines. This project uses Tableau to explore patterns in flight disruptions, helping to uncover which airlines and airports are most affected and why.

Project Goal We aim to answer three key questions:

- Which airports and airlines face the most cancellations?
- What are the main reasons for flight cancellations?
- How often do weather-related delays occur across airlines?

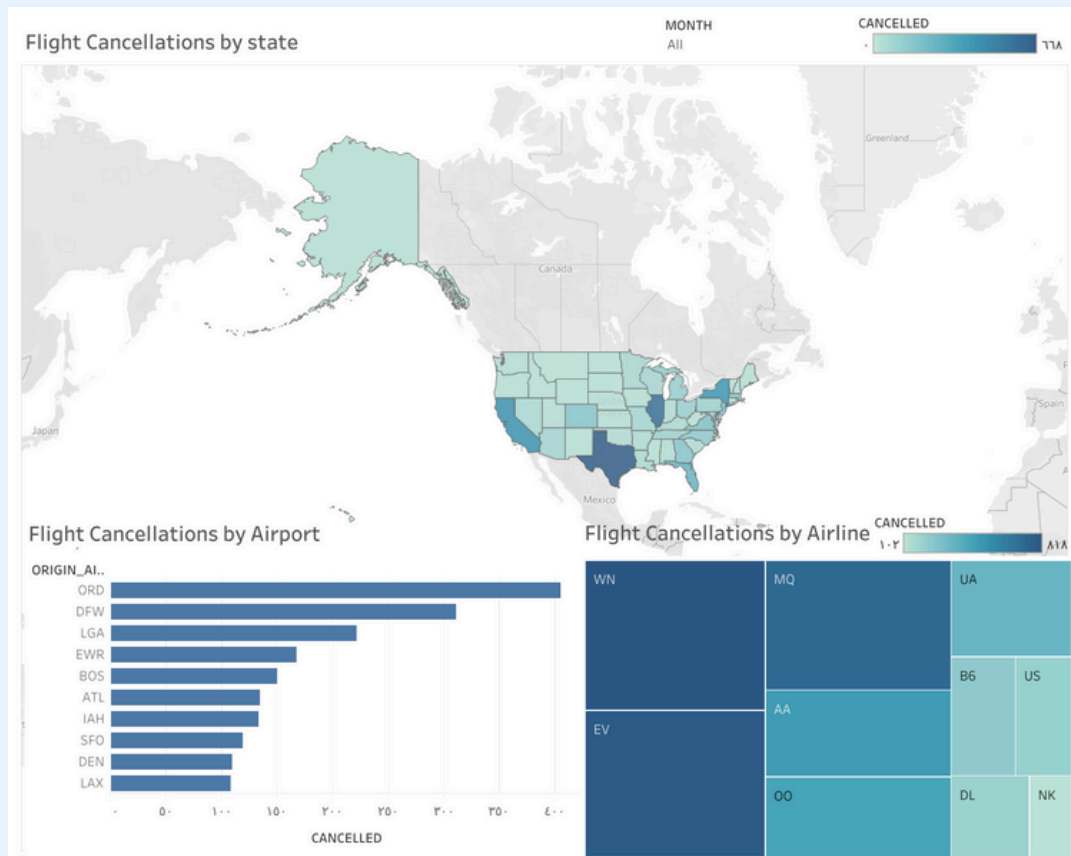
Approach Using Tableau, I've built interactive dashboards

Findings I come up with:

- Some airports and airlines experience significantly higher cancellations.
- Weather, airline issues, and air traffic system delays are major factors.
- Weather-related delays vary widely between airlines.

Why It Matters By understanding delay patterns, airlines and passengers can make more informed decisions. Our dashboards provide a clear, accessible view of flight disruptions, helping improve efficiency and traveler experience.

Which airports and airlines experience the most cancellations?



Summary

The map highlights flight cancellations per state, showing the most affected areas. The heatmap displays cancellations by airline, identifying carriers with the highest disruption rates. The bar chart ranks the Top 10 worst airports for cancellations, making it easy to compare their impact. A month filter applies to all visualizations, covering 11 months while excluding airlines AS, F9, HA, and VX. This analysis reveals that some states, airports, and airlines face significantly higher cancellations, likely due to weather, operational challenges, or airline-specific issues.

Design choice

In this chart, color encoding is used to represent the number of cancellations. The color palette was carefully selected to avoid causing distractions or issues for individuals with color blindness, ensuring accessibility. Size encoding is also utilized to reinforce the visualization, allowing viewers to quickly grasp the magnitude of cancellations at different airports. Additionally, filters on the month and airline allow for an interactive experience, letting users explore cancellation trends across different periods and carriers. By excluding certain airlines from the view, the focus remains on the airlines with the most impactful data

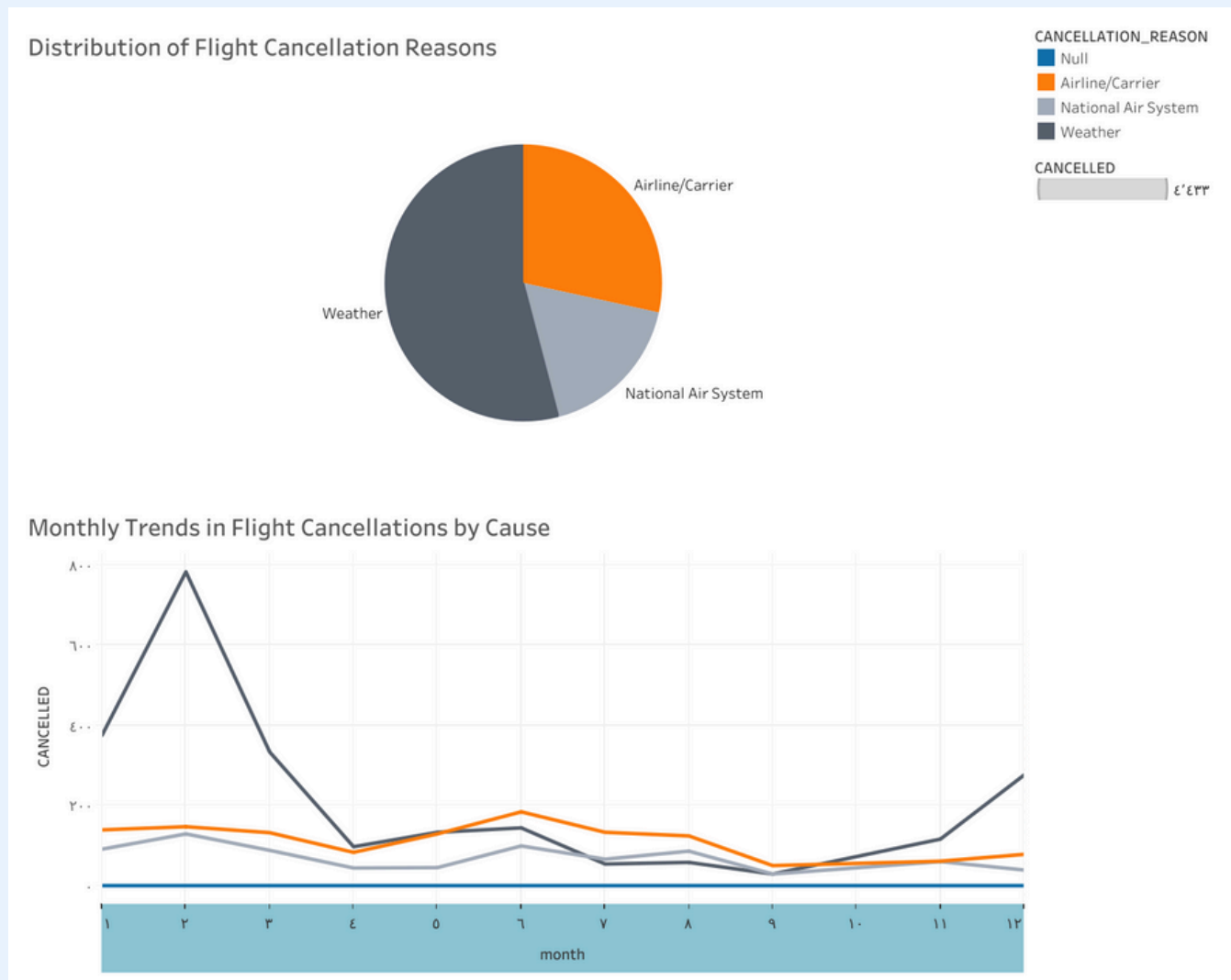
Resource

N/A

Link

https://public.tableau.com/views/Flight_delays_17402280787130/cancelationressondashboard?:language=en-US&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

What are the reasons for flight cancellations?



Summary

The pie chart visualizes the distribution of flight cancellations by reason, showing that weather is the most common cause, followed by airline/carrier issues and national air system delays. The line chart tracks cancellations over the months, highlighting peak disruptions in January and December, likely due to severe weather conditions.

Design choice

The dashboard uses distinct colors to differentiate cancellation reasons, ensuring clarity for all users. The pie chart highlights the proportion of each reason, while the line chart tracks trends over 12 months. A month filter allows dynamic analysis.

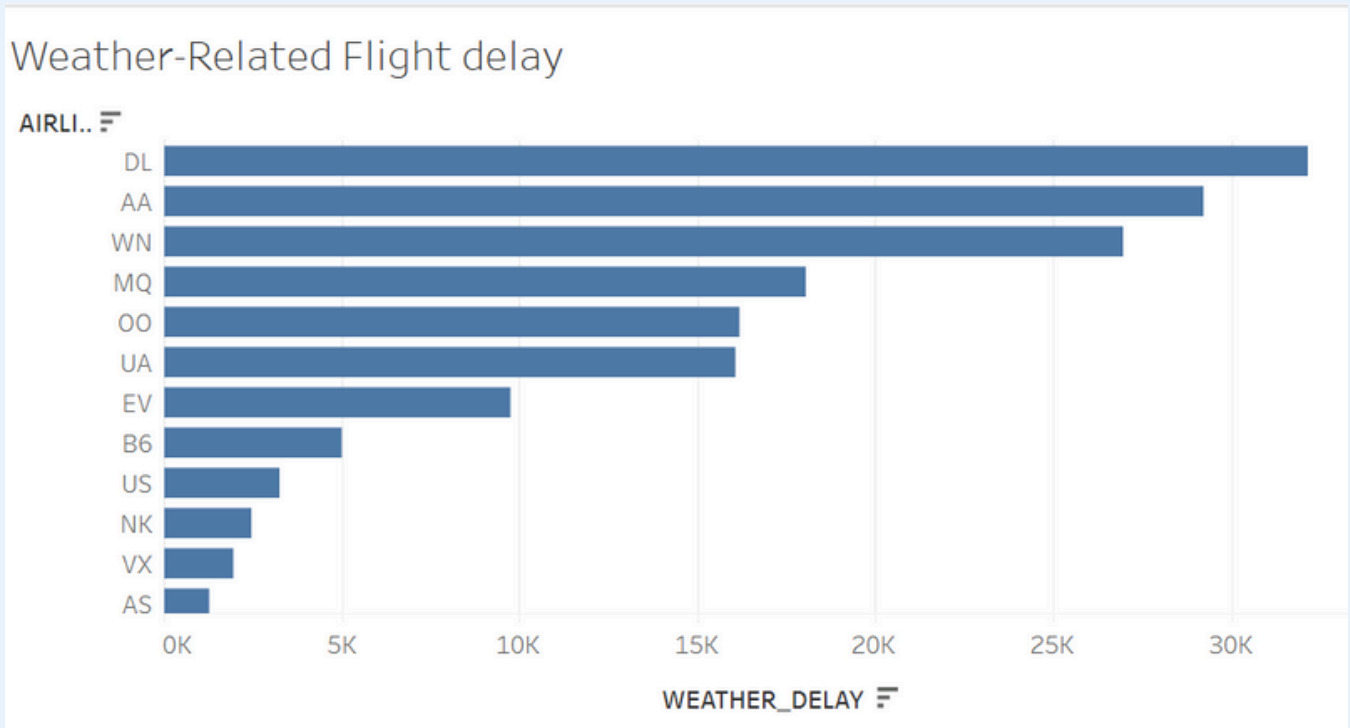
Resource

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Link

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How frequently do weather-related delays occur across different airlines?



Summary

This bar chart visualizes the total number of weather-related flight delays for each airline. The ranking provides a clear comparison of delays across different airlines.

Design choice

A horizontal bar chart was chosen to effectively rank airlines based on weather-related delays, making it easy to compare the impact.

Resource

N/A

Link

https://public.tableau.com/views/Flight_delays_17402280787130/Weather-RelatedFlightdelay?:language=en-US&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link