Q1. Which airlines or airports have the worst delays?
Dashboard:
link
Summary:
Spirit Air Lines had the worst delay for airlines. **Sawyer International Airport**, Marquette had the worst delay among the airports.
Design:
To effectively convey insights about airports and airlines, I employed horizontal bar charts as a visualization tool. I filtered the data to streamline the presentation to highlight only the top 5 airports and airlines. To enhance the visual impact, I utilized a carefully selected color scheme consisting of various shades of blue.
Resources:
https://help.tableau.com/current/pro/desktop/en-us/buildexamples_bar.htm
https://www.thedataschool.com.au/pris-lam/formatting-chart-lines-on-tableau-desktop/

Q2. What causes delays?
Dashboard:
link
Summary:
There are myriad reasons that can cause flight delays, ranging from inclement weather to technical issues to unexpected air traffic congestion. However, upon closer analysis, it becomes apparent that the delay caused by a **late aircraft** (in minutes), represents the most significant contributor to the overall delay experienced by passengers. On the other hand, **security-related delays**, while undoubtedly an essential factor in ensuring safe and secure air travel, are relatively minor in their contribution to the total delay time experienced by travelers.
Design:
To effectively present the average delay time for each different cause of delay, I opted to use a line bar chart as my visualization tool. This allowed for a clear and concise presentation of the data, enabling easy comparison and analysis. To improve analysis accuracy, I used airport filters in the chart, isolating delay data for specific airports. This provided nuanced insights into delay time and causes. Using a line bar chart with airport filters, I gave a comprehensive analysis of average delay times for each cause. This benefits airport management and travelers looking to plan trips more efficiently.
Resources:
https://www.tutorialspoint.com/tableau/tableau_bar_chart.htm
https://www.thedataschool.com.au/pris-lam/formatting-chart-lines-on-tableau-desktop/

Q3. How does departure delay vary within a month
Dashboard:
link
Summary:
According to the analysis of departure times in a given month, it was found that the average departure time experienced a significant increase on day 18, reaching a peak value of 13.675 minutes. Day **18** lies in the middle of the month, indicating a potential mid-month phenomenon where travelers may experience longer waiting times before departure.

Conversely, the lowest average departure time was observed on **day 25**, with a value of 7.332 minutes, suggesting that this day is relatively more favorable for travelers to depart without significant delay. Based on these findings, it could be postulated that most individuals may encounter a higher likelihood of departure delay during the early days of the month. Such insights into the trends and patterns of departure times could prove invaluable in identifying potential causes of delays, addressing areas of improvement, and enhancing overall travel experiences for passengers.

Design:

In order to effectively illustrate the correlation between the average departure delay and the days of the month, I utilized a line chart as my chosen visualization tool. This enabled me to clearly present the fluctuations and patterns in the data, highlighting any potential trends or outliers. I used airport filters to isolate and compare departure delay data for specific airports, improving the accuracy of my analysis. This helped me understand the relationship between departure delay and the day of the month in more detail. As a result, my analysis was more comprehensive and relevant to the real-world context of air travel. By using a line chart along with airport filters, I provided an insightful analysis of the trends and patterns in air travel data.

Resources:

https://playfairdata.com/3-ways-to-make-lovely-line-graphs-in-tableau/