Flights Data Visualizations using Tableau

Summary

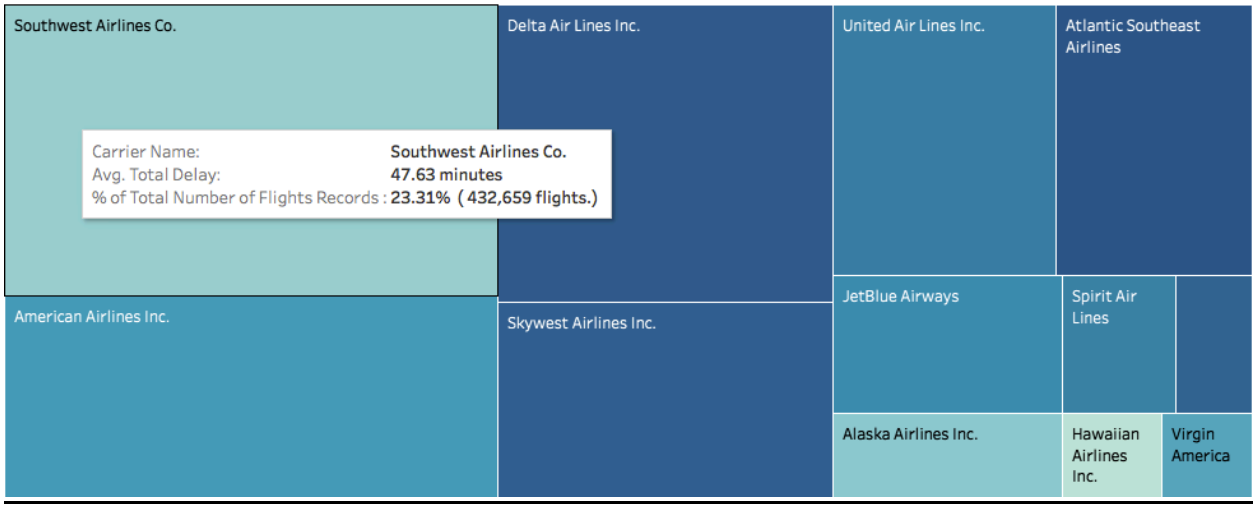
The dataset obtained from Kaggle for flights data in the month of January, August, November and December of 2016. https://www.kaggle.com/niranjan0272/us-flight-delay It has been collected from the RITA website. I have worked using Tableau Desktop to visualize and answer important and interesting questions about this dataset.

My first version of this story is:
https://public.tableau.com/profile/hazem.sayed#!/vizhome/Book22_224/Story1

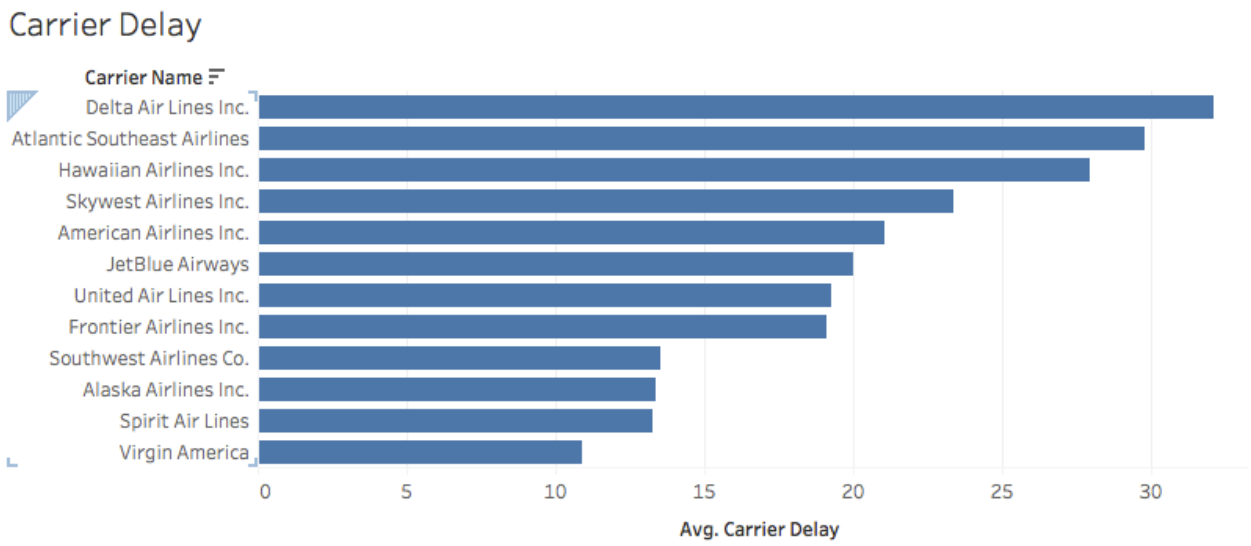
My Tableau final public link can be found here:
https://public.tableau.com/profile/hazem.sayed#!/vizhome/Flightsdata-ver1_1/FlightsDelayStory?publish=yes

Design

Overview

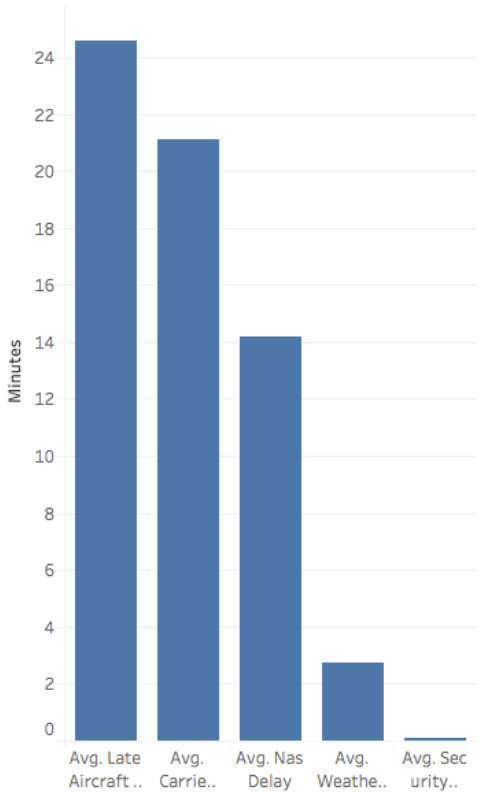


The first dashboard is for an overview of the dataset sorted on number of flights records for each airline. And also colored based on the average total delay for each airline.
Sothwest airline has 23% of total flights we have and 47 minutes as average delay.



In the above chart I have sorted airlines based on the average carrier delay. The top 3 carriers that caused a delay were Delta, Atlantic and Hawaiian Airlines.

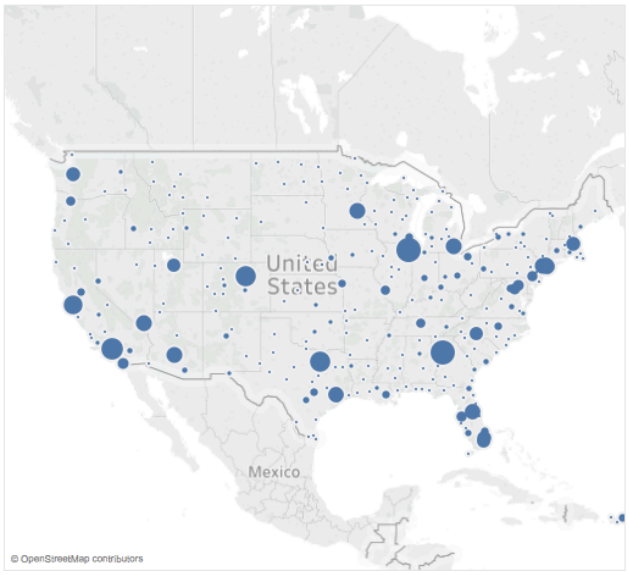
One of the most important questions to answer is the airport may be the main reason for a flight delay? And the answer was absolutely yes. Big airports are most likely have the biggest amount of flights which may be the reason for a flight delay. The most reason for flights delays is the aircraft delays coming from another airport. Below is a plot showing the average for different flight delay causes.



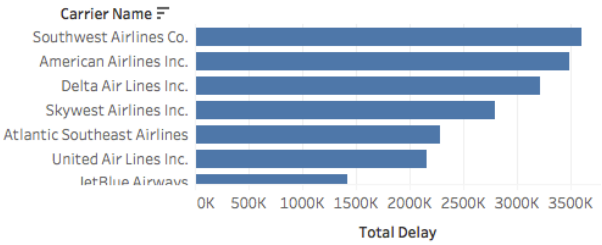
I have created a new calculated field of total delay to make the analysis more powerful calculating the total average for the different delay reasons.

Another important relation I have worked to clarify is the one between different carriers and the total delay in minutes. Plotting the data showed that the total delayed time depends on different reason, may be the origin, destination or the carrier it self.

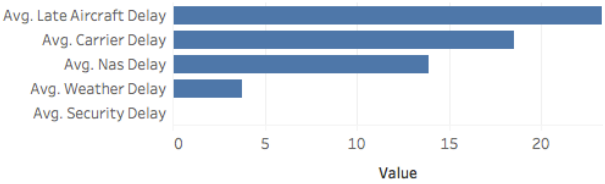
Airline & Airport



Total Delay & Airport

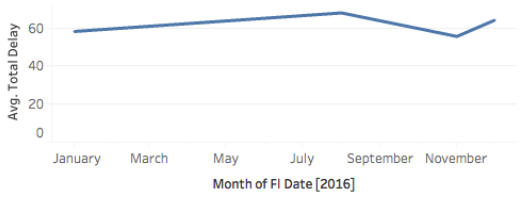


Delay Causes & Airport

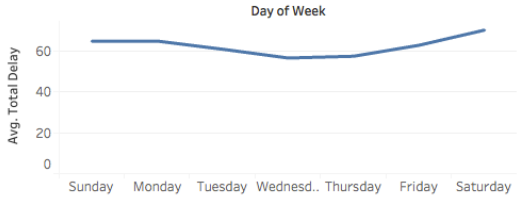


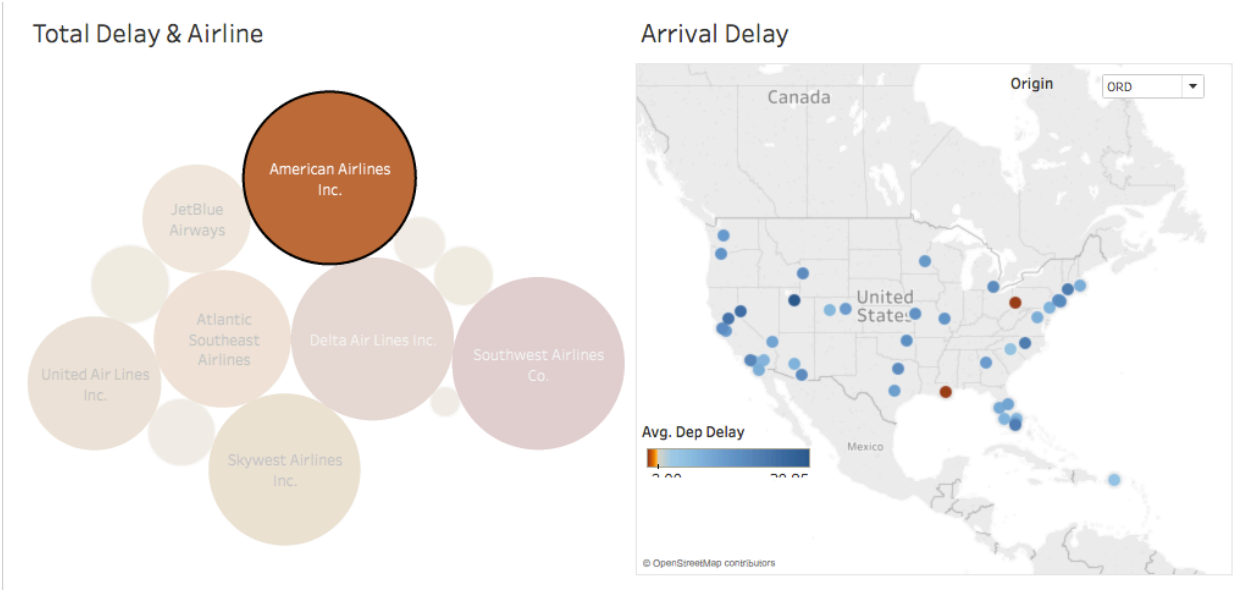
The line charts at the right showing the peak for the flights Delay and August recorded the highest flight delays in 2016. Saturday was the peak delay for the flight delays.

Total Delay & Month



Total Delay & Days of Week





Above is another important chart showing that when all airports taken into consideration, Southwest, American, Delta airlines, are the top 3 carriers that cause the delay. However when we filter by the Airline (American airlines for example) we found that there are significant airport that cause the delay (JAC and EGE) in this case.

Feedback Received

- Typos and grammar mistakes in story captions.
- The home caption should be clarifying a question that will be answered. I still cannot figure out the point for your story.
- I didn't see different colors in your dashboards. A set of colors may give your story a good plus.
- In dashboard of arrival delay there too many data .. all airports are shown in the map which make the question hard to be answered. Caption #3 has the same issue.
- Can you add the image if carriers and airlines instead of text?

Resources

Tableau manuals and videos.
Kaggle.com