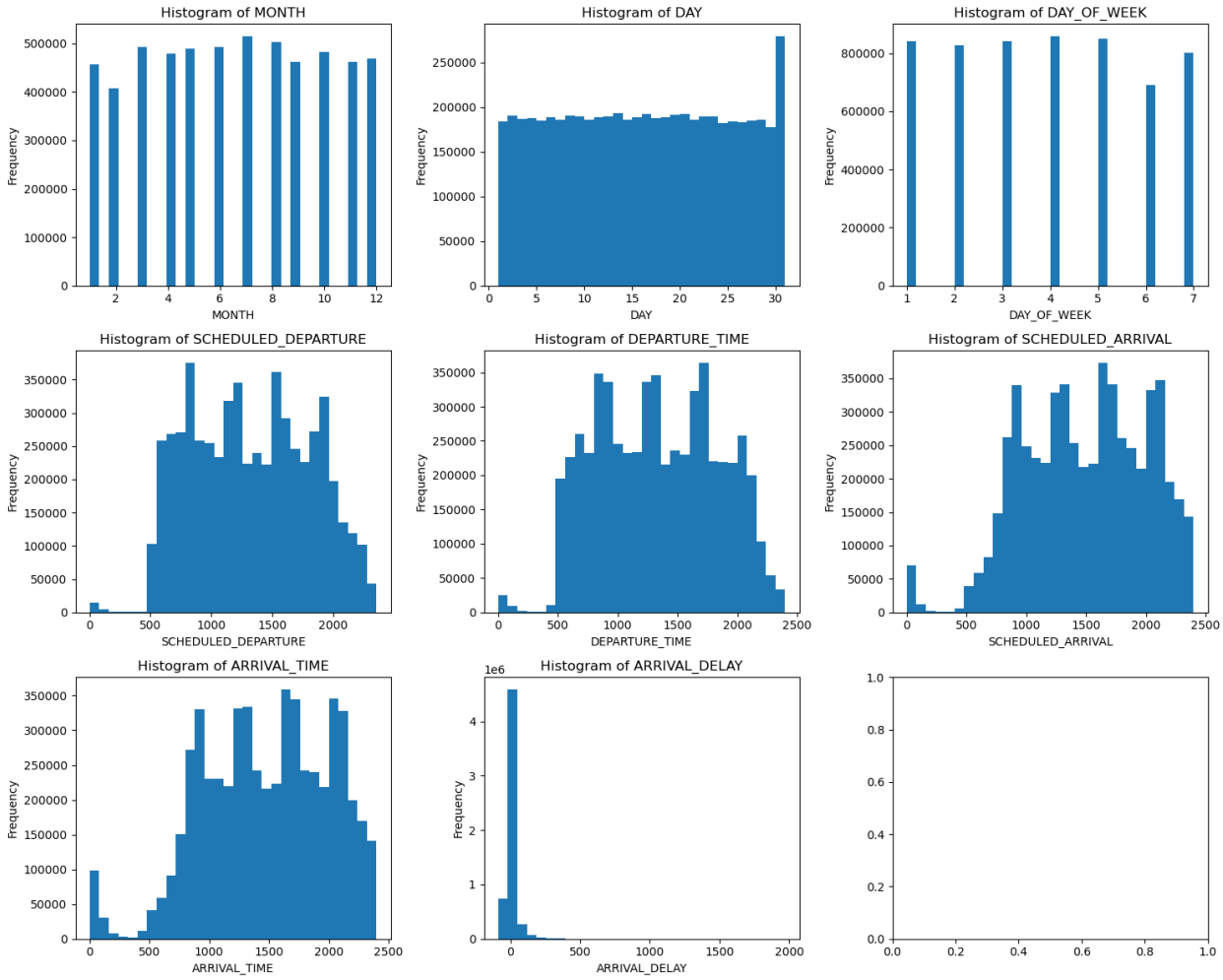
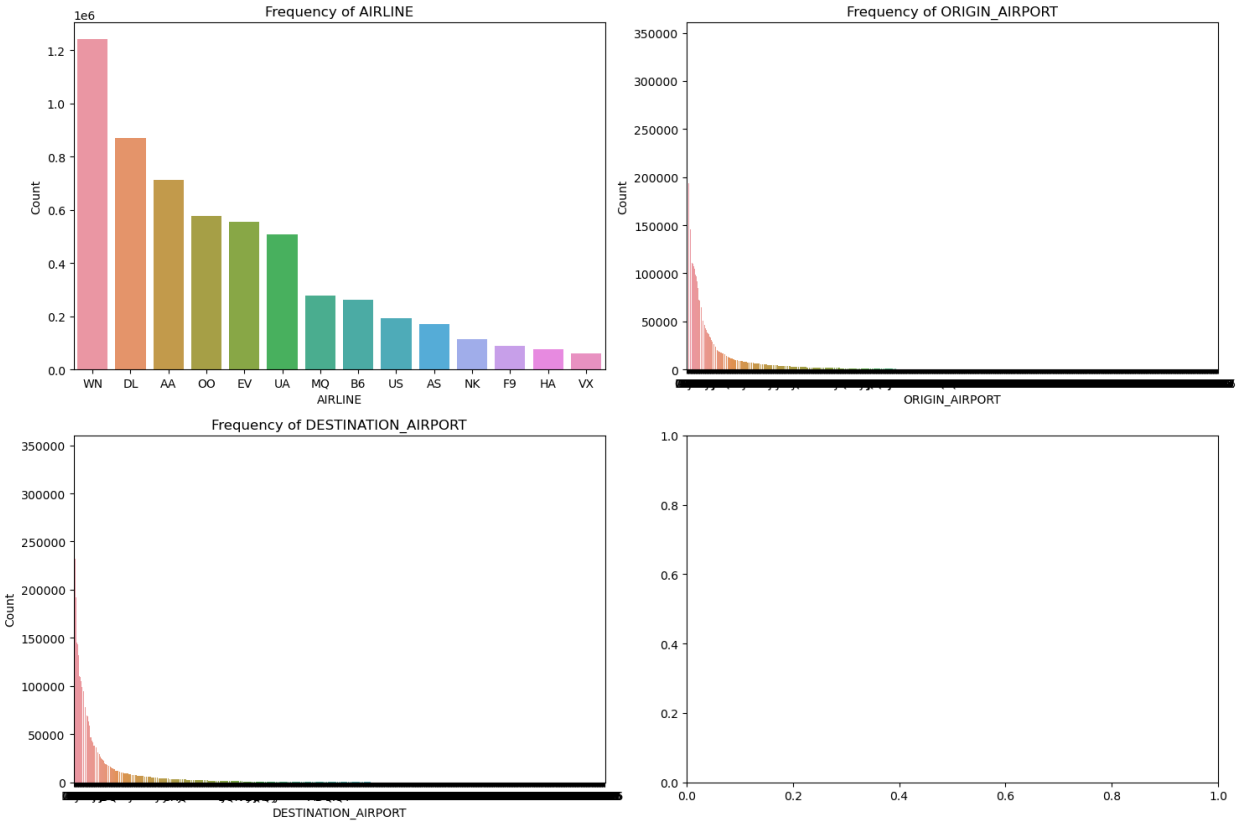
ASSIGNMENT-3

Flights Delay Dataset:

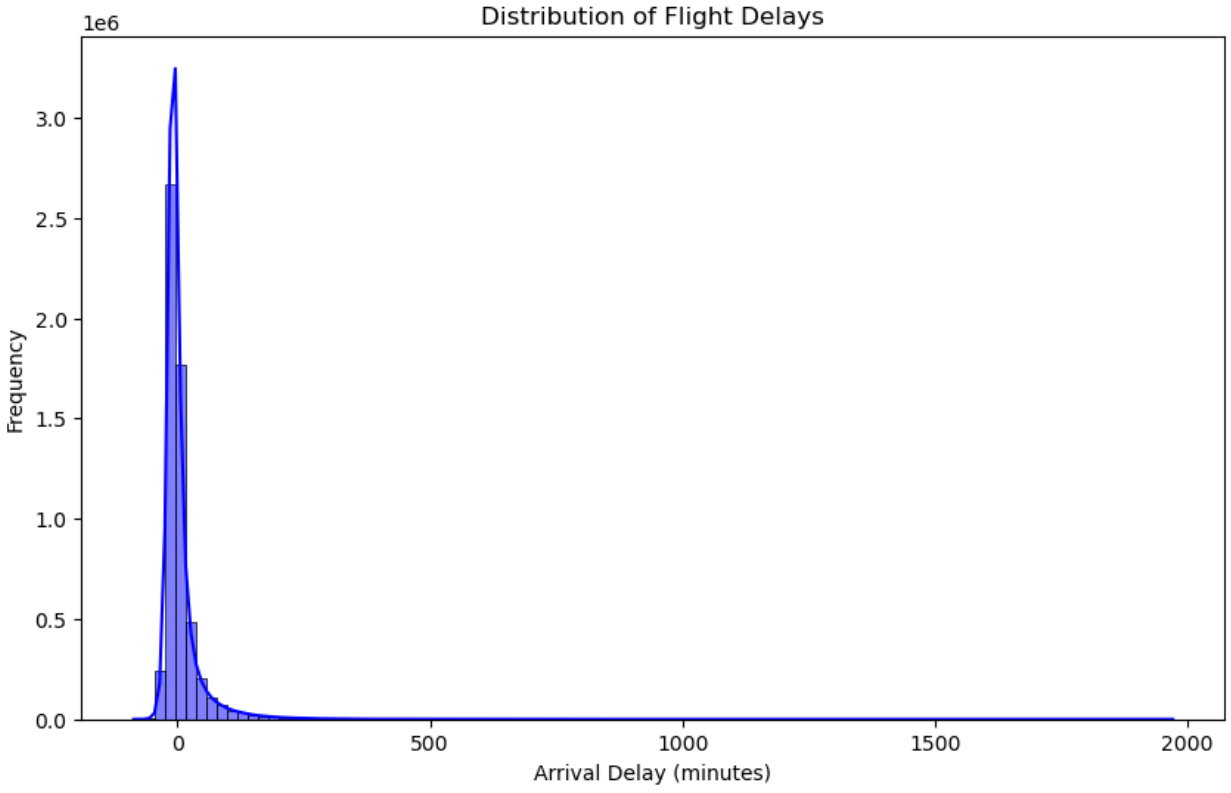


From the Comparison of the Above Histograms.

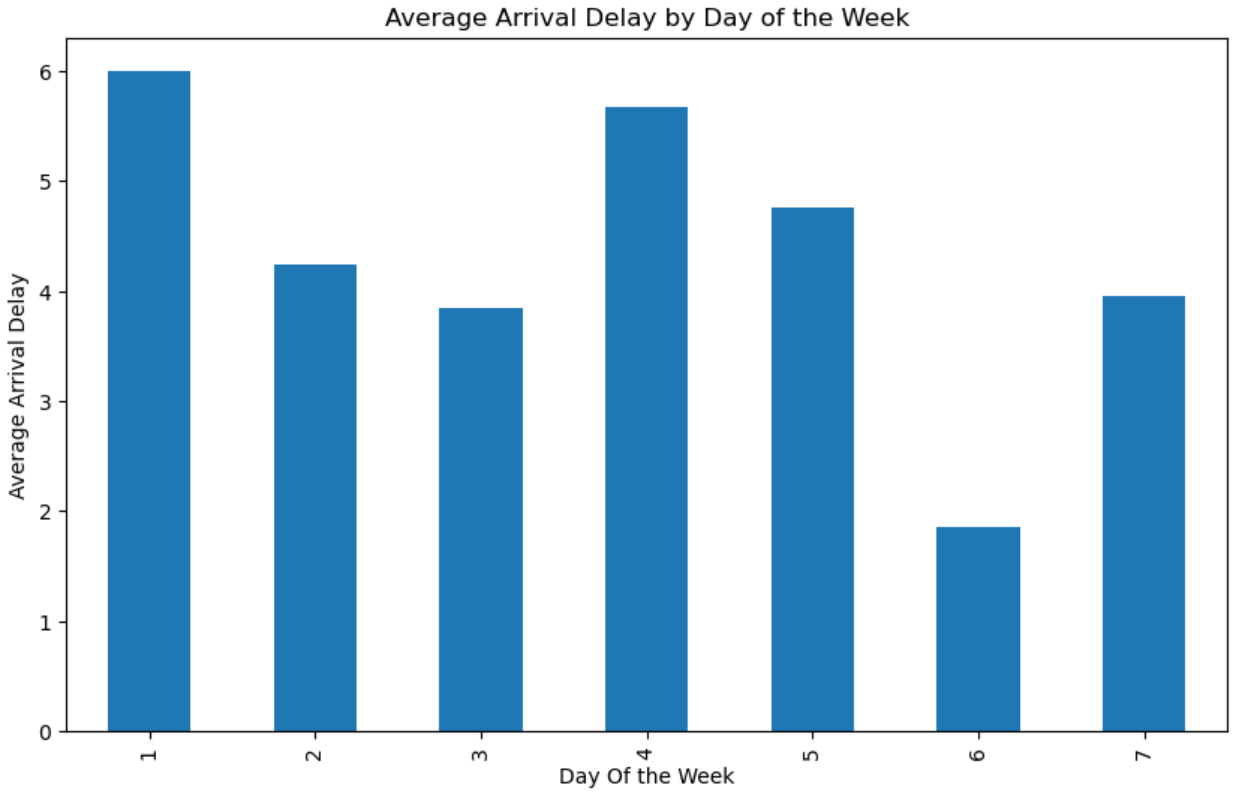
We can observe the high frequency of flights in the months of March, July, and August. According to observations, there are more flights in the middle of the month than there are at the beginning and end of the year. Every day of the week has almost the same number of flights, however on days longer than thirty, there are more flights. We are busier during the weekdays than the weekends.



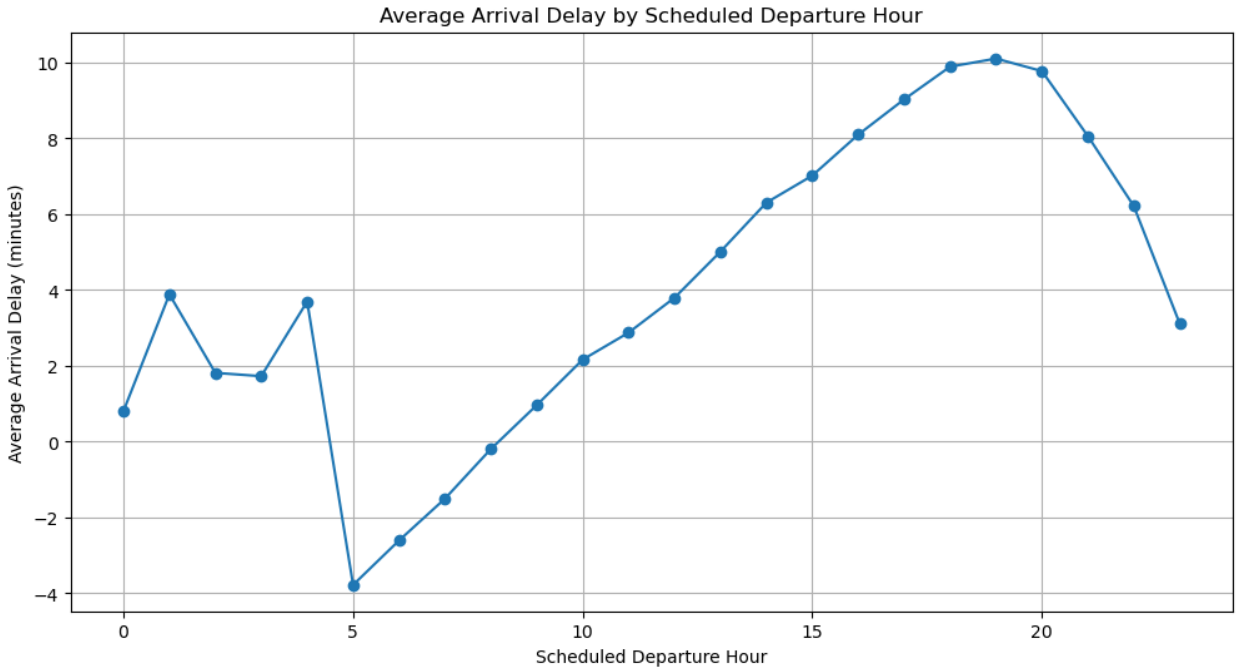
More Number of Flights are operated from the WN Airlines. Least Operated by VX Airlines.



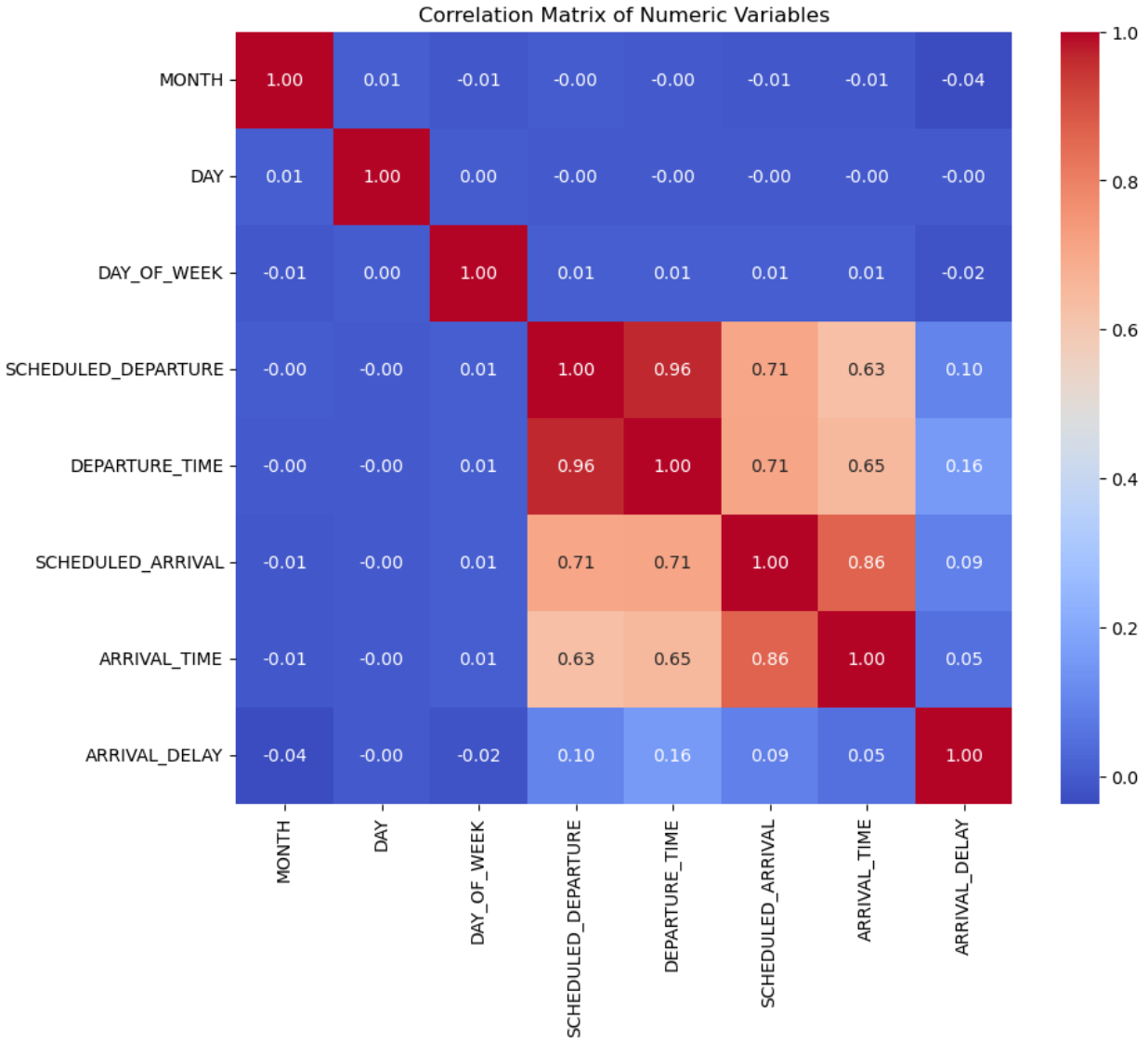
Arrival delays between 0 and 500 minutes are the most frequent, occurring more frequently than 0.6. Less than 0.1 percent of planes have arrival delays longer than 1500 minutes. One and a half hours, or roughly 700 minutes, is the average arrival delay. Compared to the average departure delay, which is usually around 30 minutes, this is far higher. We Can get the Statistical Analysis from the graph.



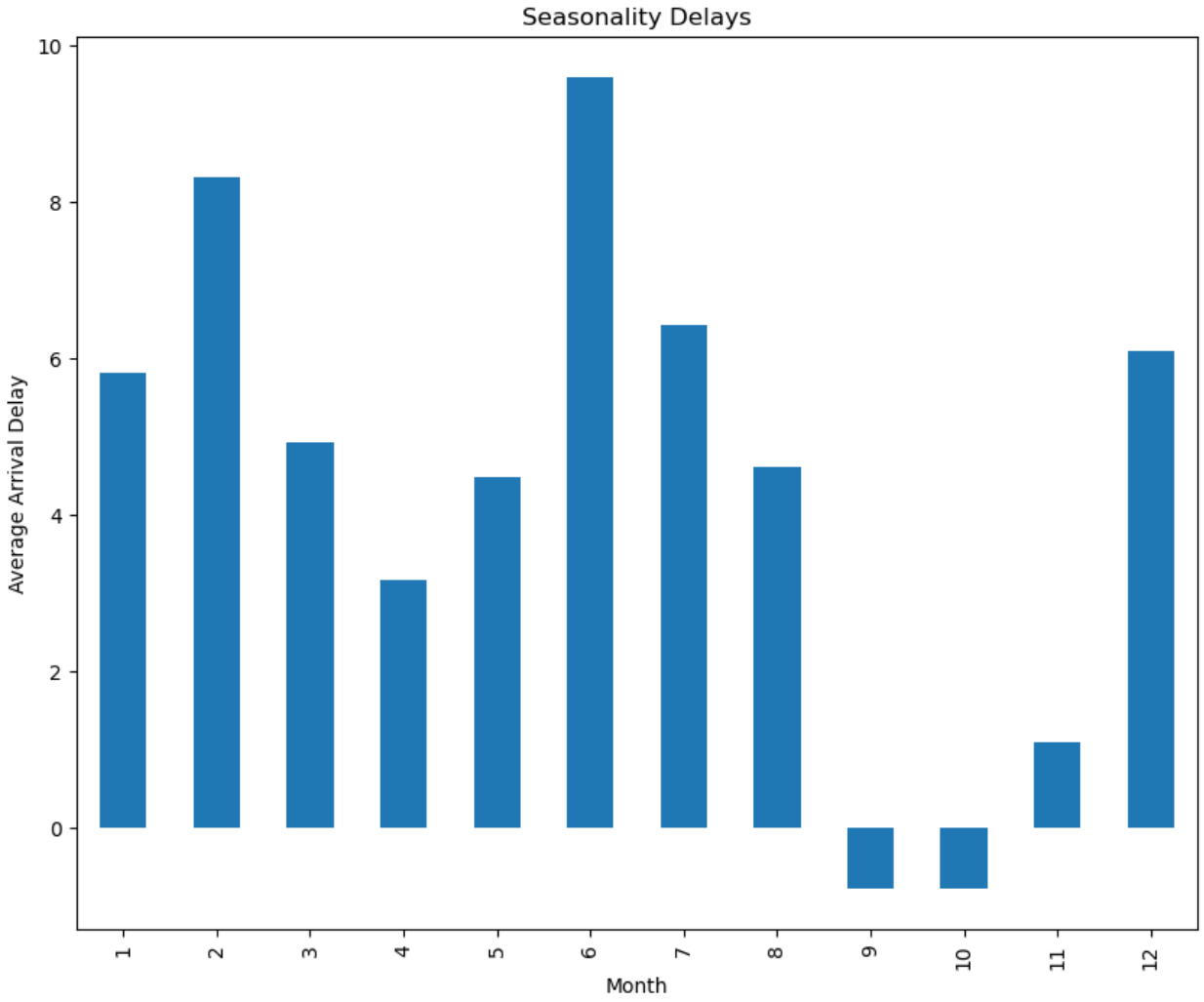
During the Start and Middle of the Days of the week we can see the Number of Flight Delays. At the End of the week, we can notice that they are fewer number of flight delays.



Scheduled departure hour with the shortest average arrival delay: 12pm (15 minutes). Scheduled departure hour with the longest average arrival delay: 10am (45 minutes). Difference in average arrival delay between 12pm and 10am: 30 minutes. Passengers who fly during the evening and early morning hours should be prepared for the possibility of delays. Airlines can take a number of steps to reduce delays, including Improving On time performance, Scheduling flights more realistically.



- Strongest positive correlations:
  - Average arrival delay and departure time (0.96)
  - Scheduled departure hour and scheduled arrival hour (0.71)
  - Scheduled arrival hour and arrival time (0.86)
  - Arrival time and departure time (0.63)
- Strongest negative correlations:
  - Average arrival delay and day of week (-0.6)
  - Average arrival delay and month (-0.4)



Flight arrival delays mostly happened in the months of February and July. Flights were least delayed in the months of September and October.

#Provide recommendations for airlines to reduce delays.

Airlines can take several steps to reduce the percentage of flights with long arrival delays, including Improving on-time performance: Airlines can track their on-time performance and identify areas where they can improve. Investing in new technology: Airlines can invest in new technology, such as better weather forecasting and air traffic control systems, to help them avoid delays. Scheduling flights more realistically: Airlines can schedule flights more realistically to consider factors such as air traffic congestion and weather conditions. Staffing flights appropriately: Airlines can make sure that they have enough staff on duty to handle unexpected delays.

CONCLUSION:

#Advise passengers on the best times to fly or airlines to pick to avoid delays based on your findings

Passengers can use this information to select airlines with a better track record for on-time arrivals. There may be variations in delays based on the day of the week. Passengers can consider this information when planning their travel. The dataset provides insights into how delays vary with scheduled departure times. Passengers might choose departure times that are less likely to experience delays. Passengers can analyze the dataset for seasonal patterns in delays. If delays tend to be more common in certain months or seasons, travelers may want to plan accordingly. If passengers have flexibility in choosing departure and arrival airports, they can consider routes with better historical performance in terms of delays. Passengers should stay informed about their flight's status, as conditions can change. Airlines often provide real-time updates on delays and scheduling changes.