In this analysis I have four questions I would like to find the answers to.

The questions are as follows:

1. Which airports have the most traffic, and what airlines have the most flights at those airports?
2. What are the top causes of flight delays?
3. Which airlines have the most delays?
4. Do the airports with the most flights also have the most delays?

Analysis

1. The airports with the most traffic are Atlanta, Chicago, Dallas, Denver and Los Angeles.

Link: https://public.tableau.com/app/profile/karissa.herns/viz/Airport-AirlineDashboard/Airport-AirlineInsights

On this dashboard I used a highlight table to display the airports with the most flights and sorted them from most to least. I filtered the table to show only the top ten for this to keep things simple. I used a treemap to display the airlines with the most delays at each airport. To choose the airport, I selected to use the highlight table as a filter, so when clicking on the airport listed here, the airlines displayed in the treemap will change accordingly.

I used gradient coloring for the heatmap and highlight table to indicate the higher totals with darker colors.

The insights from this visualization are the airlines with the most flights at the busiest five busiest airports and five corresponding busiest airlines are listed in the following table:

Atlanta	Chicago	Dallas/Fort Worth	Denver	Los Angeles
Delta	American Eagle	American	Southwest	Southwest
Atlantic Southeast	United	American Eagle	United	SkyWest
Southwest	American	Atlantic Southeast	SkyWest	American
American	Atlantic Southeast	Spirit	Frontier	United
Frontier	SkyWest	Delta	American	Delta

2. Most flight delays are caused by departure delays.
   Link: https://public.tableau.com/app/profile/karissa.herns/viz/TotalFlightDelaysbyType/DelayTypeTotals

   For each delay type, I created a new measure called “delay type indicator”. For instance, with departure delays, I created a new field called departure delay indicator. If the departure delay was equal to or greater than zero, the value is 1, else, the value is 0. I did this to indicate whether there is a delay since the measure of delays is originally in minutes.

   A bar chart was used to display totals for each type of delay. The departure delays were responsible for 2,125,618 delays, this is more than all other delay types combined. If this were calculated in minutes, the number would be over 53 million. A horizontal bar chart demonstrated this visually very well and the color gray was used as it is a neutral color.

The insight I have gained from this visualization is that there are a great deal more departure delays than other types of delays. Airline delays, Air system delays and late aircraft delays are responsible for between 550,000 – 575,000 delays each. Weather and security delays are responsible for the fewest delays.

3. The airlines with the most delays are Southwest, Delta, American, United and SkyWest.
   Link: https://public.tableau.com/app/profile/karissa.herns/viz/AnalysisofDelayedFlightsbyAirline/Sheet9

   For each delay type, I created a new measure called “delay type indicator”. For instance, with departure delays, I created a new field called departure delay indicator. If the departure delay was equal to or greater than zero, the value is 1, else, the value is 0. I did this to indicate whether there is a delay since the measure of delays is in minutes.

   I used a bubble chart to illustrate the total delays by airport. This visualization is used to compare the airlines and the size of each bubble is used to visually represent more delays. A grayscale pallet was used for accessibility.

   The insight gained from this visualization is that Southwest airlines experiences more delays with 646,569. This is represented by a larger bubble than the rest followed by Delta, American United and SkyWest. It is evident by looking at this visualization which airlines have the most delays overall.

References:

https://community.tableau.com/

https://help.tableau.com/