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Project 4: Build Data Dashboards

These series of dashboards are designed to demonstrate aircraft delays across airlines and airports and the causes for these delays. The data set refers to US aircraft in 2015. Additionally, further analysis is offered in respect of flight cancellations by airline and their reasons. Each are addressed in turn below.

Airline and Airport Delays

Flight Delays | Tableau Public

This dashboard comprises three elements demonstrating:

1) The amount of time delays across Airlines,
2) Time delays per Airport,
3) Delays by time of year.

These are discussed in turn:

The *first* visual is a scatterplot showing the average time airlines are affected by arrival and departure delays. The airline with the most delays is Spirit Airlines.

Spirit Airlines has on average the longest arrival delays and the longest departure delays.

Hawaiian Airlines Inc has on average the least departure delays.

Alaska Airlines Inc has the least arrival delays and on average runs ahead of schedule.

I used a scatter plot to display the relationship between the two variables of Arrival and Departure delays as this seemed to be the easiest to understand and visualise.

The *second* visual shows which airports are most affected by arrival delays. Chicago O'Hare International Airport has the most arrival delays of all the airports. Nearly 600 hours more than the second placed airport (Dallas/Fort Worth International Airport).

The *third* visual shows the three main types of delay by month of the year. The line graph shows us that although the delays are relatively consistent, June is the month which is most affected by delays within this data set, closely followed by July and December respectively.

What Causes Delays?

What Causes Delays? | Tableau Public

This dashboard comprises three elements demonstrating:

1) What causes delays?
2) The number of late aircraft delays,
3) Late aircraft delays by airline.

This dashboard shows the main causes of flight delays in the USA. The first chart shows the five main causes of delays. The most common cause of delays in 2015 set out in the *first* visual is the Late Aircraft Delay.

The *second* visual shows that June (161,446) is the month with the highest number of Late Aircraft delays of the year in 2015 with September presenting the lowest number (60,124).

The *third* visual shows that Southwest Airlines is responsible for the most delays of its aircraft.

I chose the treemap as it is a great way to show hierarchical data and used orange to draw attention.

Flight Cancellations

Flight Cancellations | Tableau Public

This dashboard comprises three elements demonstrating:

1) Flight cancellations by state,
2) Reasons for cancellations,
3) Which days have the most cancellations?

This dashboard shows which state the majority of cancellations occur (*first visual)* and what causes the most cancellations (*second visual)*. The *third* visual is a line graph showing which day of the week has the most flight cancellations.

The heat map of the *first visual* shows that Texas (668) has the highest number of cancelled flights. On average the state which has the highest number of cancelled flights is Vermont (4%). I chose the map of the USA to represent the states as this seemed to be the most visually effective.

The bubble chart *(second visual)* shows that the three most common causes of flight cancellations are the Weather, Airline/Carrier and The National Air System. The weather is cited as the most common cause of flight cancellations.

The *third* visual shows that Monday is the day of the week which has the most flight cancellations. I chose a line graph for this visual as it's a great way of showing changes over time. The day with the highest cancellations- Monday at 1038 cancellations to the lowest- Friday at 379.