

# Project 4

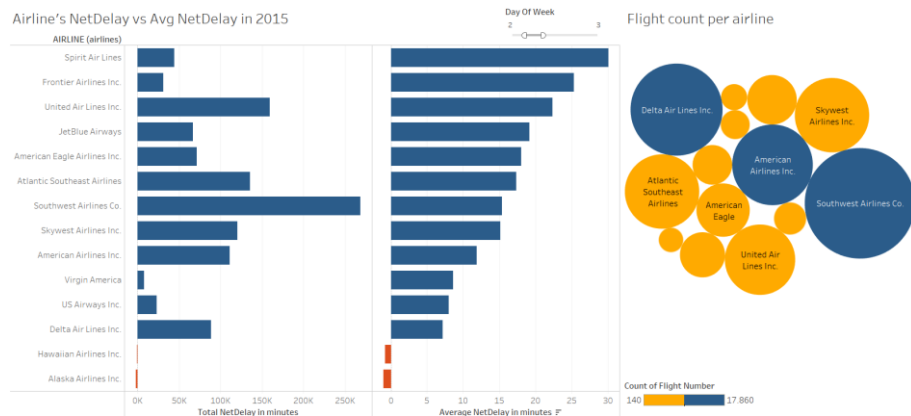
Build Data Dashboards

*Flight Delays and Cancellations*

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# What information can we find from the airlines' net delay?

[https://public.tableau.com/profile/isabel.gonzalez.rosas#!/vizhome/Project4-1\\_4/NetDelaysvsAvgDelayandflightcount?publish=yes](https://public.tableau.com/profile/isabel.gonzalez.rosas#!/vizhome/Project4-1_4/NetDelaysvsAvgDelayandflightcount?publish=yes)



First of all netDelay was created as a calculated field by summing departureDelay + arrivalDelay.

With that new field, the first conclusion arrived by taking SUM(netdelay) in consideration was that Southwest Airlines was the airline with more delay. Nevertheless, by considering avg(netdelay) it can be seen that, as Southwest Airlines has more flights than other companies its netdelay's sum is greater than others, but if we order the plot in descending order from avg(netDelay) it can be seen that Southwest Airlines is on 7<sup>th</sup> place with an average net delay of 16 and Spirit Airlines on 1<sup>st</sup> place with 33.

**Design:** chose to highlight negative values by having them on different color and on the bubbles plot differentiated airlines having more than 9,000 flights.

Though there are airlines that are not properly seen on the bubble plot, I chose it since it's purpose was to graphically see the airlines with more flights which is easily done by checking the three blue bubbles.

This means that **it's Spirit and not Southwest the airline with most delay among all.**

# Is there a relationship between airports who receive more incoming flights and states that do so?

<https://public.tableau.com/profile/isabel.gonzalez.rosas#!/vizhome/Project4-2/Arrivingairports-statesrelationship?publish=yes>

Airport with more arriving flights is Hartsfield-Jackson Atlanta International Airport with 17,833 flights, followed by Chicago O'Hare International Airport with 14,789 and Dallas/Fort Worth International Airport with 12,331.

From a total of 321 destination airports, only 5 have more than 10,000 arriving flights.

Although Hartsfield-Jackson Atlanta International Airport is the airport with more arriving flights, Georgia State is 5<sup>th</sup> in number of flights received per state. Illinois,

though it has Chicago O'Hare International Airport, is 4<sup>th</sup>. Texas is second on the state list for Dallas/Fort Worth International Airport.

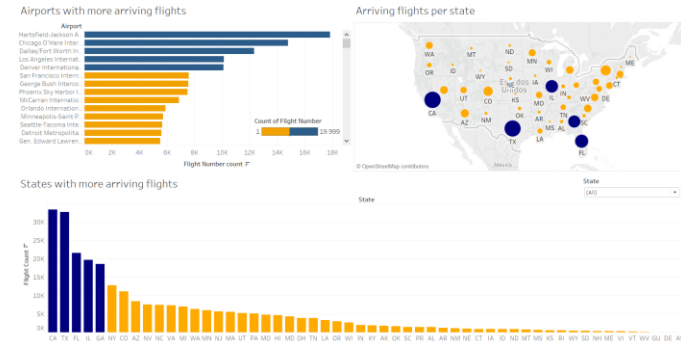
However, California state appears first on the list with Los Angeles International Airport when, if considering the airport, it's 4<sup>th</sup>. Colorado is 7<sup>th</sup> state with Denver International Airport on 5<sup>th</sup> place.

Oddly, Florida and New York are on the 3<sup>rd</sup> and 6<sup>th</sup> position for states with more arriving flights though none of their airports receive more than 10,000. In fact, both states have only one airport each which receives more than 5,000 flights: Orlando International Airport with 5,886 for Florida and LaGuardia Airport (Marine Air Terminal) with 5,151 flights for New York.

***It can be seen that the states of the 5 airports with more than 10,000 arriving flights are among the first 7 states with more incoming flight. However, Florida and New York are there too since they have more than one airport providing many incoming flights.***

**Design:** chose blue and orange for color blinded people and differentiated airports with more than 10,000 incoming flights and states with more than 18,000.

The first two plots show the same information. The idea is to make focus on the states with more incoming flights, easily seen on the map chart. The first bar chart was added in case detailed information needs to be consulted.



# Is there any similarity among airlines regarding delay reason?

<https://public.tableau.com/profile/isabel.gonzalez.rosas#!/vizhome/project4-3/DelayAnalysis?publish=yes>

Delays by airline

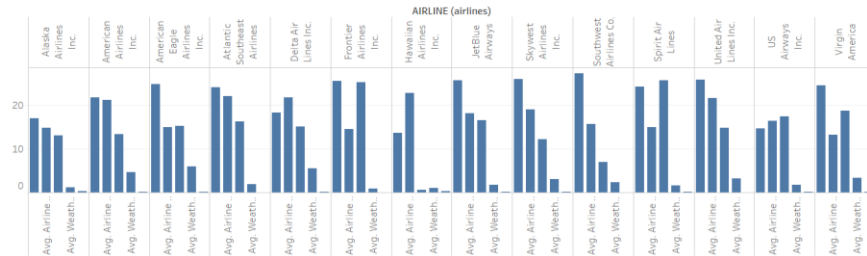
AIRLINE	%	Avg. Air System Delay	Avg. Airline Delay	Avg. Late Aircraft Delay	Avg. Security Delay	Avg. Weather Delay
Alaska Air	13.03	14.78	16.96	0.34	1.16	
American Airlines	13.36	21.10	21.76	0.18	4.68	
American Eagle	15.23	14.92	24.67	0.12	5.97	
Atlantic	16.18	21.94	24.00	0.00	1.86	
Delta Air	15.07	21.64	18.29	0.08	5.56	
Frontier	25.14	14.51	25.38	0.00	0.82	
Hawaiian	0.53	22.71	13.66	0.29	1.07	
JetBlue	16.44	18.06	25.57	0.18	1.78	
Skywest	12.22	18.91	25.85	0.12	3.10	
Southwest	7.01	15.67	27.13	0.04	2.31	
Spirit Air	25.55	14.91	24.13	0.18	1.53	
US Airways	17.28	16.28	14.55	0.14	1.69	
United Air	14.80	21.56	25.76	0.00	3.18	
Virgin Air	18.67	13.12	24.41	0.18	3.40	

Most common delay

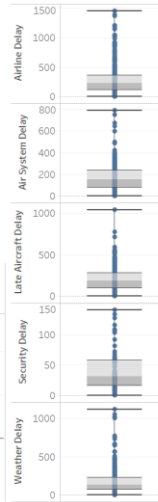
Avg. Late Aircraft Delay	23.74
Avg. Airline Delay	18.59
Avg. Air System Delay	13.46
Avg. Weather Delay	3.16
Avg. Security Delay	0.09

AIRLINE (airlines)  
(all)

Delays per airline



Delays



It can be seen that Late aircraft delay is the most common delay reason among most of the airlines.

Delta and Hawaiian airlines have airline delay as first type of delay reason.

Both Spirit and US airways have Air System delay as first delay reason.

Security delay seems not to be so relevant compared to other types of delays.

The two first most common delay reasons have a median around 200 minutes. Airline delay with a median of 226.5 and Late aircraft delay with 184 minutes.

**Design:** The bar chart was chosen to easily see what's each airlines mayor delay reason. The box plot was chosen to check median and max and min values for each delay reason.