Flights Delays Data Visualization Project Report

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Report Contents:

Links of Visuals:

1. **Insight 1**

   https://public.tableau.com/app/profile/hahsim.j.k/viz/Delays-vs-Cancelled-Flights/Cancelled-Flights-vs-Cities?publish=yes

   This visual shows you the distribution of Cancelled Flightd on Cities, as you see, Chicago has the greatest number of Cancelled Flights.

2. **Insight 2**

   https://public.tableau.com/app/profile/hahsim.j.k/viz/Cancelled-Flights-vs-airports/Cancelled-Flights-vs-airports

   This visual shows you the distribution of Cancelled Flightd on airports, as you see, Chicago O'Hare International Airports has the greatest number of Cancelled Flights.

3. Insight 3

https://public.tableau.com/app/profile/hahsim.j.k/viz/Cancelled-Flights-vs-airlines/Cancelled-Flights-vs-airlines

This visual shows you the distribution of Cancelled Flightd on airlines, as you see, Southwest Airline Co. has the greatest number of Cancelled Flights.

4. Insight 4

https://public.tableau.com/app/profile/hahsim.j.k/viz/Cancelled-Flights-vs-day-of-week/Cancelled-Flights-vs-day-of-week?publish=yes

This visual shows you the curve of Cancelled flights in each day. Notice, Wednesday has the lowest number of Cancelled Flights and the curve will go up on Thursday.

5. Insight 5

https://public.tableau.com/app/profile/hahsim.j.k/viz/Cancellation-reasons-vs-month/Cancellation-reasons-vs-month?publish=yes

This image shows us the cancellation reasons and counting the number of cancelled flights for each reason during a year.

6. Insight 6

https://public.tableau.com/app/profile/hahsim.j.k/viz/Two_CausesofCancellationFlightsinUSAFebruray2015/CausesofCancellationFlightsinUSAFebruray2015

This is a story that shows you findings about cancellation reasons and their relationship with delays levels. I provide here two causes of cancellation reasons, Weather and Delays, these by providing some visuals.

7. Insight 7

https://public.tableau.com/app/profile/hahsim.j.k/viz/Delays-vs-Cancelled-Flights/Delays-vs-Cancelled-Flights?publish=yes

This dashboard shows you an expected relationship between delays and increasing or decreasing numbers of cancelled flights. By using line and area charts that show Percent Differences for them.

8. Insight 8

https://public.tableau.com/app/profile/hahsim.j.k/viz/General-insights-about-Cancelled-Flights/General-insights-about-Cancelled-Flights

This dashboard provides general information about distributing cancelled flights based on many aspects.

9. Insight 9

https://public.tableau.com/app/profile/hahsim.j.k/viz/arrival-delay-vs-cancelled-flight/arrival-delay-vs-cancelled-flight?publish=yes

This visual shows an expected relationship between the average of arrival delays and the number of cancelled flights for each level.

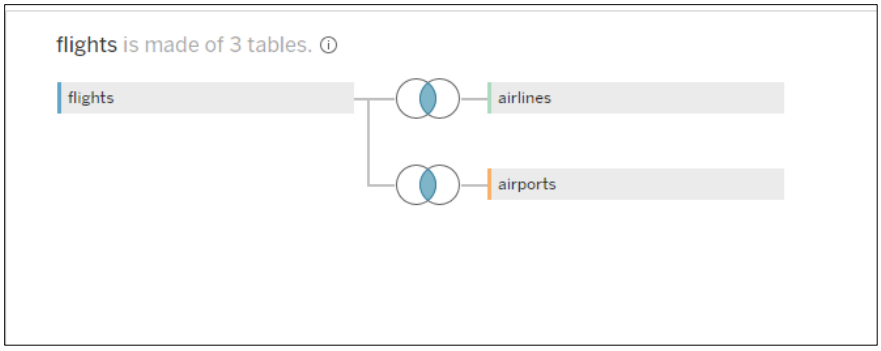
10. Insight 10

https://public.tableau.com/app/profile/hahsim.j.k/viz/dep-delay-vs-cancelled-flight/dep-delay-vs-cancelled-flight?publish=yes

This visual shows an expected relationship between the average number of departure delays and the number of cancelled flights for each level.

Design Methodology:

At First, I prepared the data in excel to make me achieve the goals from analyzing and sharing insight with visuals. The key point I did it, is convert the decimal numbers of columns' times to be in [hh: mm] context. After that I load all the sheets in Tableau to tie them together. I used an inner join to do it, as shown below:



Then, I use them to spot the facts and associations. One important thing was helping me is creating a calculated field called Number of Cancelled Field to determine the transactions has 1 ‘cancelled’ as a value. After that I visualize my data points and make dashboards and story.

Main Story or Findings or Project Summary:

Early, you can’t understand what findings that data provides to you, after segmenting the data to parts and linking them together you will a whole picture. So, I counted the number of cancelled flights based on different aspects of data, like (city, airports, airlines, month, day of week). And I saw the following:

1. The cancelled flight decreases on Wednesday than other days.
2. The cancelled flights increase more in February of the Weather Cancellation reasons.
3. Most cancellation reasons are the Weather reasons than other reasons.
4. One of the key reasons to cancel flights is the Weather cases.
5. There is an Expected relationship between Departure, Arrival Delays with the number of Cancelled Flights.

Resources List:

1. https://www.ncei.noaa.gov/access/monitoring/monthly-report/snow/201502
2. https://powerbi.microsoft.com/en-us/data-storytelling/