UDACITY

NANODEGREE PROGRAM

TO BUILD DATA DASHBOARD USING TABLEAU

Flight Delays and Cancellations

INSIGHT 1

What causes Cancelation?

This dashboard provides an overview of the factors that contribute to the cancellation.

1. Weather is the leading cause of airline cancellations, accounting for more than half of all cancellations. During the year 2015, 2397 flights were canceled due to bad weather. This insight may be seen in a bubble chart, which was chosen because adjusting the size, provides an easy grasp of the various values and a clear perspective of the most common reasons.
2. American Eagle Airlines Inc. had the most flight cancellations on average, with 5% of their flights being canceled in 2015. When compared to Atlantic Southeast Airlines, which has over double the number of flights (14.149 vs 27.172) but about the same number of cancellations (723 vs 800), resulting in a cancellation rate of 2.94 percent of total flights. This insight was shown as a treemap because it is based on simple data (airline delays) but presented in an eye-catching style.
3. In contrast to the total number of flights, February has the most cancellations 1058, followed by January with 605. February also has the fewest flights throughout the year. Because it highlights the trends over time and makes it easier to observe the ups and downs, this information has been portrayed using a line chart.
4. Monday is the day of the week with the most flight cancellations, with 630 flights canceled solely due to weather. Friday, on the other side, had the fewest cancellations, with only 379 total cancellations compared to 1038 cancellations on Monday. Because we may combine more than one variable in an insight table, we used it for visualization.

Link to Insight 1 Dashboard: ----------
https://public.tableau.com/app/profile/shivam6287/viz/Dashboard1_16429593234800/Dashboard1?publish=yes

INSIGHT 2

What causes the delays?

This dashboard provides an overview of the variables that have contributed to the delay.

1. In the very first visual we provided with a bar chart showing different Delay types and a dropdown is also provided to control the Airport which one wants to see, one can even look at all the airports with number of flights delayed with each reason all at once. There are six types of Delay:- Air System Delay, Airline Delay, Arrival Delay, Departure Delay, Late Aircraft Delay, Security Delay. We observed that in most Airline Departure Delay is the prominent delay which is caused.
   This insight uses side-side bar chart so that we can look at all the reasons for the Delay at once and even can compare it within airlines.

2. Both average arrival delays and departure delays have a similar distribution across the month, peaking in June 9.81 average arrival delay and 14.160 average departure delay and the lowest point in September.
   As Line Chart highlights the trends over time and makes it easier to observe the ups and downs, this information has been portrayed using a line chart. In addition, the graph allows you to compare the various averages.
3. Although arrival delays can be found all over the world at various places, the Chicago, IL airport 111,111 has the most number of delays. It's worth noting that, while we can find delays in several countries throughout the world, the concentration is in the United States due to the nature of the dataset we're looking at.
   This understanding may be shown in a colourful map because it is a beautiful method to depict a spatial variable, such as the city. It not only offers the data, but it also provides additional information about the area.
4. In third visual of Diverted Flights vs Airlines being sorted in decreasing order we can see that South West Airlines has maximum diverted percentage across the table 23.88%.
   Diverted Flights can be the reason for the delay as well.
   This insight can be very well be shown using bar chart as we have categorical variable of airlines corresponding which we plot number of diverted flights and the comparison can easily be set within the graph.

Link to Insight 2 Dashboard: ----------

https://public.tableau.com/app/profile/shivam6287/viz/Dashboard2_16430105270120/Dashboard1?publish=yes

INSIGHT 3

What are the most common flights?
This dashboard is made up of four worksheets that examine the number of flights from several angles-------

1. Southwest Airlines Co. is the most popular airline, with 59,437 flights; Delta is the second most popular airline, with nearly 41,516 flights.
   This insight may be shown in a bubble chart, which was chosen because adjusting the size, provides an easy grasp of the various values and a clear perspective.
2. CA is the most popular destination, accounting for 33,331 flights, followed by TX 32,612. Nonetheless, the number of flights is evenly spread among US destination airports.
   This understanding can be observed in a coloured map because it is a beautiful method to depict a spatial variable, such as the state. It not only offers the data, but it also provides additional information about the area.
3. The month with the most flights, 26,810, is July, while the month with the fewest flights, 22,404, is February. This is also linked to the initial insight, which revealed that February is also the month with the most cancellations.
   This insight is very well shown by a line chart where we can easily visualive through peaks and minima the above mentioned results.
4. Although Monday (1 signifies Monday) has the most flights (41,016), the other days of the week appear to have a similar number of flights. There is a trend toward fewer flights on weekends, particularly on Saturday, when the lowest number of flights is 33,039.
   Because days of the week are a categorical variable, this visualisation can be displayed as a bar chart.

Link to Insight 3 Dashboard: ----------

https://public.tableau.com/app/profile/shivam6287/viz/Dashboard3_16430136121300/Dashboard1?publish=yes

References

- Github
- Tableau Documentation