WGU/Udacity

Data Analyst Nanodegree Program

Data Visualization: Build Data Dashboard

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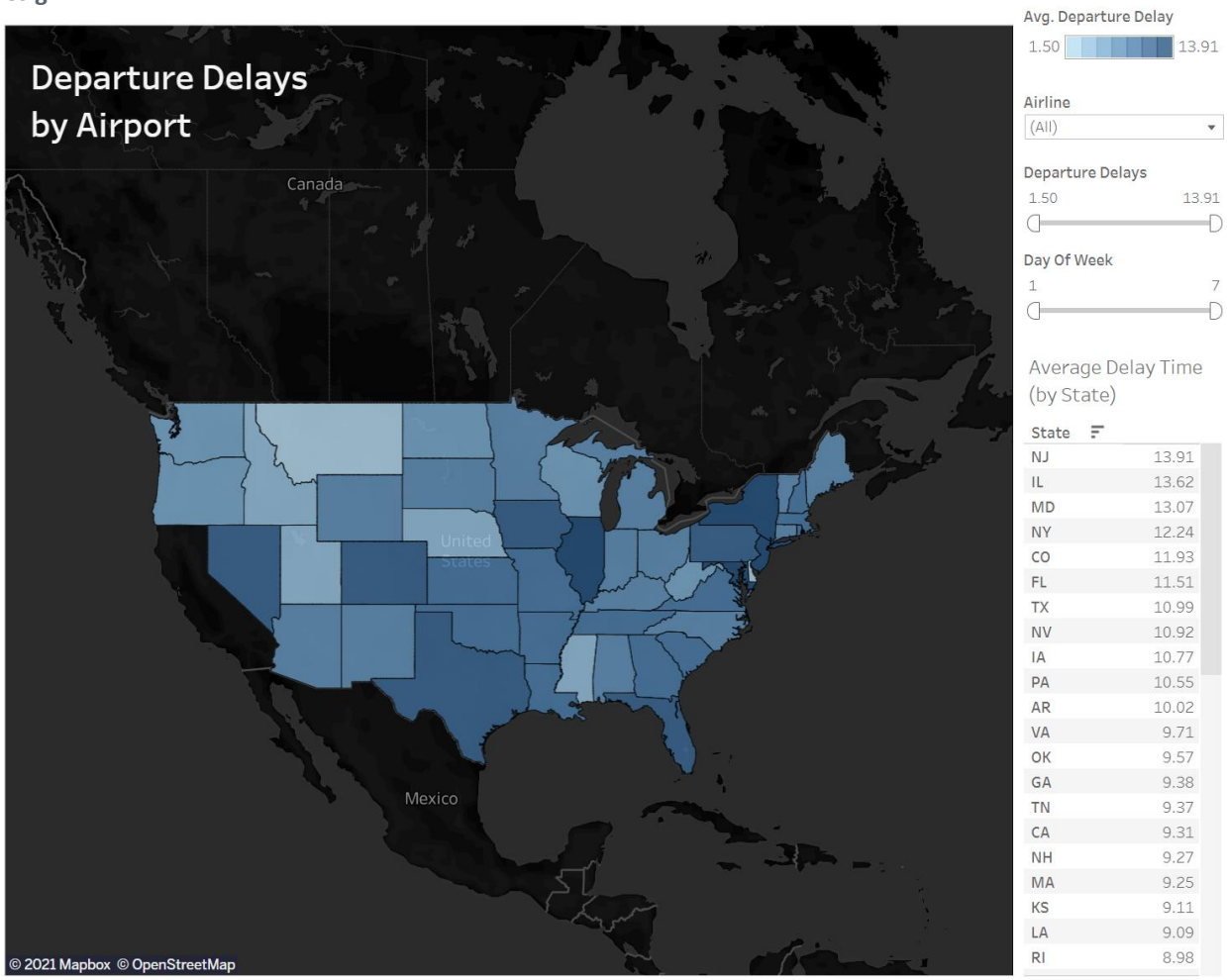
Question 1: Which state within mainland USA generated the highest average delay times?

- **Links**: https://public.tableau.com/app/profile/emmanuel.gutierrez/viz/AirportDelays_16361188887290/FlightDelays

- **Summary:**
  According to the dashboard, the state with the highest average delay time is New Jersey at 13.91 minutes, and the state with the lowest is Montana at 1.5 minutes

- **Design**:



For the design, I followed the following steps:

- **First**: I imported and joined the flight's data with the airport's data by joining the IATA field with the Origin field:
- **Second:** I applied a filter to ensure no state outside of mainland USA was counted: (AK, HI, PR, AS, GU)
- **Third:** I constructed a map visualization to show a light pink shade for states with lower delay times and progressively went to dark red for states with high times. For the value field, I took departure delay and selected average as the calculation

- **Fourth:** I included a table with the numeric result for each state, and filters to allow further drill-down of the insight
- **Fifth:** All filters are interconnected to allow a seamless experience through the dashboard as it will only display relevant values as opposed to all values

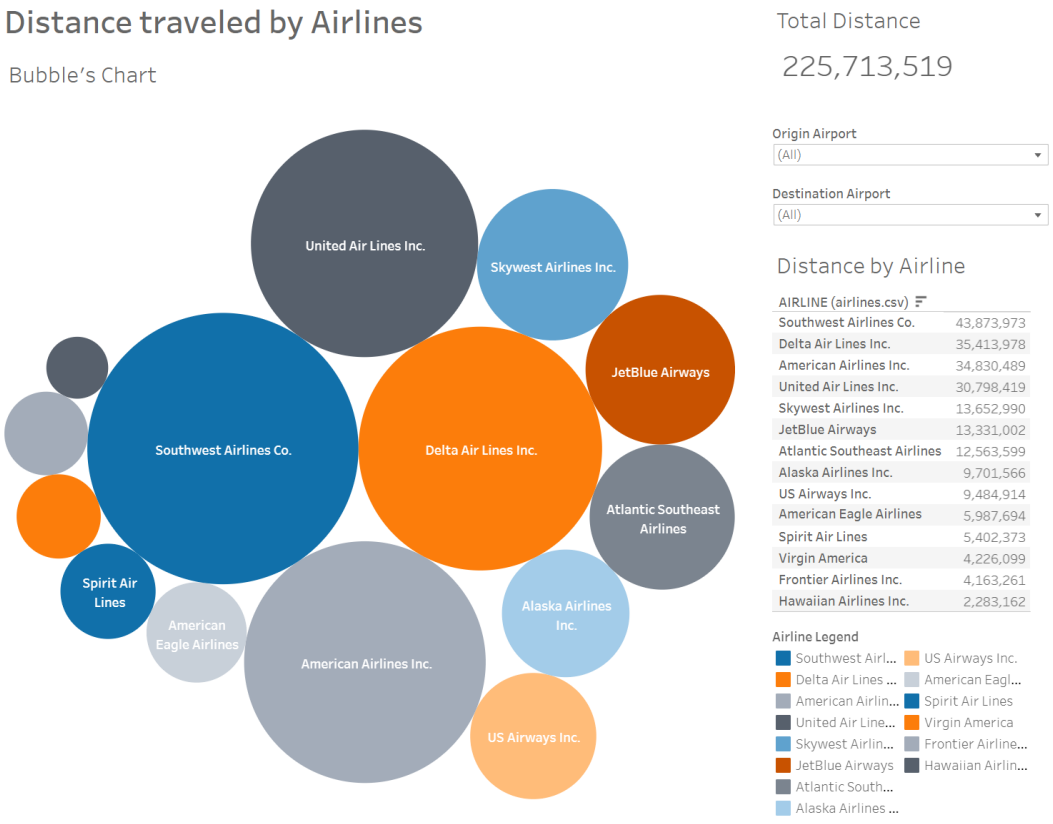
- **Resources**: Only resource used were the materials provided by Udacity

Question 2: What airlines travel the most amount of distance?

- **Links**: https://public.tableau.com/app/profile/emmanuel.gutierrez/viz/AirlineDistance_16360931241030/DistancetraveledbyAirlines

- **Summary:** According to the dashboard, the airline that traveled the most amount of distance was Southwest Airlines at 43.87M miles, and the airline with the least amount of distance was Hawaiian Airlines at 2.28M miles. I also added an origin airport and destination airport filter to allow for better drill-down of the data

- **Design**:



For the design, I followed the following steps:

- **First**: I joined the airlines and flight dataset. One point to note, the IATA field on the airline's table relates to the airline's field on the flight table (Not to be confused with the IATA field for the airport's table)
- **Second:** I constructed a bubbles chart that will allow me to visually see the size of the bubble as it relates to airline total distance. For the value, I chose a sum on the distance to get the total distance per airline

- **Third** I included a numeric table as well as a "Total Distance" box to showcase the results.
- **Fourth:** All filters are interconnected to allow a seamless experience through the dashboard as it will only display relevant values as opposed to all values

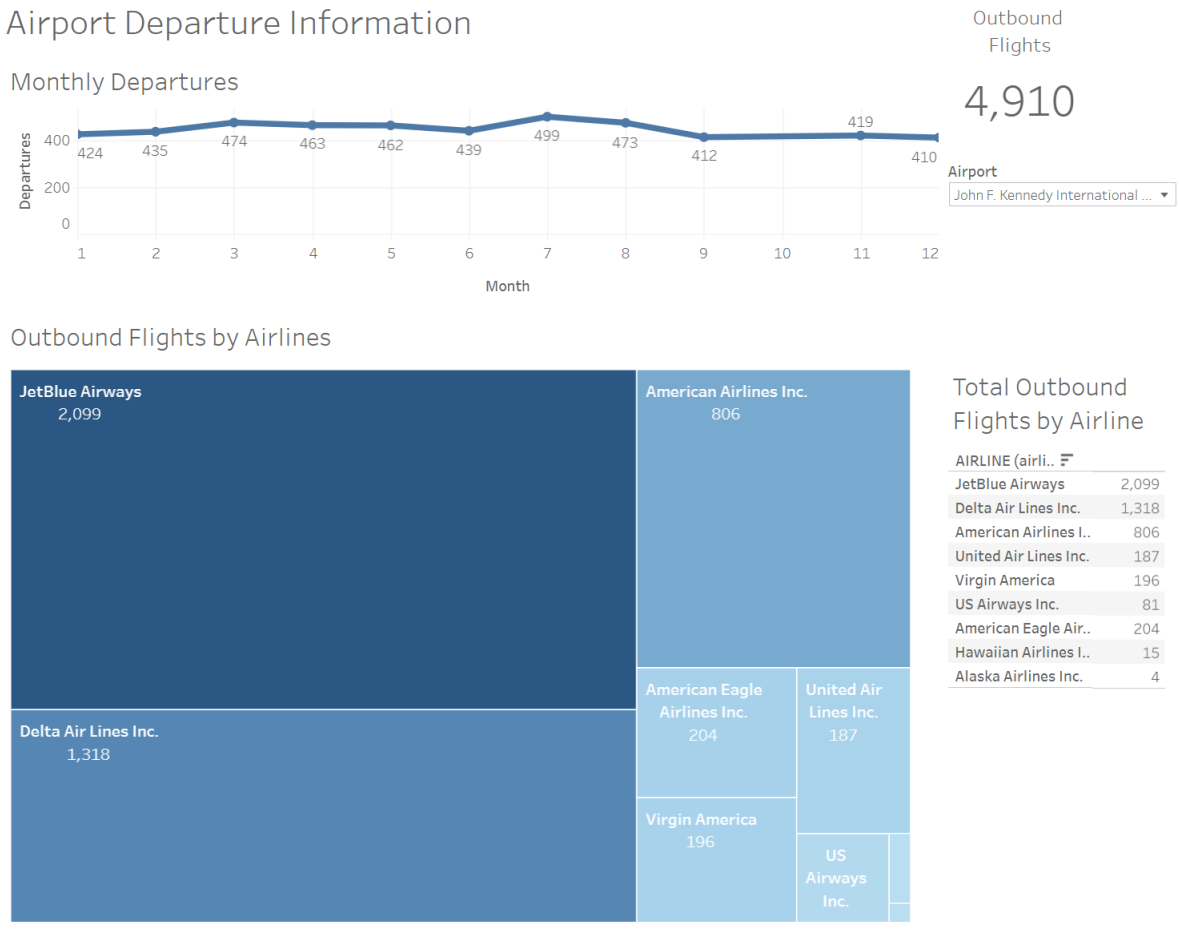
- **Resources**: All filters are interconnected to allow a seamless experience through the dashboard as it will only display relevant values as opposed to all values

Question 3: How many outbound flights departed John F Kennedy Airport in March?

- **Links**: https://public.tableau.com/app/profile/emmanuel.gutierrez/viz/AirportDepartureInfo/DistancetraveledbyAirlines

- **Summary:** According to the dashboard, there were 474 flights from JFK airport in March. In total, there were 4,910 outbound flights and JetBlue had the most departure out of JFK. I created different visuals and an airport filter in the chart to allow drill-down of the insight

- **Design**:



For the design, I followed the following steps:

- **First**: I joined airport and airline data by the origin airport field. This allowed me to use the airport names as part of the filtering.

    - **Second:** I created a bar graph showing the monthly departure count. For the value, I counted all rows on the flight table from the origin airport
    - **Third**: I included a treemap to show the airlines with the highest departure count. I also included a total count box and a table showing each airline's departure count.
    - **Fourth:** All filters are interconnected to allow a seamless experience through the dashboard as it will only display relevant values as opposed to all values
- **Resources**: All filters are interconnected to allow a seamless experience through the dashboard as it will only display relevant values as opposed to all values

Summary: I purposely kept all data strictly to the sources provided to ensure easy interpretation of the assessment. Thank you for grading my submission. I had a ton of fun with this assignment 😊