Answer 2.7
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[Influenza Deaths Spatial Analysis]

The goal of this analysis was to examine influenza deaths across U.S. states from 2009 to 2017 to identify regions with the highest and lowest mortality rates. This helps determine where resources like staffing might be needed during flu seasons.

Data Used:

- **Influenza Deaths Pivot:** A dataset containing influenza deaths by state and year.
- **State:** Geographic boundaries for each U.S. state.
- **Flu Shot Rate:** Vaccination rates added to enable comparison between influenza deaths and vaccination efforts.

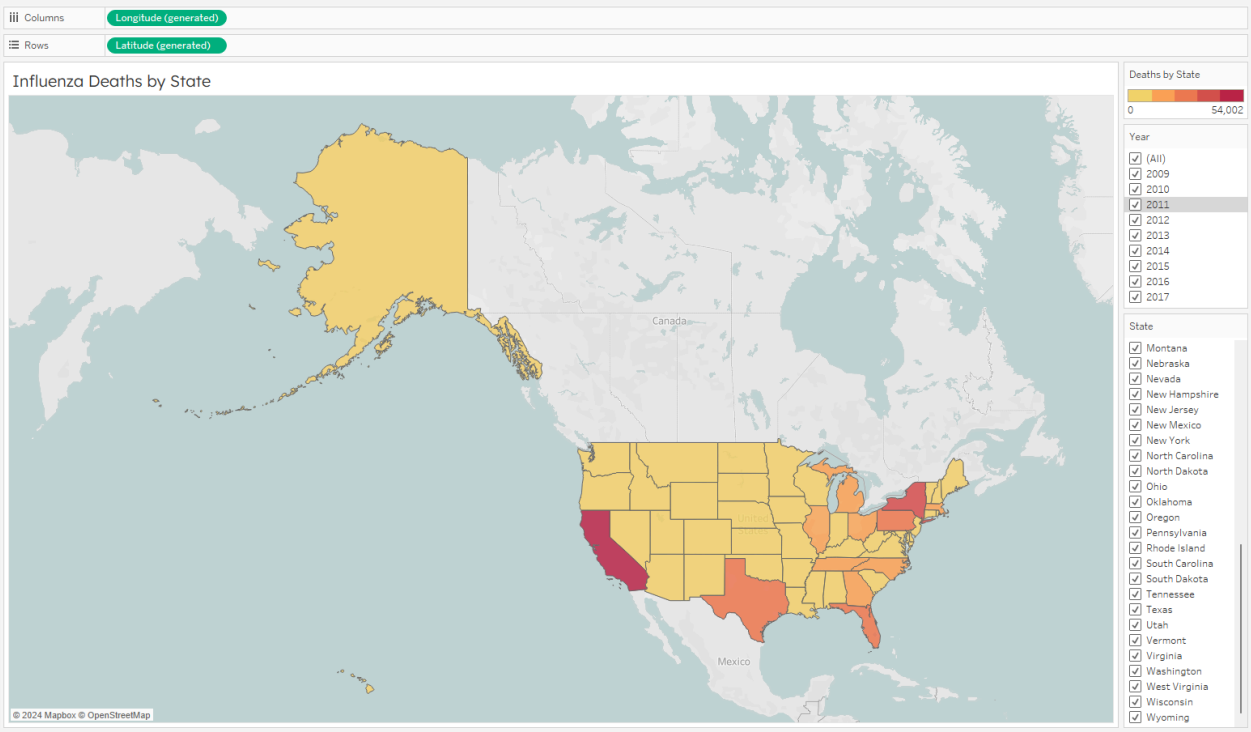
Steps to Create:

Initial Map Setup:

- I created a map using states as spatial boundaries and total influenza deaths as the measure.
- I combined data from 2009 to 2017 into a single total deaths metric to make the analysis easier to interpret.

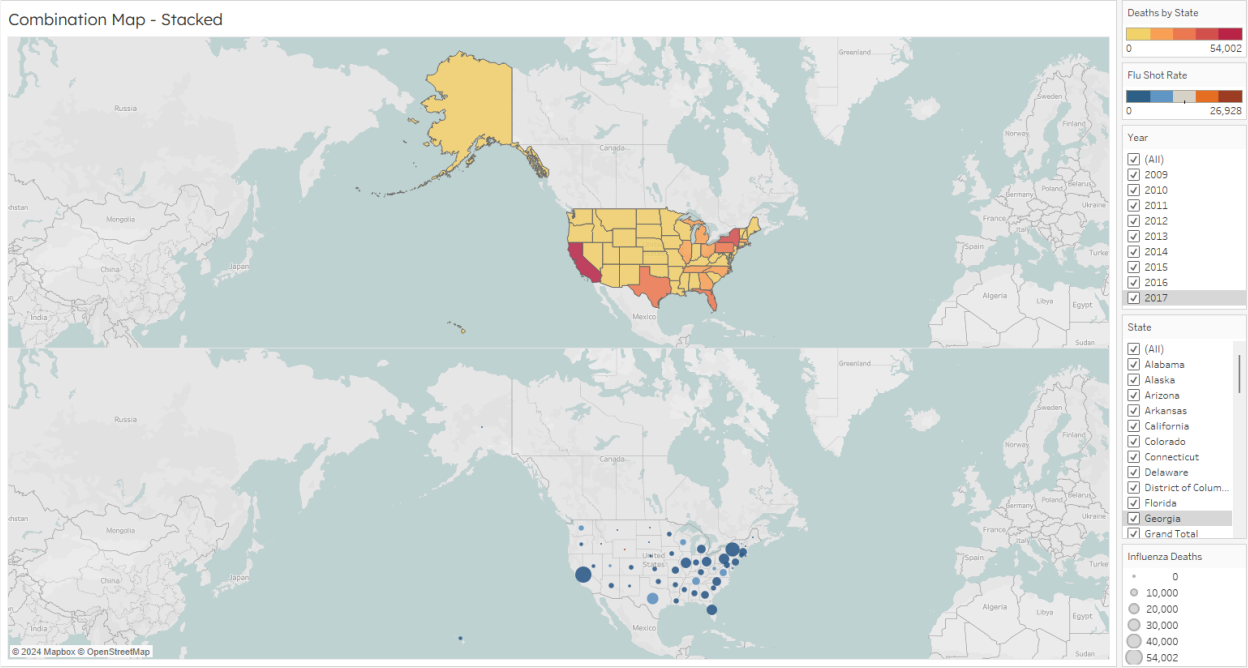
Yearly Filter:

- I added a filter to allow the data to be viewed year by year or as a total across all years.



Combination Map (Dual-Axis):

- Added flu shot rate as a second measure, visualized through color, to compare vaccination coverage with deaths.
- Used a synchronized dual-axis setup to display both metrics effectively.



Additional Adjustments:

- I added tooltips to provide more information when users hover over a state.
- I included legends to help explain the colors and sizes used in the visualization.

Challenges:

- **Missing Flu Shot Rate Data:**
  - The dataset did not originally include flu shot rates, so I had to create a new pivot table in Excel and combine it with the existing data. This added complexity but was necessary for the dual-axis map.
- **Excel File Errors:**
  - While working with Tableau and Excel at the same time, I encountered issues saving the Excel file. These errors sometimes corrupted the file, forcing me to recreate portions of my data.
- **Time Challenges:**
  - Resolving these errors and combining data took extra time, but it taught me valuable skills for handling file dependencies and troubleshooting.

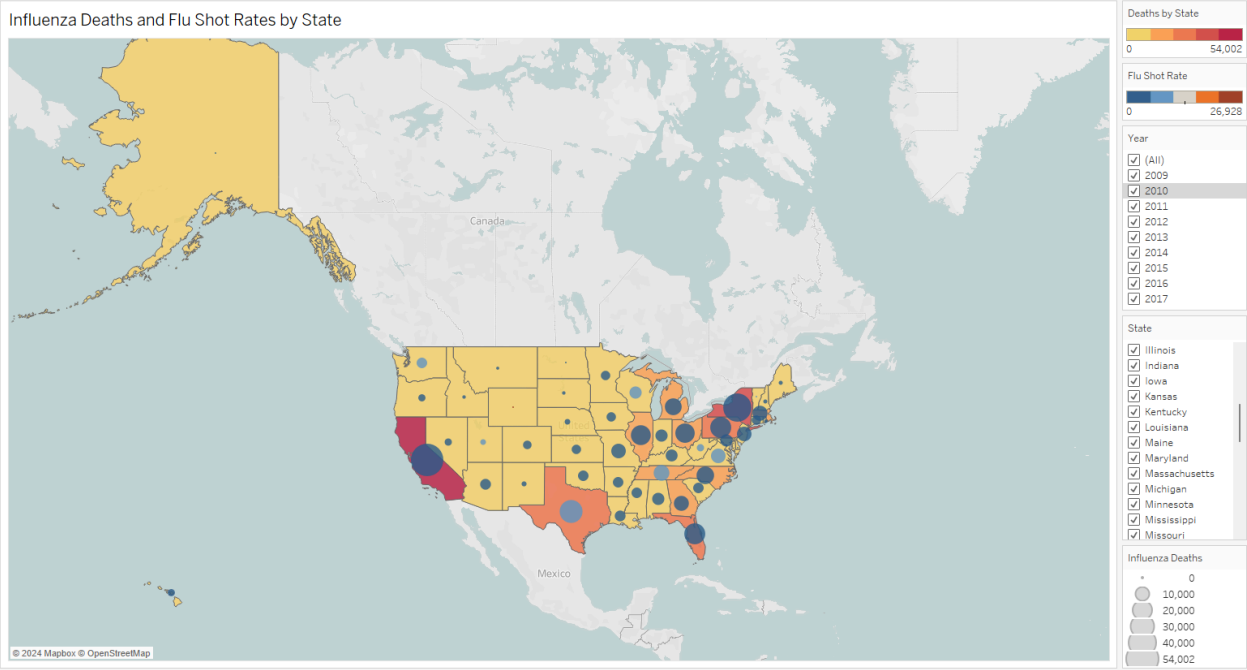
How Time Impacts Trends:

- Viewing the total deaths across all years gives a clear overall picture of mortality rates. However, filtering by individual years shows spikes in certain years, likely due to severe flu seasons or other factors.

- The combination map highlighted states with high deaths but lower flu shot rates, suggesting where vaccination campaigns might need to be improved.

Conclusion:

This analysis identified important spatial and temporal patterns in influenza mortality and vaccination rates. Despite technical challenges, the visualizations helped highlight areas that could benefit from better public health strategies and resource allocation.

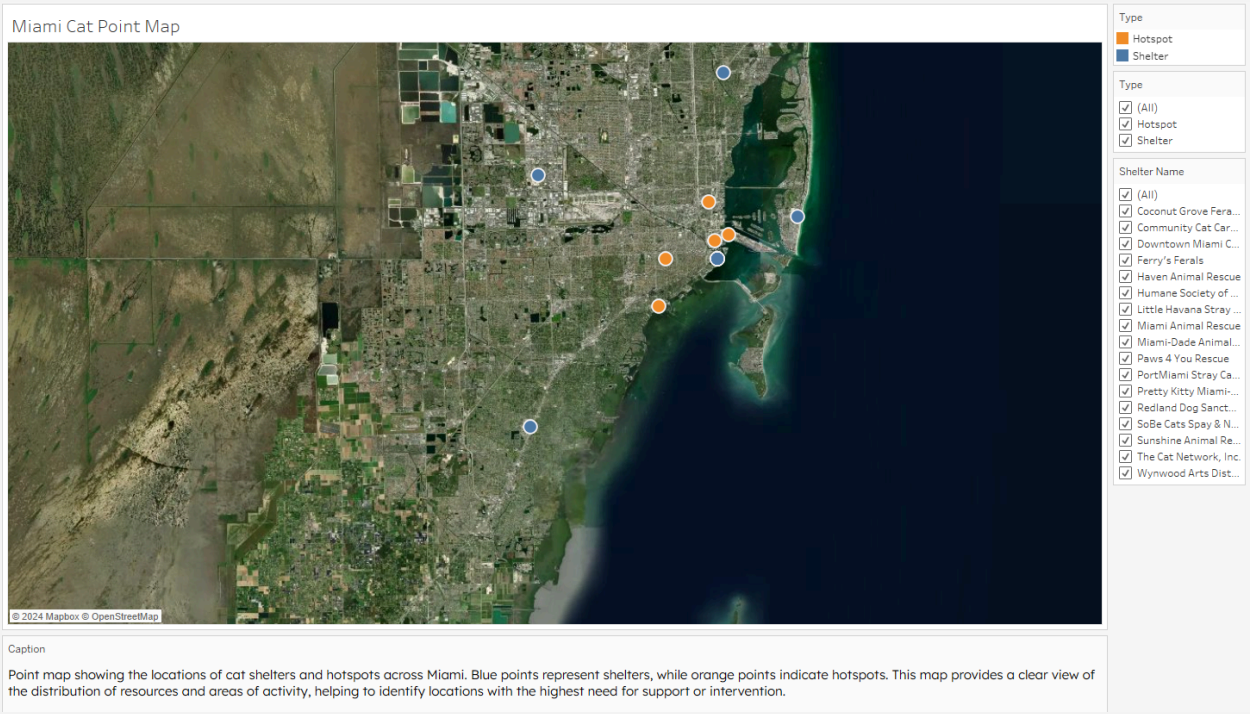


Bonus Task: Miami Cat Shelters and Hotspots Analysis

Purpose:

The goal of this bonus task was to create a point map and heat map to help raise awareness about cat shelters and hotspots in Miami, FL. By mapping shelter locations and providing key details, the visualization connects the community with resources to support stray cats.

I chose this topic because of a personal experience that highlighted the urgent need for community support. A friend who is moving wanted to surrender their cat to a shelter, but when I called the shelters, I learned they are all at capacity. I was told that healthy cats are often released onto the streets due to overcrowding, while sick cats are kept and cared for. This inspired me to bring attention to this issue and help others connect with shelters and resources.



You can check out the chart here.

Data Used:

- **Shelter/Hotspot Name:** Names of cat shelters and known hotspots in Miami.
- **Latitude and Longitude:** GPS coordinates to map locations accurately.
- **Additional Information:** Includes addresses, contact numbers, websites, and types (shelter or hotspot).

Steps to Create:

1. **Point Map Creation:**
    - I started by building a point map using latitude and longitude data for each shelter and hotspot.
    - I added information like shelter/hotspot names, types, contact numbers, and website links to the tooltips to make them more useful.
2. **Heat Map Creation:**
    - I adjusted the dataset to create a heat map, which highlights the density of shelters and hotspots across Miami.
    - This helped to show where shelters are concentrated and where more resources might be needed.
3. **Formatting and Style:**
    - I used different colors to separate shelters (blue) from hotspots (orange) to make the map easy to interpret.
    - I customized the tooltips to display all the relevant details in a clear way.

Challenges:

- **Data Collection:** It took time to find accurate and complete information for shelters and hotspots in Miami.

- **Tooltip Customization:** Getting all the details, like contact numbers and website links, to display correctly in Tableau required some troubleshooting.

Conclusion:

This task was a great opportunity to work with GPS data and create meaningful visualizations. By mapping cat shelters and hotspots in Miami, the visualizations can help increase awareness and encourage community support for stray cats.