NYU

CUSP-GX 6006 Data Visualization

Confirmed US Covid Cases Visualization Tool

Final Project Presentation
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img src:
https://www.crushpixel.com/big-static15/preview4/coronavirus-covid19-medical-background-with-2025573.jpg

What is the data about?

COVID-19 Open-Data from Google

Source: https://github.com/GoogleCloudPlatform/covid-19-open-data

The data represents worldwide covid statistical data for everyday since the pandemic.

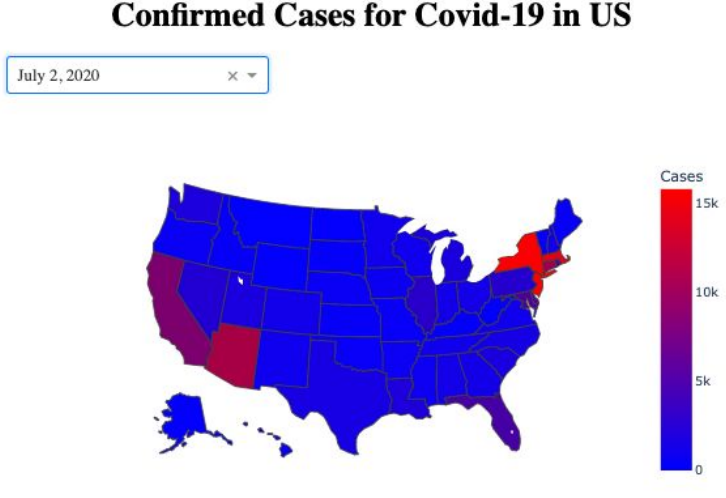
Example Fields: Date, Location, Cumulative_Case_Count

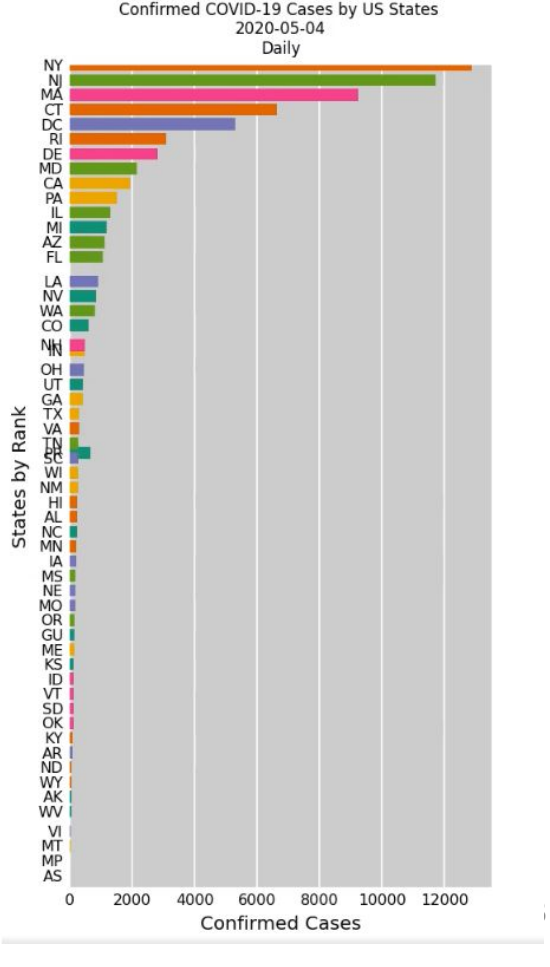
Steps:

- Filtered on data for US States - 2 million records!
- Joined ‘Epidemiology’ table with ‘Index’ table
- Cleaned data for out-of-range dates and null values
- Preprocessed data into ‘wide’ format

The Interactive Visualization Tool

- Goal: To show a temporal and geospatial visualization of Confirmed Covid cases in the United States
- Provide a high-level and low-level overview of how cases have spread since the start of the pandemic
- choropleth + bar chart race

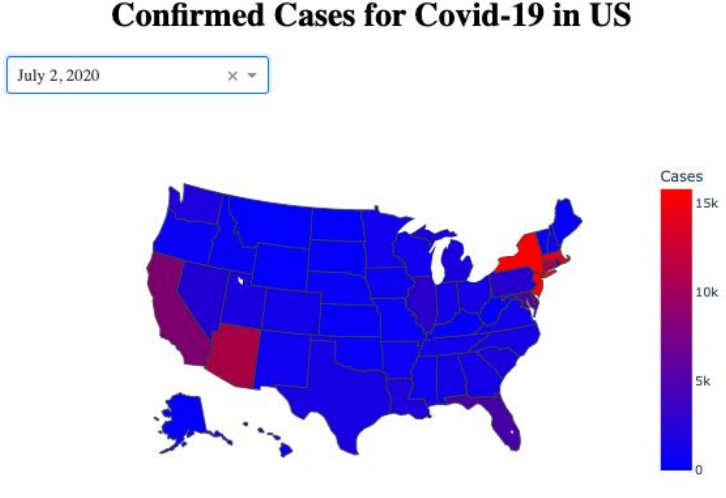


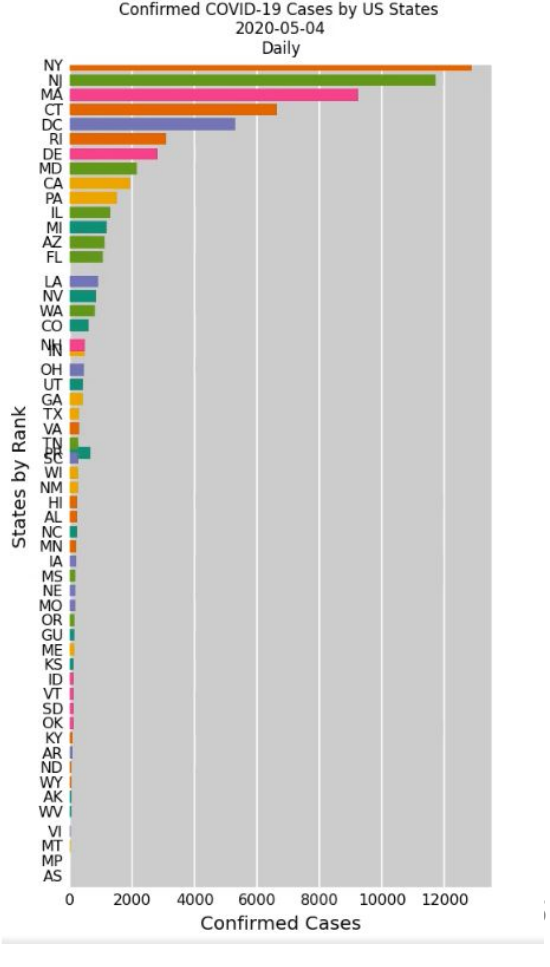


Time for the demo!

What is being visualized in each channel?

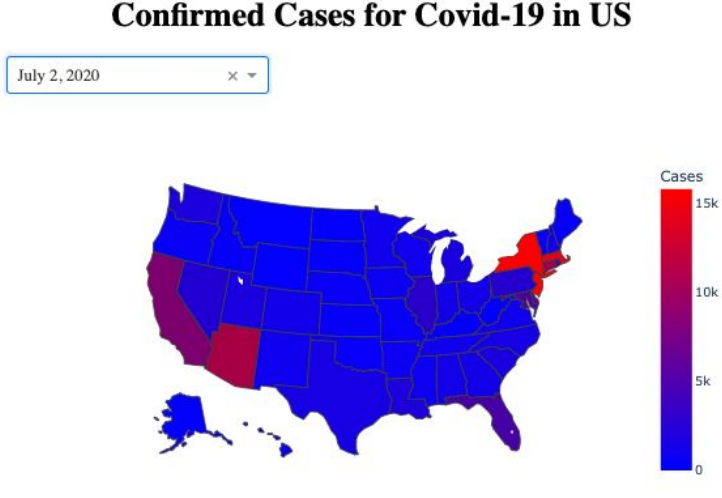
- Right: Length being used to represent case count
  - Time represents date (Daily -> Weekly)
  - Note: color is being used just for visual clarity
- Bottom: Color being used to represent case count

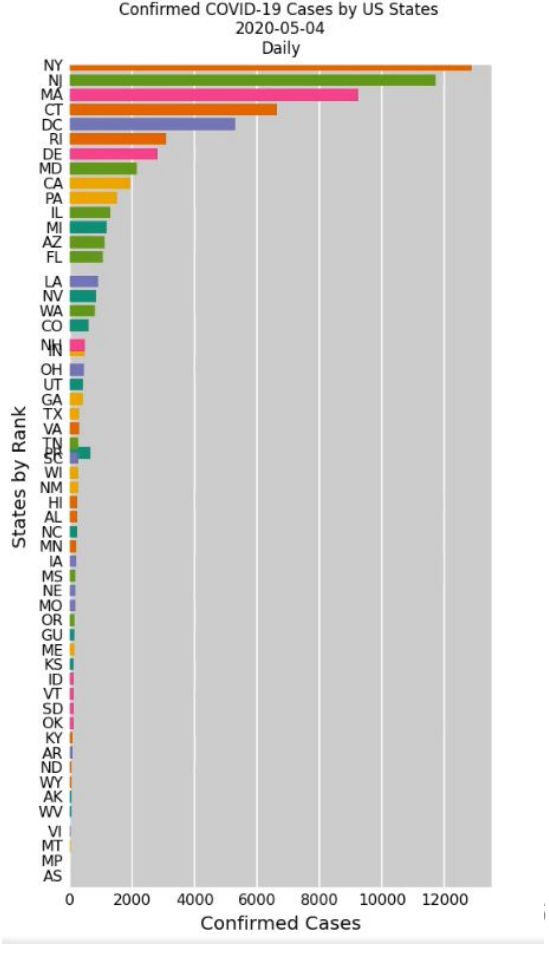




Why is the visualization effective?

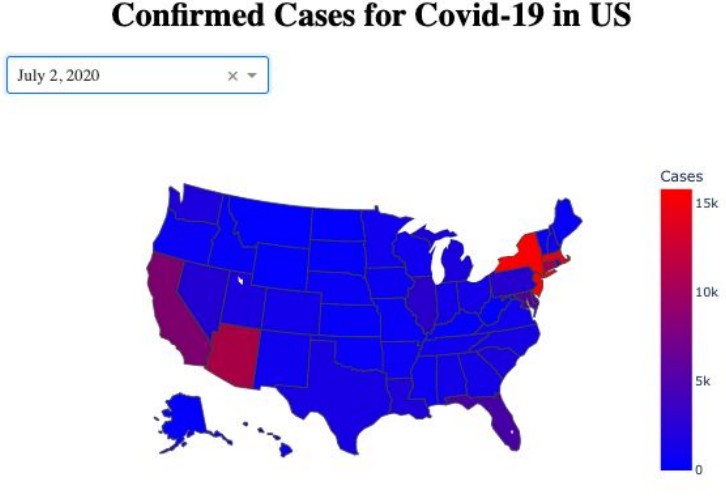
- Right: Using length rather than color to encode case counts makes it easy for the viewer to compare any two states.
- Bottom: Plotting the same data geospatially with a color map provides detailed information when the user want to drill down. By seeing the states on a map, it is easier to understand the spread of the virus.

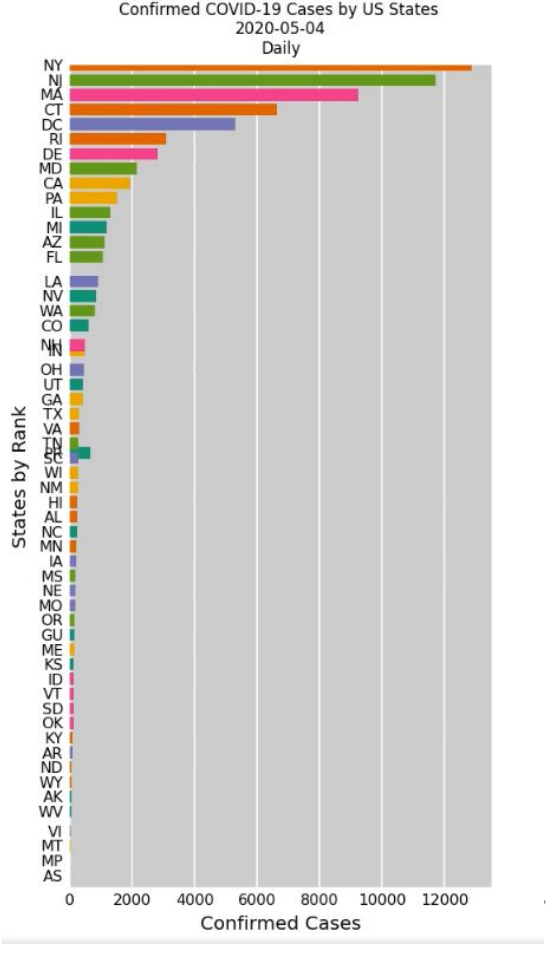




What message is conveyed through the visualization?

- Both visualizations help to paint a complete picture on the spread of the COVID 19 virus. The race chart highlights how the cases have increased over time and which states rank the highest for any given date. The map provides spatial context to highlight how the virus has spread across those states.





Implementation Details

Libraries Used

- pandas
- plotly
- matplotlib
- dash
- flask

References

- https://plotly.github.io/plotly.py-docs/generated/plotly.express.choropleth.html
- https://plotly.com/python/choropleth-maps/
- https://github.com/GoogleCloudPlatform/covid-19-open-data
- https://www.dunderdata.com/blog/create-a-bar-chart-race-animation-in-python-with-matplotlib

Thanks

Any Questions?