Washington Fatal Crash Files

Kaosi Unini, Micah Tracy, Rhys Winter, Ryan Zhang

Initial Question

- Washington has had an unprecedented increase in traffic fatalities following the

    COVID-19 pandemic

- What does the concentration of crashes look across the whole state during COVID?

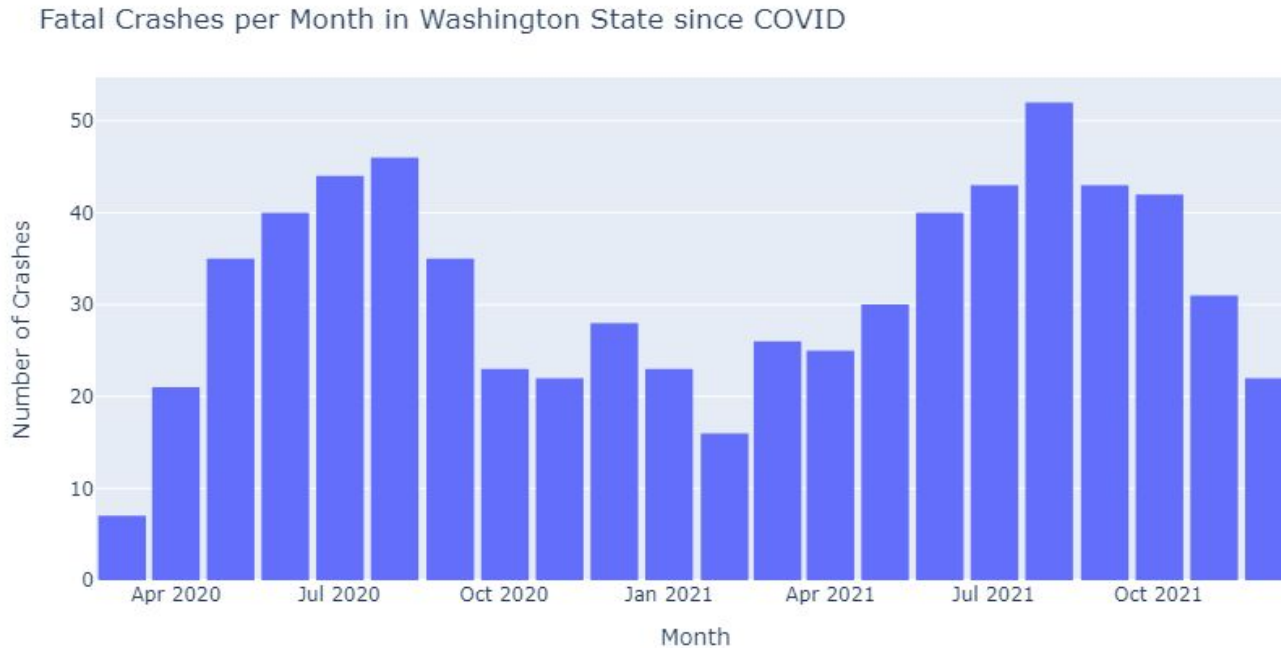- What zip codes/counties are producing high-risk drivers at the highest rate?

Approach

- Our team is experienced with pandas in python, so we used that method to filter and visualize the data that was provided.

  - We filtered the dataset to only crashes that resulted in a driver fatality and occured after March 13, 2020.

- After filtering using pandas, we visualized using plotly express

- Our code is presented through Jupyter Notebook

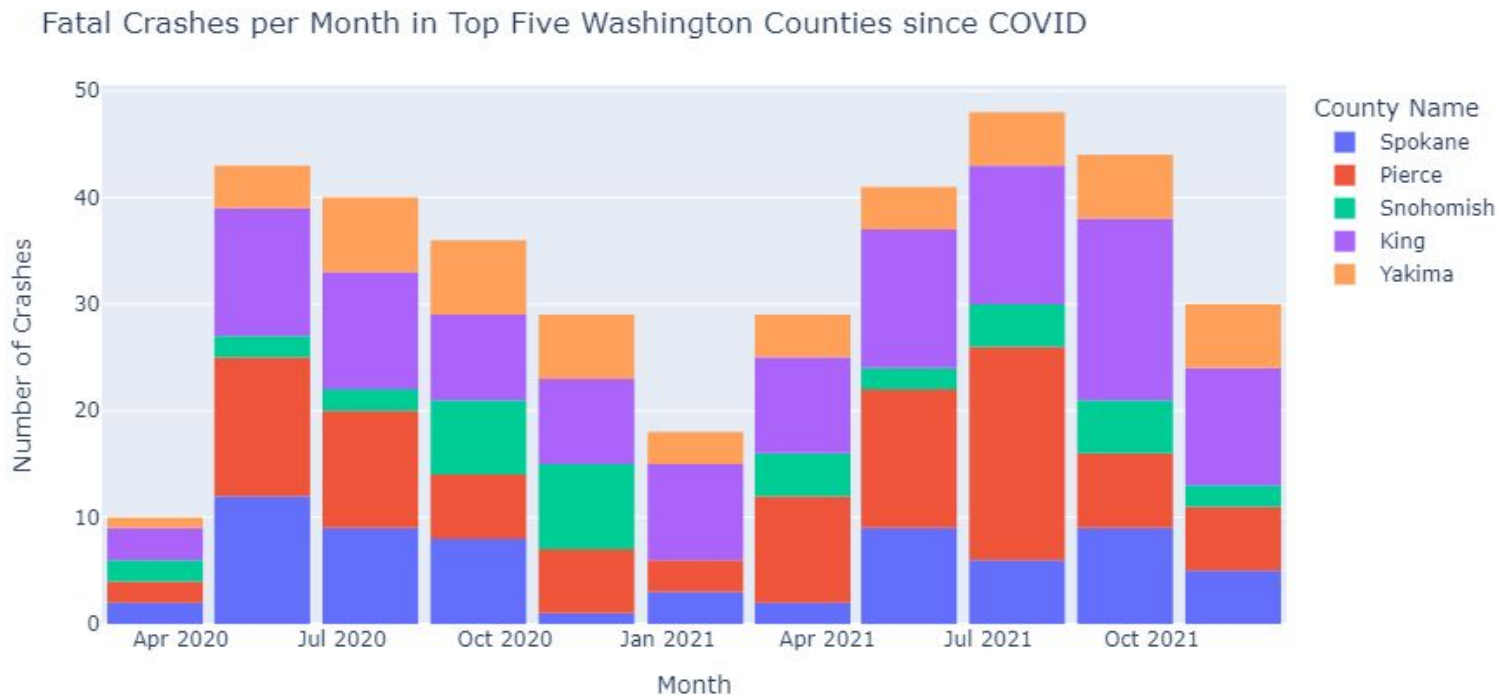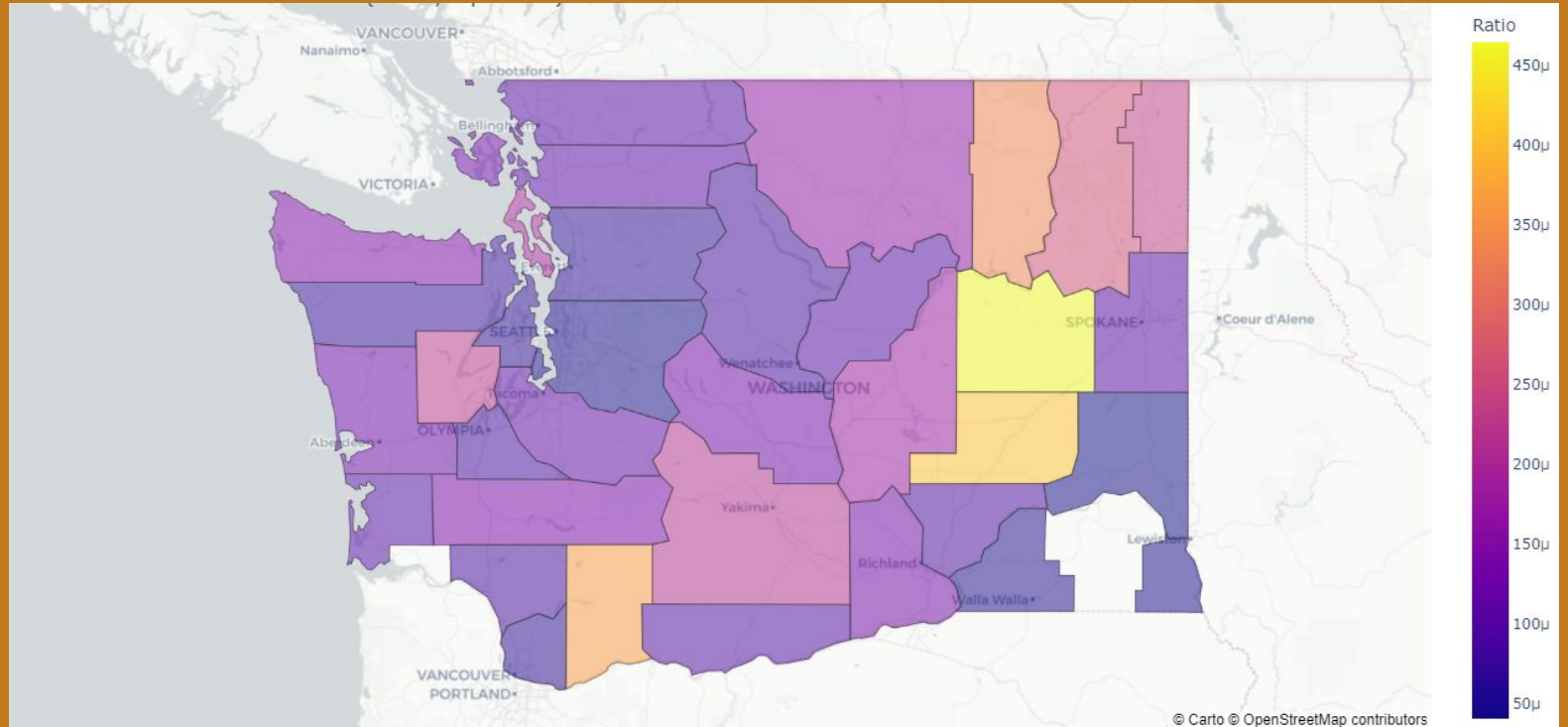 - Easier to mark up and organizes the code well

Visualization

Plotly Histogram: Crashes per Month
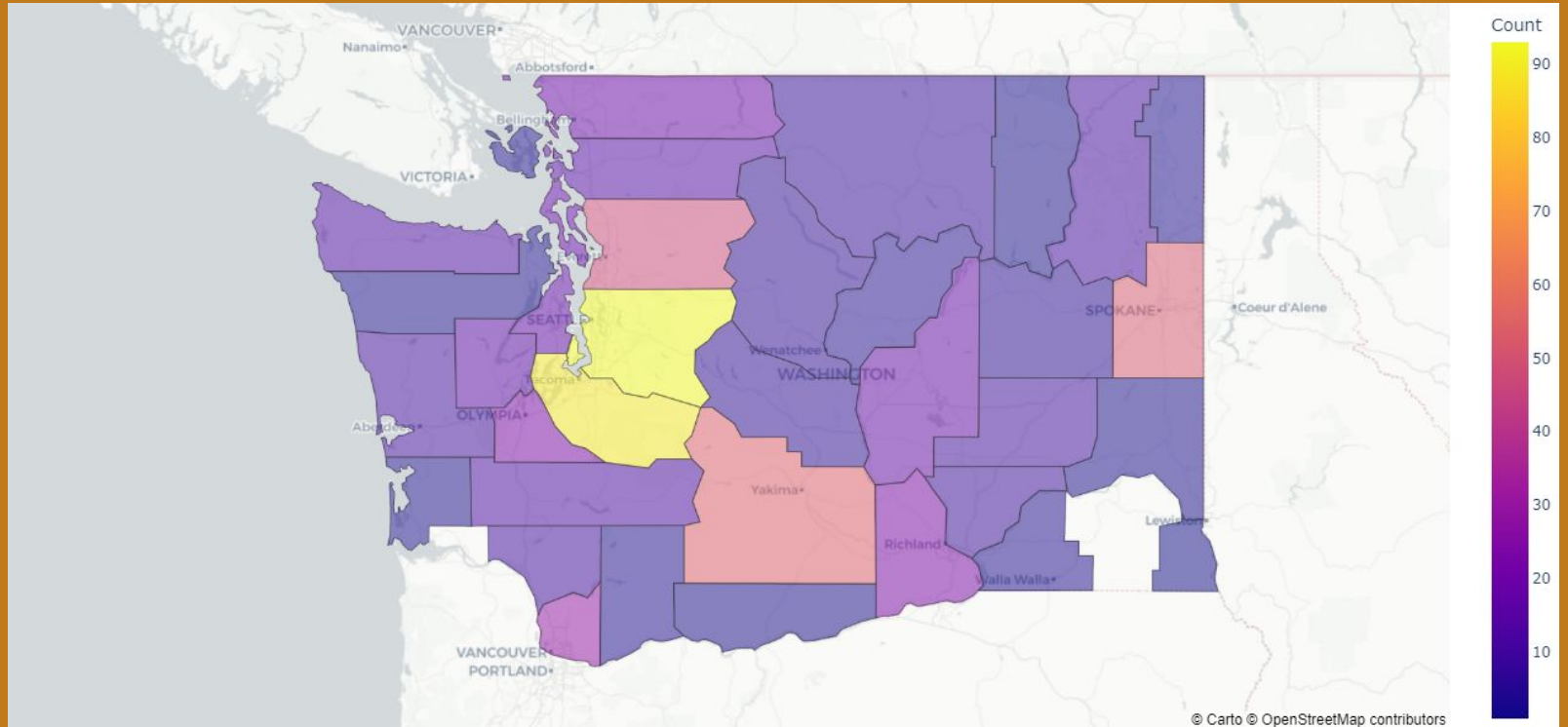

Fatal Crashes per Month in Washington State since COVID

Plotly Histogram: Crashes per Month in Counties Producing Highest Number of Bad Drivers

Fatal Crashes per Month in Top Five Washington Counties since COVID

County Visual (Ratio)

County Visual (Count)

Conclusion and Findings

The top 5 counties with the highest rate of high-risk drivers:

- Stevens
- Skamania
- Adams
- Lincoln
- Ferry

These areas produced high-risk drivers at a higher rate...they are similar in the fact that they are:

- Closer to other state borders like Oregon and Idaho
- More rural parts of the state
- Lower population than other counties; less standardized roads

For the fatal crashes vs time graph:

- Fatal crashes decreased during the lockdown periods (March-April 2020 and Jan 2021)

- Increased during the summer time

Fatal Crashes per month in the top 5 counties:

- Dense areas like King County and Pierce also had high number of residents involved in fatal car crashes

Proposed Solution

- From our data, it seems to be that the main cause of fatal car crashes is the

  high-risk driver themselves: weather did not seem to be a factor in the crashes.

- We propose to add more drivers' education facilities, especially in the areas with

  the highest rate of residents classified as high-risk.

References

- https://plotly.com/python/mapbox-county-choropleth/
- https://plotly.github.io/plotly.py-docs/generated/plotly.express.choropleth_mapbox.html
- https://stackoverflow.com/questions/45304531/extracting-the-first-day-of-month-of-a-datetime-type-column-in-pandas
- https://plotly.com/python/line-charts/