

Project-One

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Project Description/Outline

- We're in the relocation business. Having a hard time deciding where you would like to relocate? That's where the Personalized Relocation Helper (PRH) comes in!
- In this presentation we will provide insight into the three categories people often consider when moving to a new place:
 - Crime
 - Housing Prices
 - Points of Interest

A teal speech bubble graphic with a white border, containing the text 'Data Collection' and 'Sources, Cleanup and Exploration'. The bubble has a small tail pointing downwards and to the left. The background features a light gray pattern of concentric circles and dashed lines.

Data Collection

Sources, Cleanup and Exploration

Our Data



Sample of 10 states: California, Michigan, Texas, Colorado, North Carolina, Maine, Montana, Iowa, Oregon, and Illinois



Crime data: categorized by violent and non-violent crimes between 2018-2020



Housing Prices: median price of housing for each state between 2018-2020



Points of Interest: planetariums, dog friendly places & vegan food

Data: Crime

The crime data was collected using the [FBI Crime Data Explorer API](#)



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graph TD; A[The crime data was collected using the FBI Crime Data Explorer API] --> B[The API retrieves data on several types of crime (where a charge was made) in each state from 2018-2021]; B --> C[The crimes were then sorted into violent and non-violent categories and then totaled]; C --> D[We then used the Wikipedia List of U.S. states & territories by population page to collect population for each state of interest and captured on a DataFrame]; D --> E[The population and crime DataFrames were merged and adjusted per capita (100,000)];
```

The API retrieves data on several types of crime (*where a charge was made*) in each state from 2018-2021

The crimes were then sorted into violent and non-violent categories and then totaled

We then used the Wikipedia [List of U.S. states & territories by population](#) page to collect population for each state of interest and captured on a DataFrame

The population and crime DataFrames were merged and adjusted per capita (100,000)

Data: Housing



The housing price data is collected from a csv file on the [Zillow Research Data](#) website



The data was narrowed to only include 2018-2022 data for the 10 states of interest



Interpolate was used to get the average of adjacent cells in a State row when there was an absent value



The median house price for each year by state was then calculated

Data: Point of Interests

Using [GeonamesCache](#), a list of cities (pop. >15000) in each of the states of interest generates



Then, [Geoapify](#) searches for Planetariums, places where dogs are allowed, and places where you can get vegan food within a 5 mile radius of each city



The data is then adjusted per capita (1,000,000) to provide a more accurate comparison between states



The Wikipedia [List of U.S. states and territories by population](#) site is used to collect the population for each state of interest



The population for each state is captured on a DataFrame and then merged with the DataFrame containing POIs in states of interest



The data is then adjusted per capita (100,000) to provide a more accurate comparison between states

The background of the slide features a series of concentric circles in a light gray color, some of which are solid and others dashed, creating a subtle pattern. In the center, there is a teal-colored speech bubble with a pointed bottom. Inside the bubble, the text "Questions & Visualizations" is written in a white, sans-serif font. Above the main bubble, there is a smaller, solid teal rectangular bar.

Questions & Visualizations

Crime

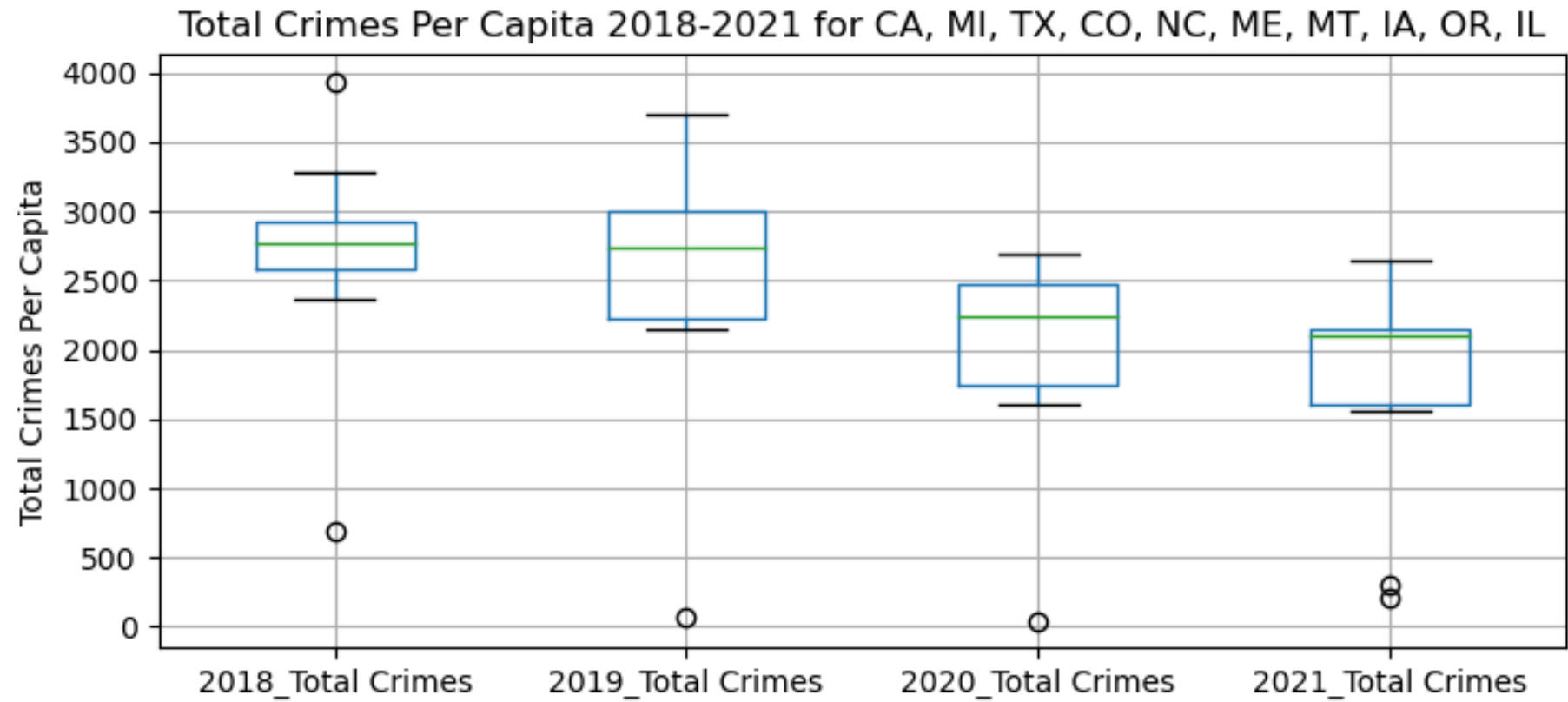
Q. 1: How does violent, non-violent and total crime compare across 2018-2021 for our states of interest?

The total number of crimes has decreased from 2018 to 2021 in most states

Some states have vastly different crimes rates

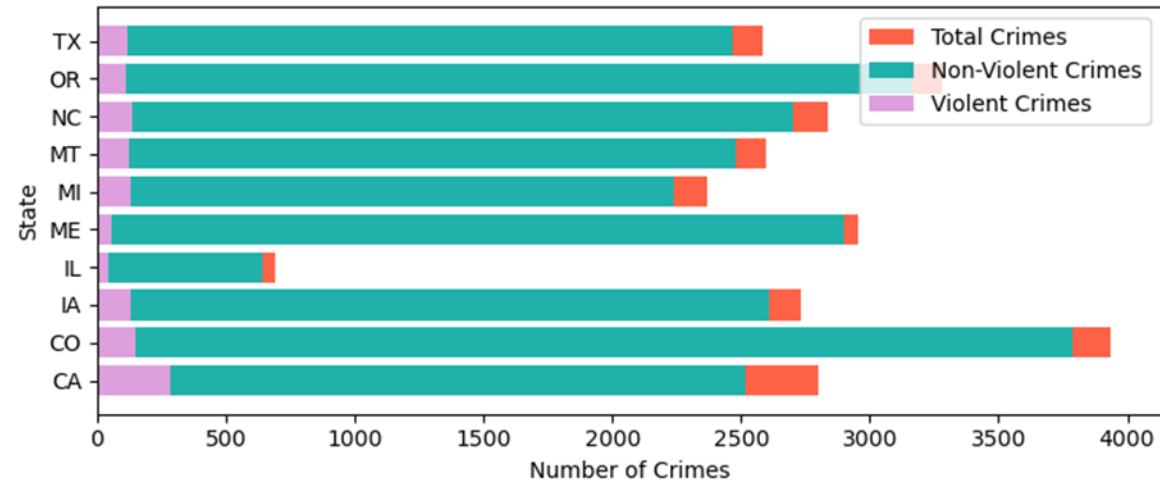
- These are crimes where charge was made
- It does not include reported or undocumented crimes.

Crime Visualization

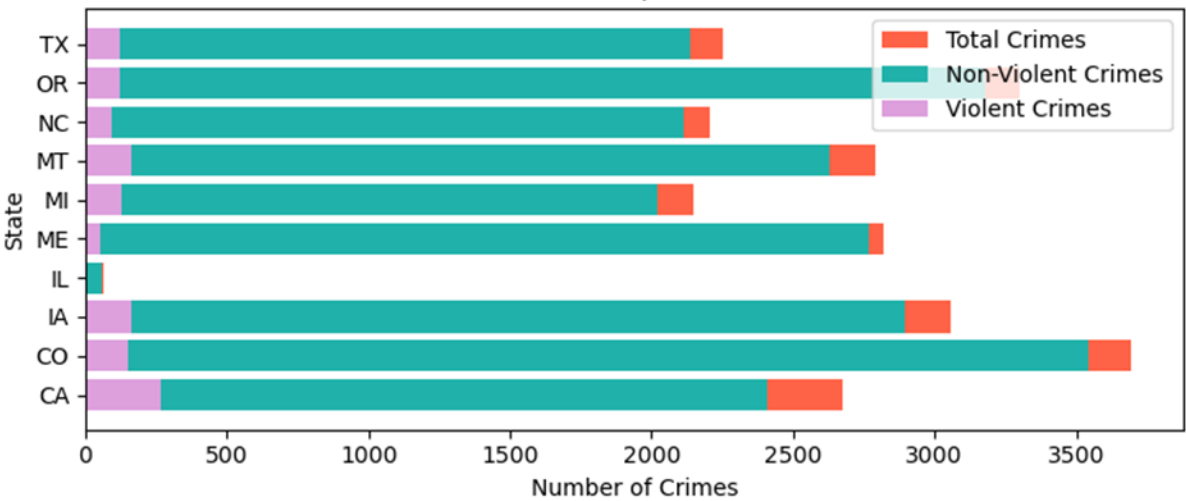


Crime Visualization

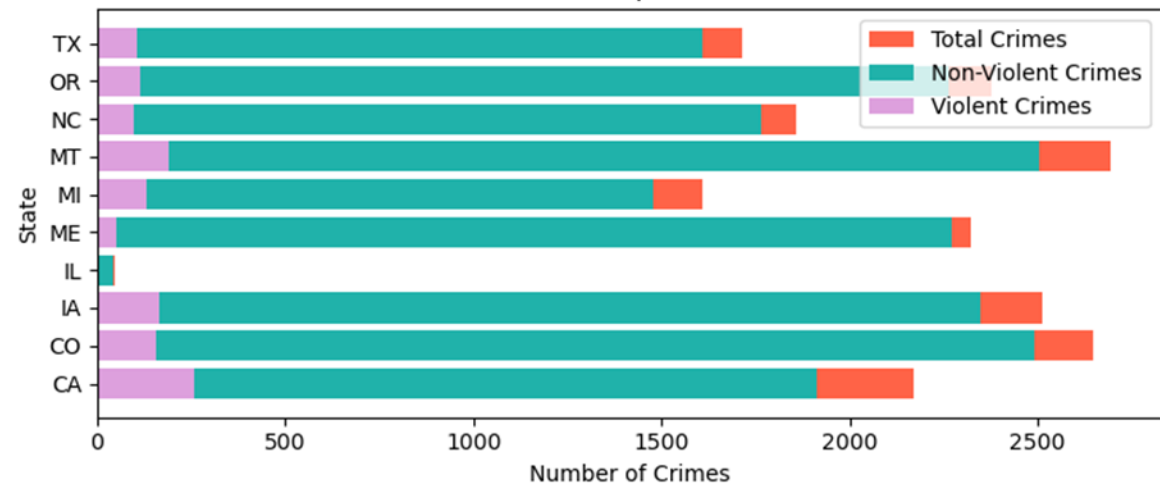
Crime Per Capita in 2018



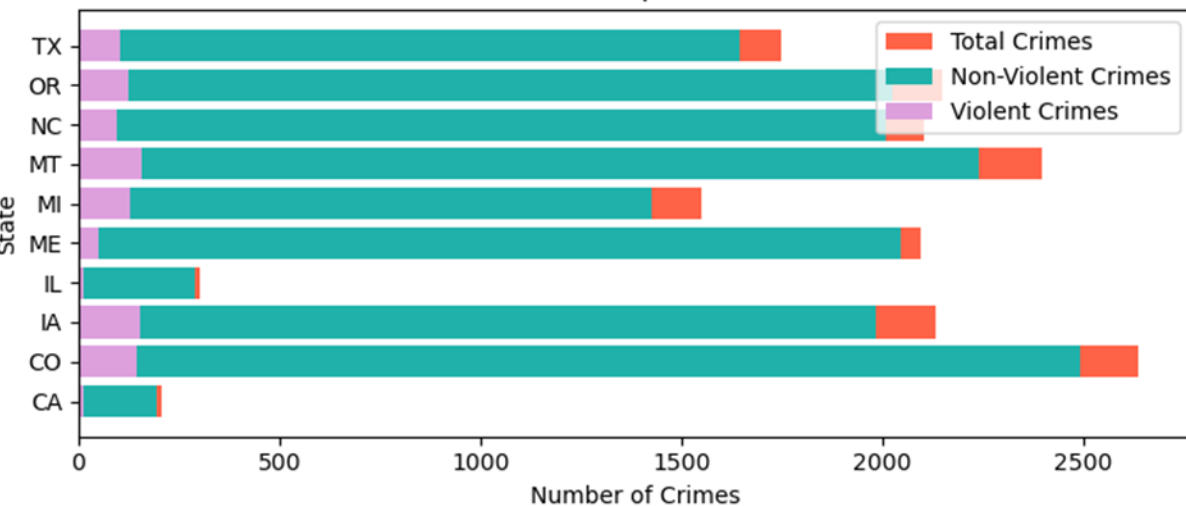
Crime Per Capita in 2019



Crime Per Capita in 2020



Crime Per Capita in 2021

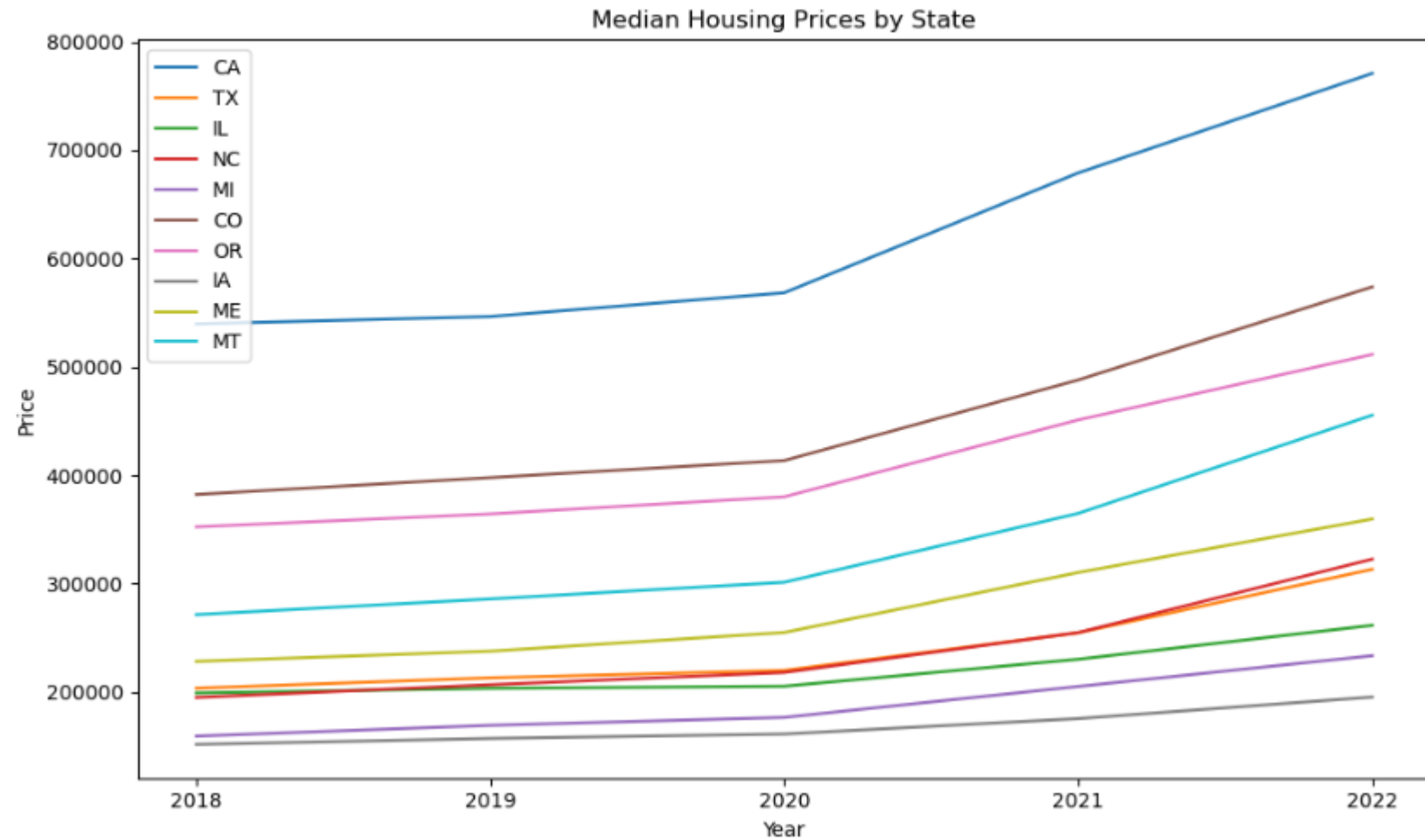


Housing

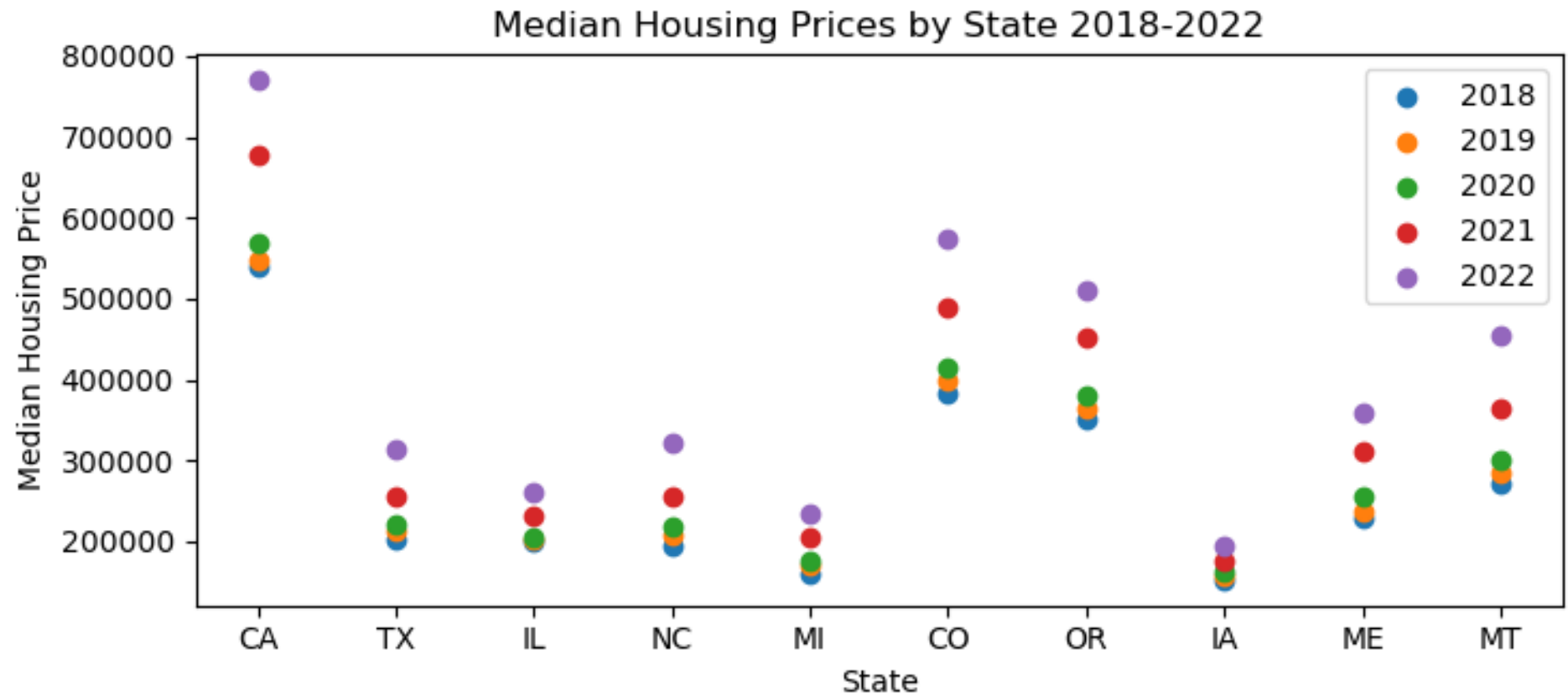
Q. 1: How does violent, non-violent and total crime compare across 2018-2021 for our states of interest?

Housing prices have gone up over time across the states, with a slow down in 2020 before seeing a steeper incline

Housing Visualization



Housing Visualization

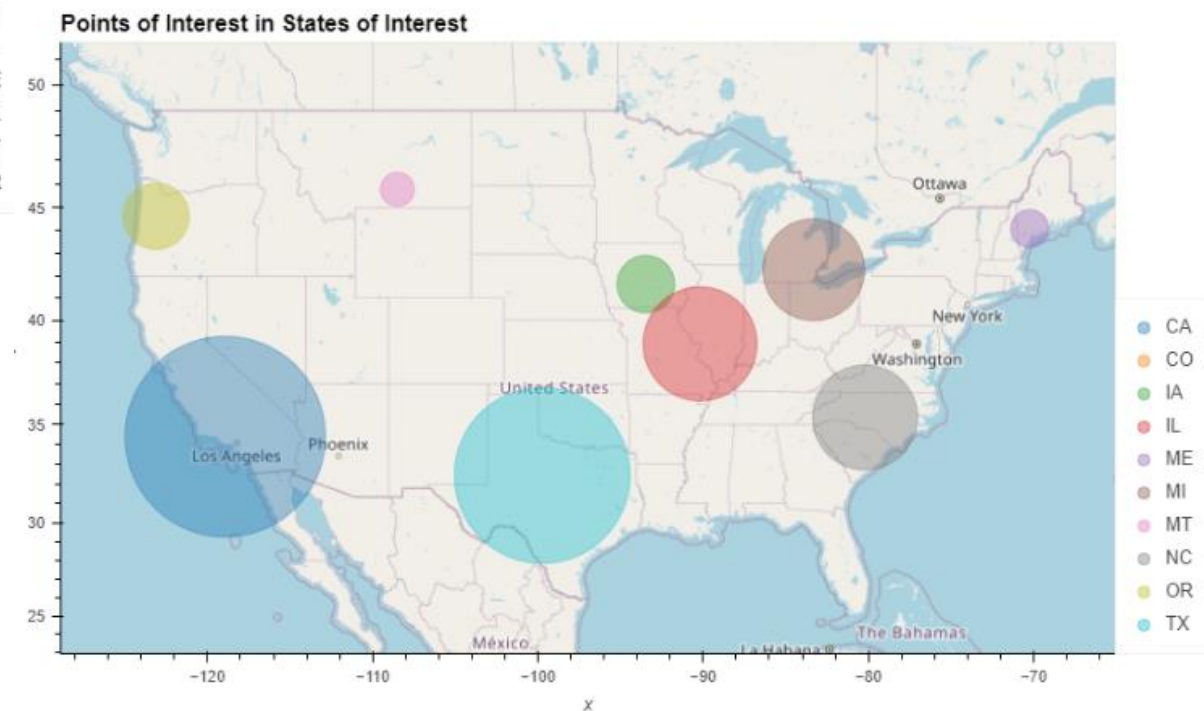
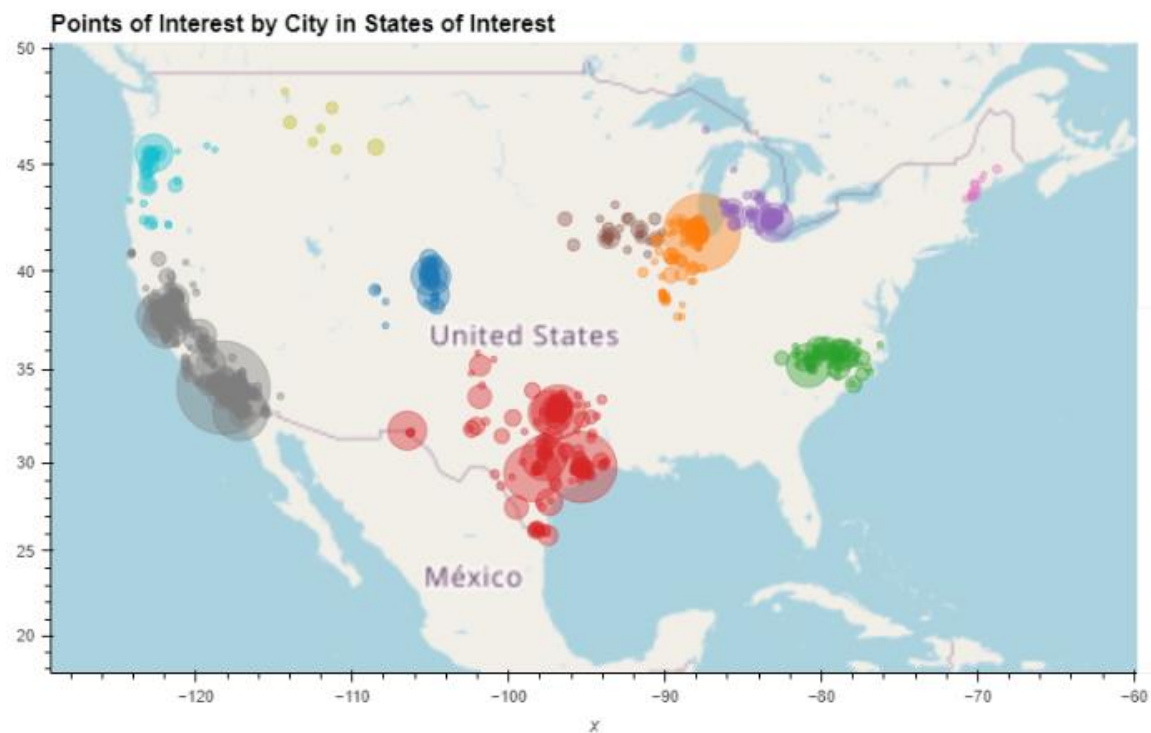


Points of Interest

Q. 1: Where can I find the points of interest in our states of interest on a map by city and state?

Points of interest were displayed in an interactive map by city and by state in states of interest.

Points of Interest Visualization



Points of Interest

Q. 2: What states have the most Planetariums, Dog Friendly places and Vegan Food Places per capita?

Illinois has the most Planetariums per capita

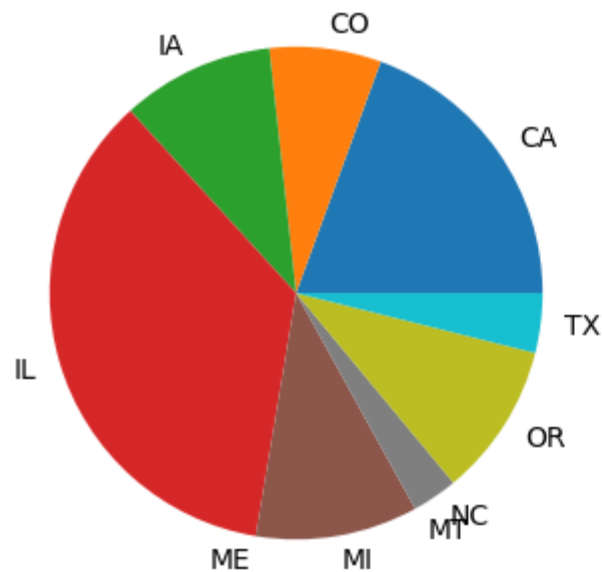
Maine has the most Dog Friendly Places per capita at 102.50 though Colorado is close behind with 98.97

Oregon has the most Vegan Food Places at 87.49 though Illinois isn't too far behind with 80.67

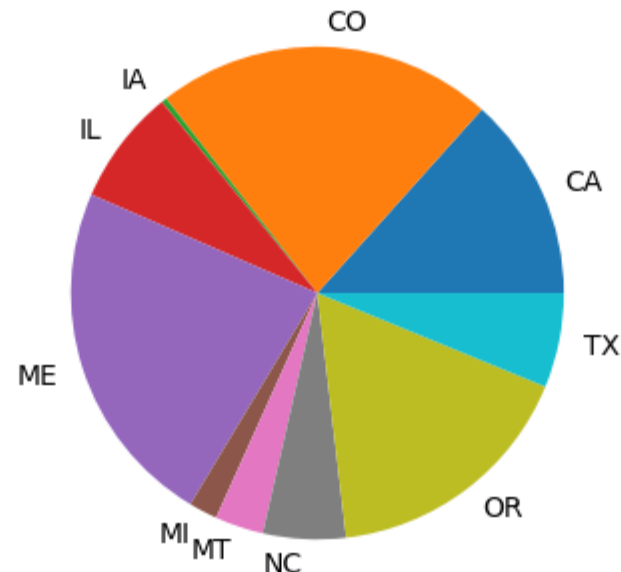
Points of Interest Visualization

Points of Interest per Capita by State of Interest

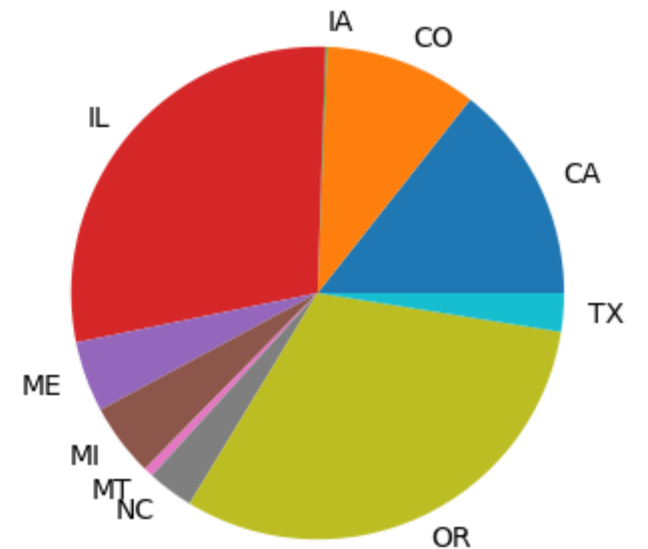
Planetariums per Capita



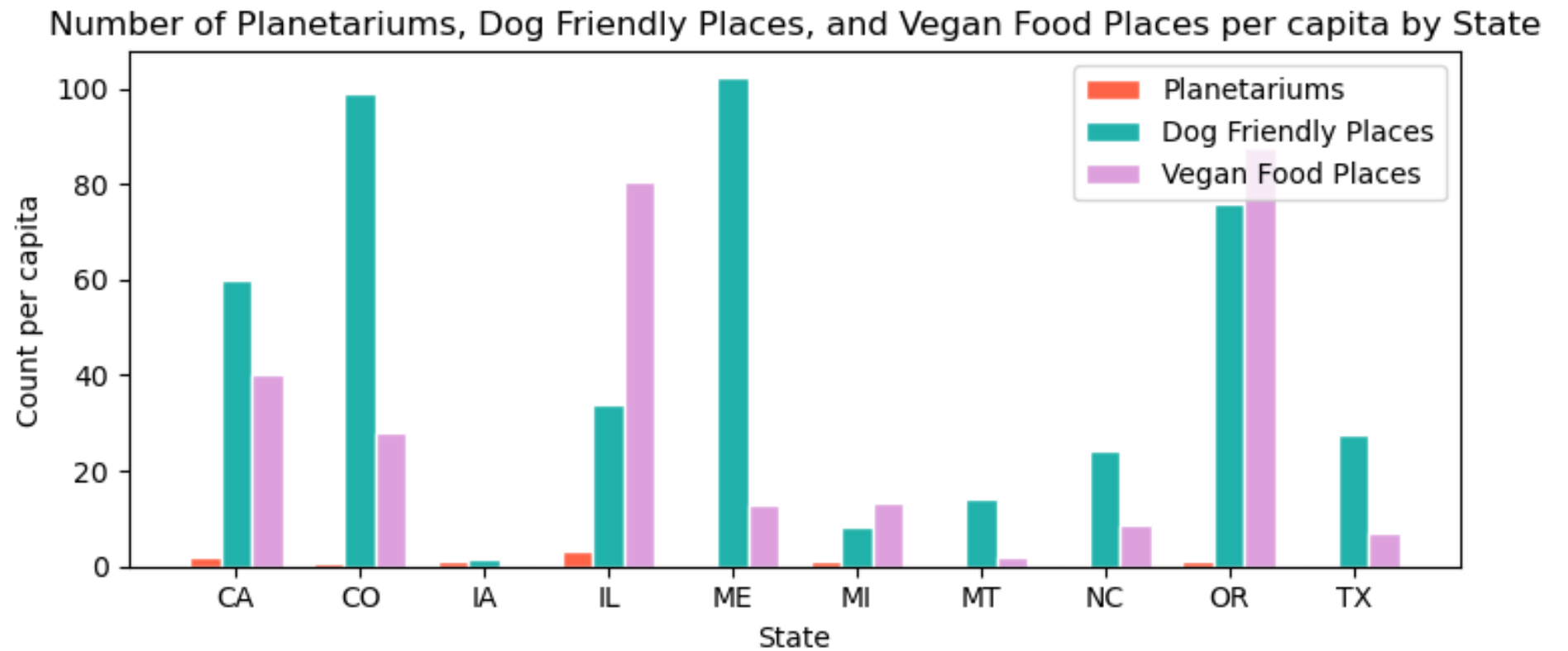
Dog Friendly Places per capita



Vegan Food Places per Capita



Points of Interest Visualization



Comparison

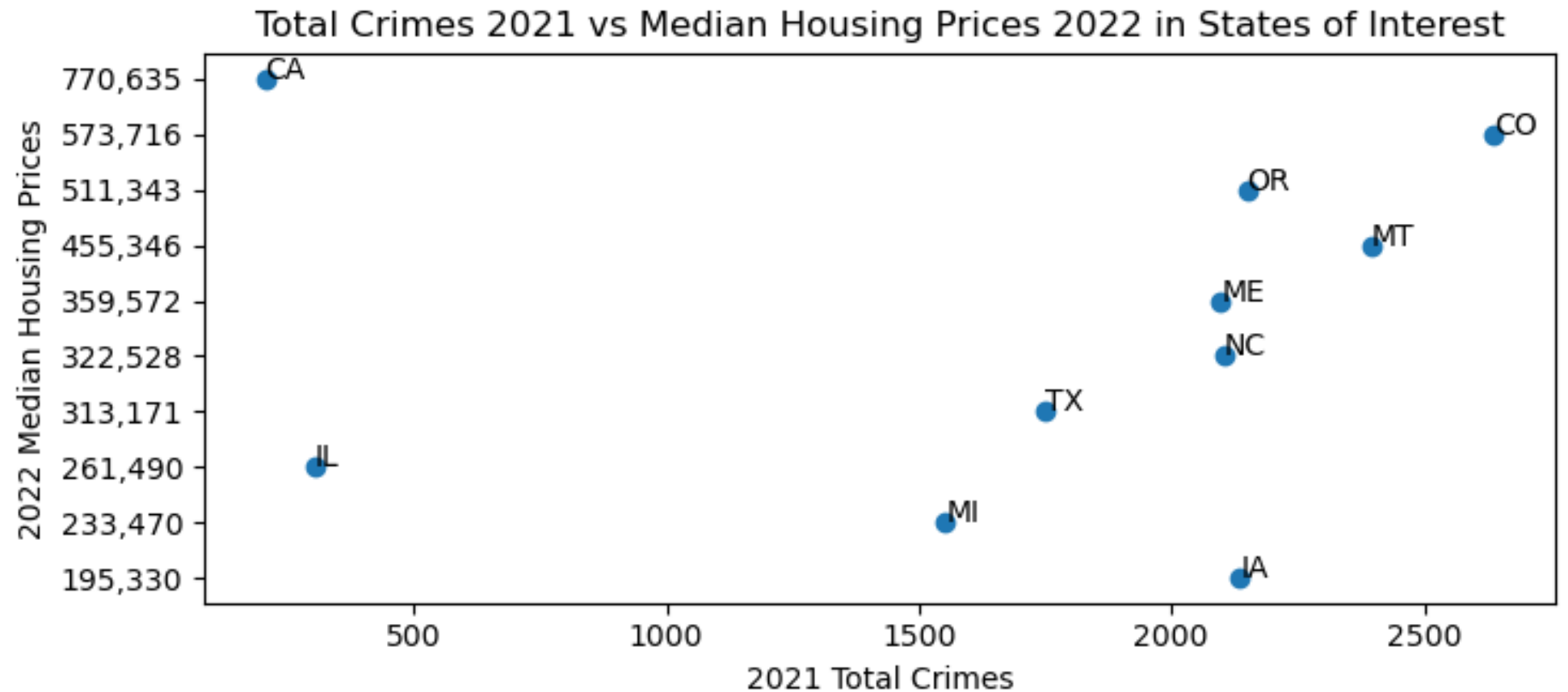
Q. 1: How can our demo client compare across these points of data?

Comparing the most recent data for Crime (2021) and Median Housing Prices (2022) by State of Interest

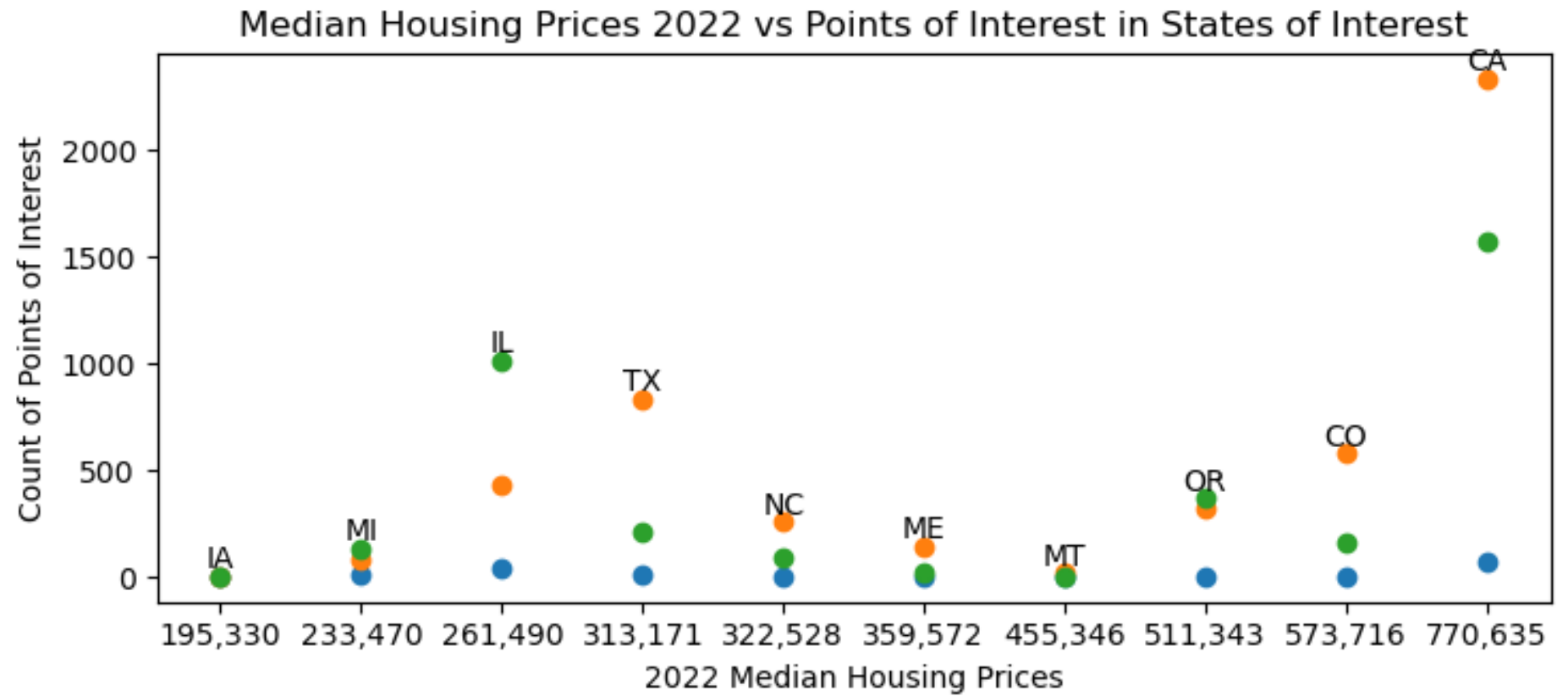
Comparing the most recent data from Median Housing Prices (2022) and POI by State of Interest

Comparing the most recent data for Crime (2021) and POI by State of Interest)

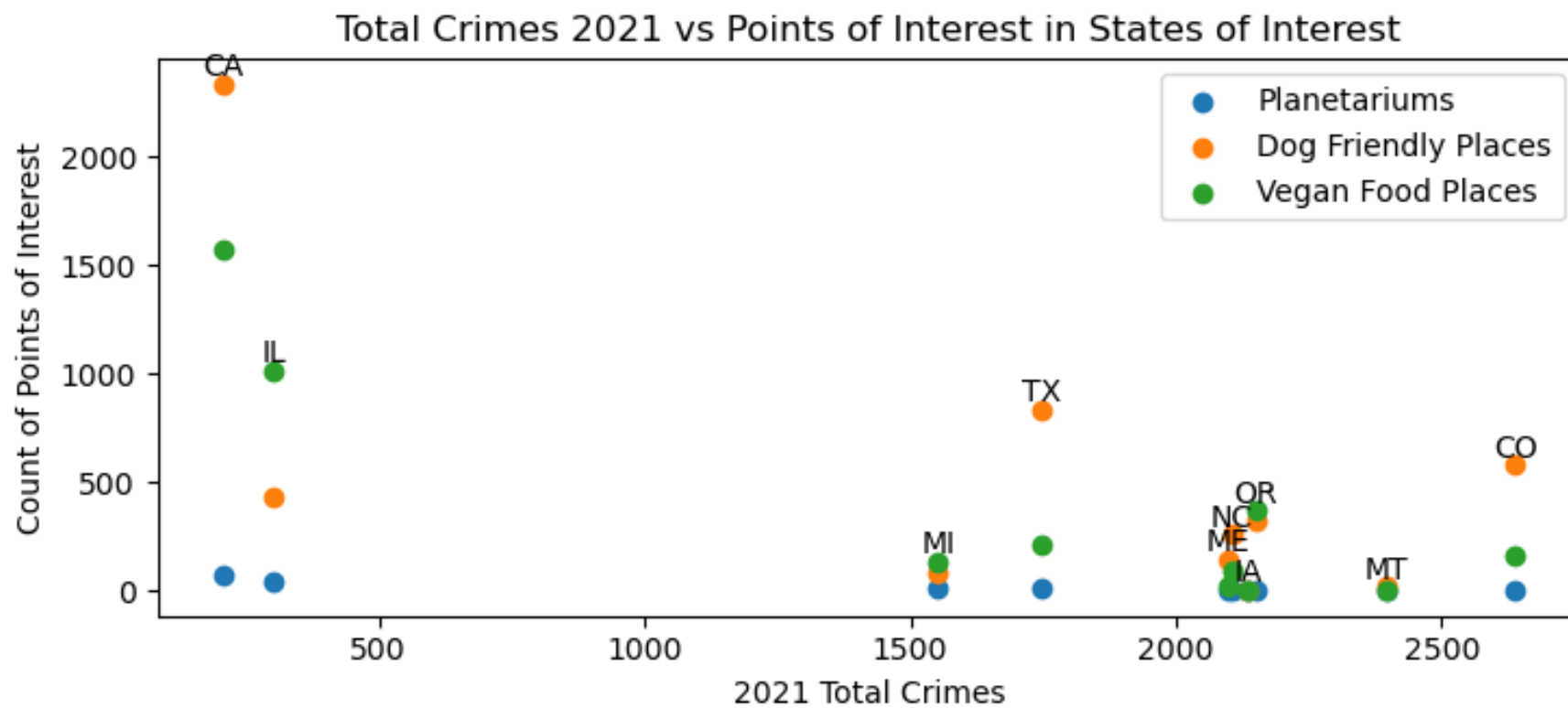
Comparative Visualization



Comparative Visualization



Comparative Visualization





Limitations

- Ability to more easily make selections for states of interest and points of interest to broaden its usefulness
- Current crime data is limited by state and is unavailable to be pulled by city without proper authorization
- Crime data only includes crime where a charge was made
- Not all law enforcement agencies provide data or do so timely.
- There are some duplicated POIs due to the radius overlapping at times between cities and counting some POI more than once



Thank You

Questions?