MINORITY DEMOGRAPHICS (BLACK, ASIAN, HISPANIC/LATIN)

Population Information for Top 40 Polulated Cities and Corresponding Regions
Source: [US 2020 Census](#)
Jupyter Notebooks: [Google Drive](#)
- HC_Poli_EDA.ipynb

Findings:

For total population estimate number for the Top 40 Cities:
- West has the most people, followed by Northeast, Southwest, Midwest, and then Southeast
- New York has a significantly larger population, followed by Los Angeles, Chicago, Houston

For minority populations in the Top 40 Cities:
- Total Sum of Black, Asian, and Hisp/Lat
  - The Northeast has the largest sum closely followed by the West then Southwest, Midwest, and finally Southeast
- Total Minority Percentages
  - The West closely followed by the Southwest have the largest total percentage of minorities
  - Detroit and El Paso had the highest totals for total minority percentages
- Black Percentages
  - The Northeast has a larger percentage of Black people than any other race/ethnicity
  - West had the lowest percentage of Black people
  - Highest percentages of Black people: **Detroit*** -> Memphis* -> Baltimore* -> Atlanta* -> Washington* -> Philadelphia* -> Milwaukee* -> Charlotte -> Jacksonville -> Chicago
    (asterisk indicates where they are the highest minority percentage compared to the other two)
  - Lowest percentage of Black people: San Jose* -> Albuquerque -> El Paso -> Mesa -> San Francisco ->Tucson -> Portland -> San Diego -> Colorado Springs -> San Antonio

(asterisk indicates where they are the lowest minority percentage compared to the other two)

- Hisp/Lat Percentages
  - The Southwest had a larger percentage of Hisp/Lat people than any other race/ethnicity
  - Hispanics were the lowest percentage of minorities in the Southeast
  - Highest percentages of Hisp/Lat people: **El Paso*** -> San Antonio* -> Fresno* -> Albuquerque* -> Los Angeles* -> Houston* -> Tucson -> Phoenix -> Dallas* -> Fort Worth
    (asterisk indicates where they are the highest minority percentage compared to the other two)
  - Lowest percentage of Hisp/Lat people: Atlanta -> Baltimore -> Louisville -> Columbus -> Seattle -> Memphis -> Detroit ->Portland -> Jacksonville -> Nashville
    (asterisk indicates where they are the lowest minority percentage compared to the other two)
- Asian Percentages
  - Lowest percentage in all regions than any other minority, except in the West where Black is the lowest percentage
  - Highest percentages of Asian people: **San Jose*,** San Francisco, Sacramento, San Diego, Seattle, New York City, Fresno, Los Angeles, Boston, Portland
    (asterisk indicates where they are the highest minority percentage compared to the other two)
  - Lowest percentage of Asian people: El Paso* -> Memphis* -> Detroit* -> Mesa* -> Baltimore* -> Louisville* -> San Antonio* -> Albuquerque* -> Colorado Springs* -> Tucson*
   (asterisk indicates where they are the lowest minority percentage compared to the other two)

EDA Method:

Took Census data that contained population estimate and demographic percentages of race/ethnicity

- Filtered for Top 40
- Created features for total minority estimated population, total minority percentage (ratio), and each demographic's population estimate and percentage of the total population for the top 40 cities
- Did various groupby functions with city, region, and the different representations of population and population ratios with functions like .sum() and .sort_values to get the top 10.

# Population Estimates (Total and Total Minority) for Top 40 Cities and Region

Population Est. and Minority Pop. Est. of Top 40 Cities
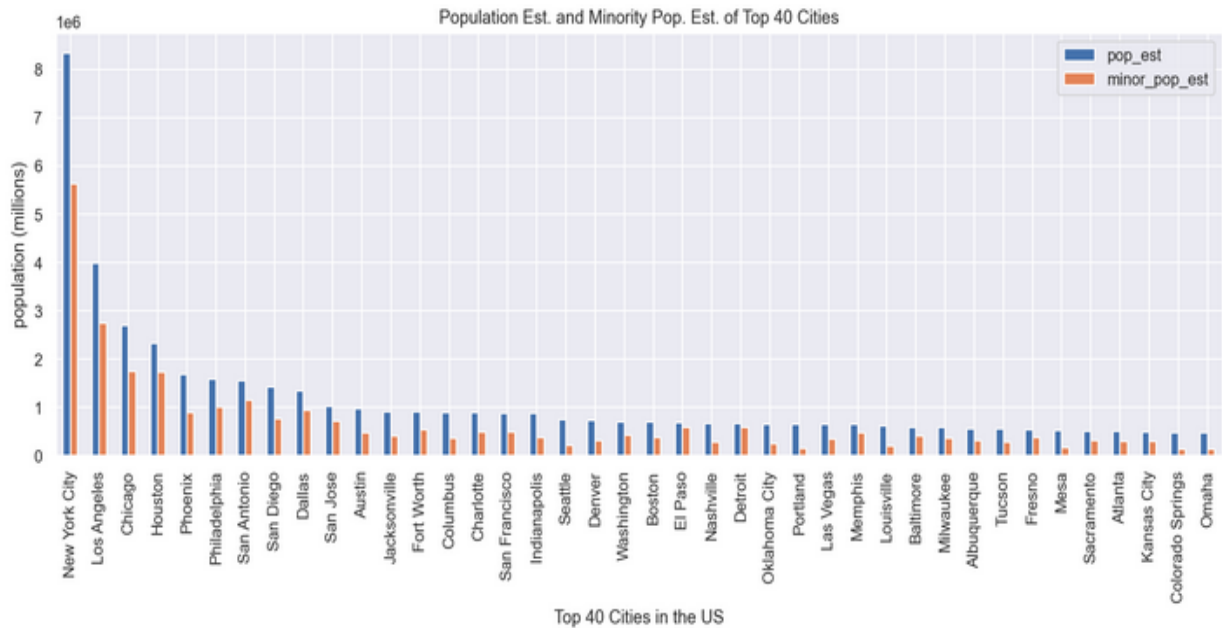
```
In [165]: pop_region_plot = top_df.groupby("region")[["pop_est", "minor_pop_est"]].sum().sort_values(by=['pop_est'], ascending
          pop_region_plot.plot.bar(figsize = (15,5))
          plt.xlabel("Top 40 Cities by Region in the US")
          plt.ylabel("population (millions)")
          plt.title("Population Est. and Minority Pop. Est. of Top 40 Cities by Region");
```


Population Est. and Minority Pop. Est. of Top 40 Cities by Region

Population Estimates of Total Pop, Total Minorities, White, Black, Asian, and Hisp/Lat by Region and Top 10 Cities (for graph visibility)

Population Est., Minority Est., and Demographics Est. of Top 40 Cities by Region
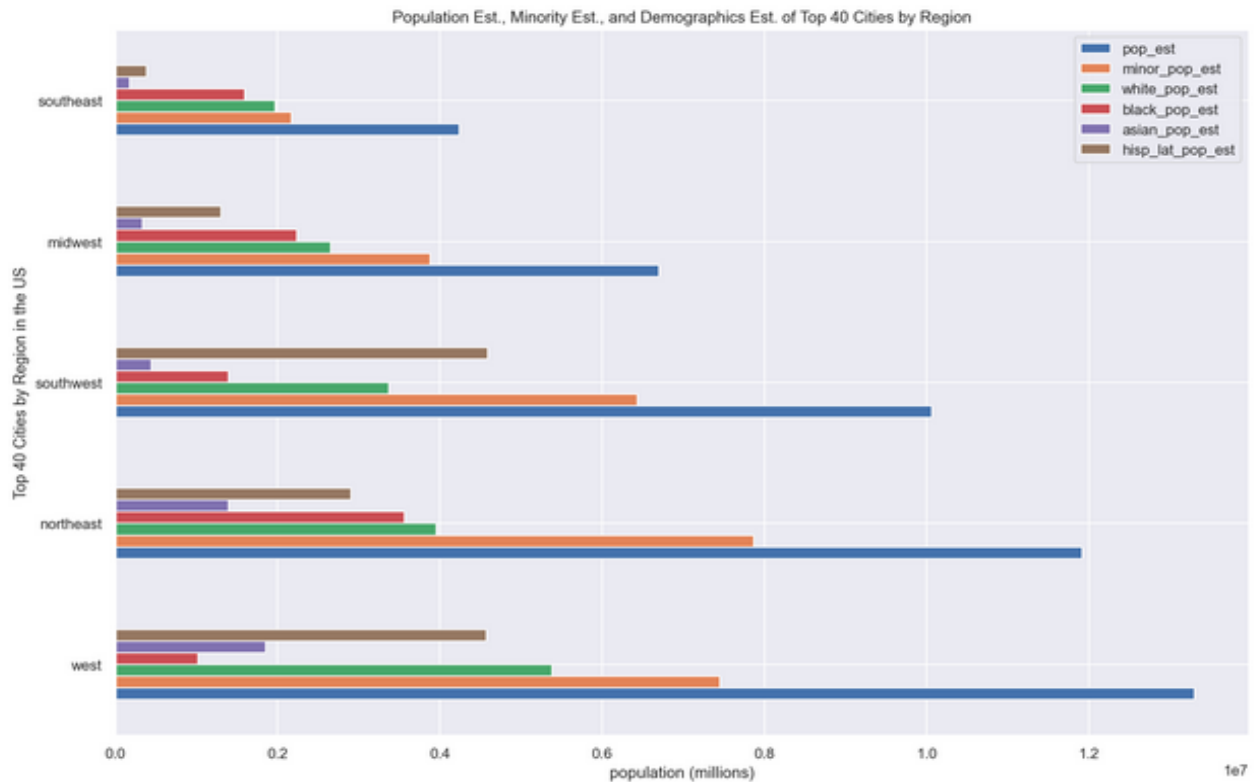
```
[169]: pop_demo_plot = top_df.groupby("city")[["pop_est", "minor_pop_est", "white_pop_est","black_pop_est","asian_pop_est",
       pop_demo_plot.plot.bar(figsize = (20,5))
       plt.xlabel("Top 10 Cities by Region in the US")
       plt.ylabel("population (millions)")
       plt.title("Population Est., Minority Est., and Demographics Est. of Top 10 Cities");
```


Population Est., Minority Est., and Demographics Est. of Top 10 Cities
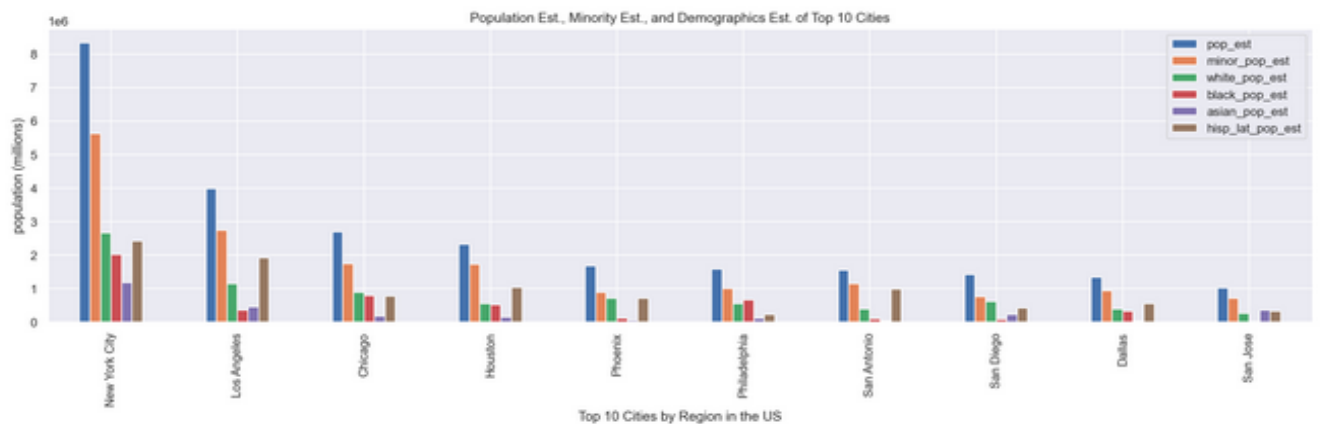
Total Minority Out of Total Population Percentage for Region and Top 40 Cities

Minority Population Ratio of Top 40 Cities by Region


```
ratio_city_plot = top_df.groupby("city")["minor_pop_ratio"].sum().sort_values(ascending = False)
ratio_city_plot.plot.bar(figsize = (15,5))
plt.xlabel("Top 40 Cities in the US")
plt.ylabel("Minority Population Ratio")
plt.title("Minority Population Ratio of Top 40 Cities");
```

Minority Population Ratio of Top 40 Cities
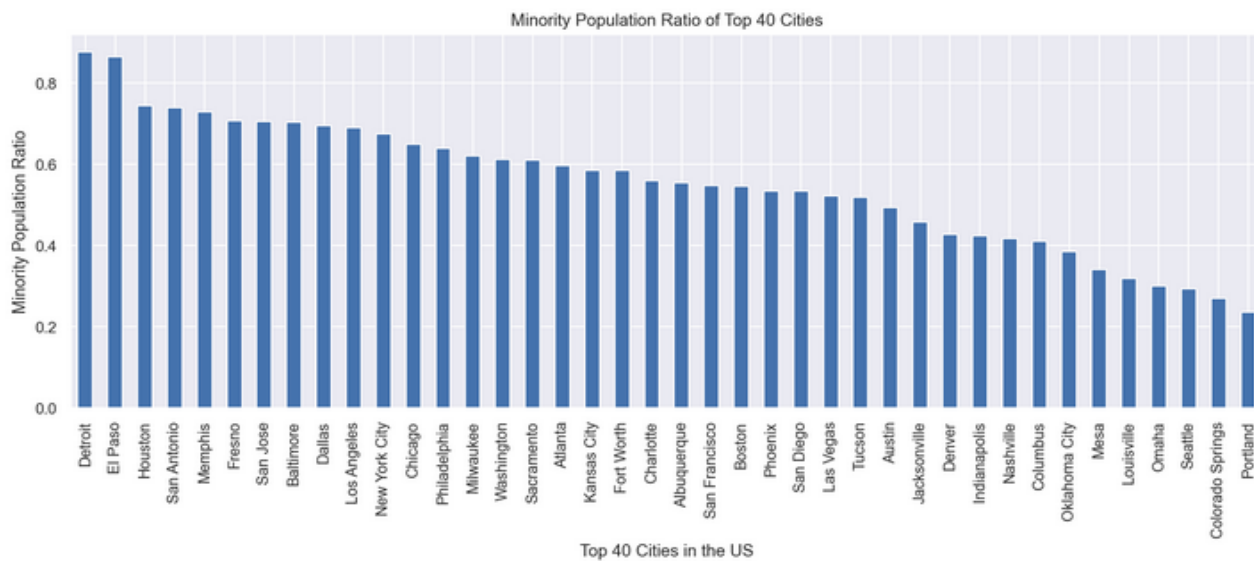
Population Percentages Broken Down by Demographic for Region and Top 10 Cities (for graph visibility)

Minority Population Ratio by Demo of Top 40 Cities by Region

```
[159]:  dem_ratio_city_plot = top_df.groupby(["city","pop_est"])[["white_pop_ratio", "black_pop_ratio", "asian_pop_ratio", "
        dem_ratio_city_plot.plot.bar(figsize = (15,5))
        plt.xlabel("Top 10 Cities in the US")
        plt.ylabel("Minority Population Ratio by Demo")
        plt.title("Minority Population Ratio by Demo of Top 10 Cities");
```


Minority Population Ratio by Demo of Top 10 Cities
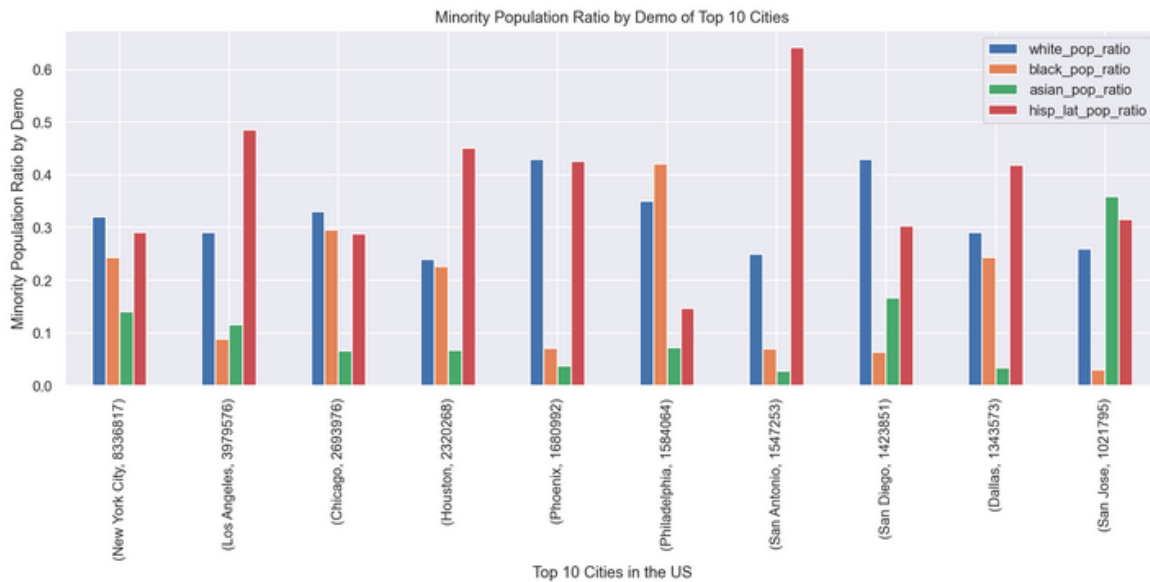
HATE CRIMES

Source: [2019 FBI Hate Crime Database](#)
Jupyter Notebooks: [Google Drive](#)
- HC_Poli_EDA.ipynb
- Crime_Cleaning.ipynb

Method:

- I took the cleaned database that I had for hate crimes by top 40 city and did a couple groupbys for the bar charts (groupby city and groupby region) along with the sum of hate crimes.

- For the correlation I took the ratio of minority population / total population for each city and ran a correlation function on that number and the number of hate crimes, per city.

Findings:

A large majority of victims from hate crimes in 2019 occured in the West part of the country:
- Seattle being much larger than any other city (this could be due to a single event, that had a lot of victims)
- Seattle -> Los Angeles -> Boston -> Phoenix -> Washington D.C. -> NYC -> Denver -> Columbus -> San Francisco -> Detroit

FBI Hate Crimes Victims of Single-bias Incidents in 2019 by Top 40 Cities
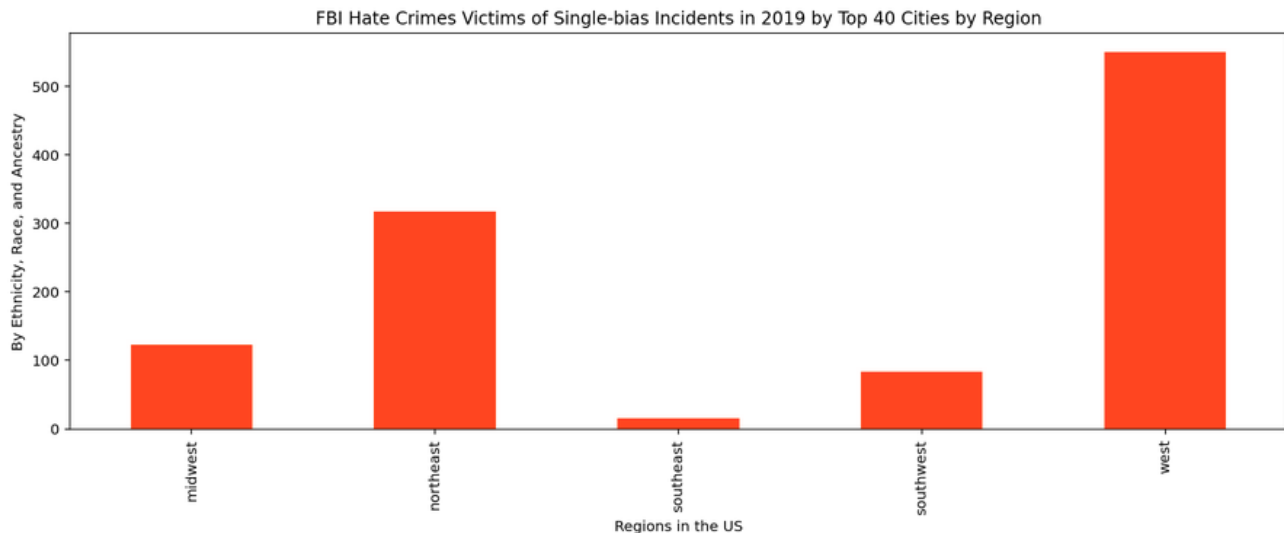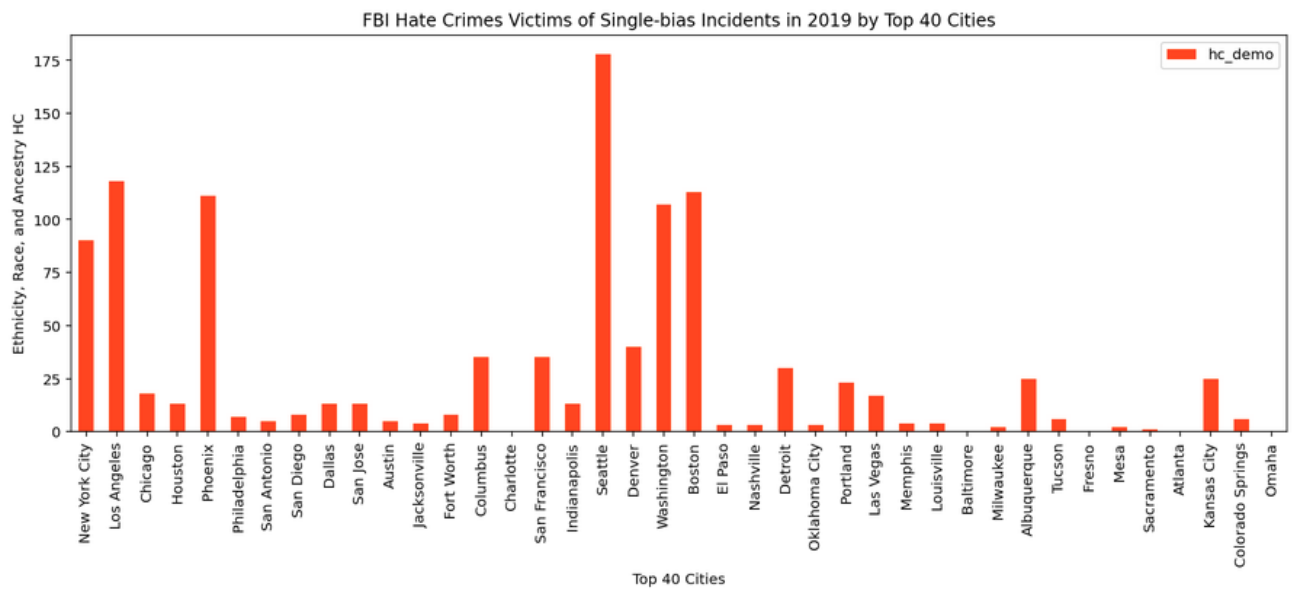
There is a negative correlation (~0.028896) for percentage of total minorities to hate crime victim counts meaning larger percentages of total minorities in a city correlate with less hate crime victims.

Out[111]:

	minor_pop_ratio	hc_demo
minor_pop_ratio	1.000000	-0.028896
hc_demo	-0.028896	1.000000

In [113]: `minor_hc_corr.plot.line();`
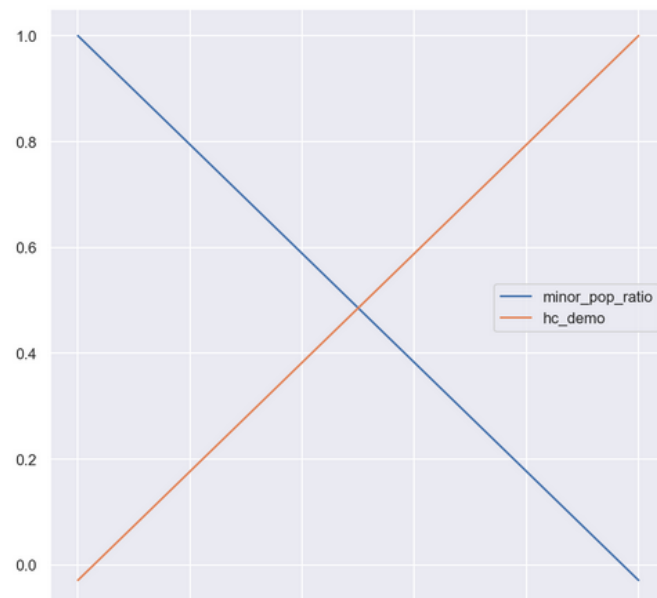
POLITICAL PARTIES
(MAYOR, GOVERNOR, STATE)

Source: [2018 House of Representatives](#) | [2020 Senate](#) | [2021 Mayors](#) | [2021 Governors](#)
Jupyter Notebooks: [Google Drive](#)
- HC_Poli_EDA.ipynb
- Political_Cleaning.ipynb

Findings:

- Out of the top 40 cities:
  - Mayors are mostly Democratic
  - Governors are mostly Republican but close to even with Democrat
  - and Congress is mostly Democrat
- Regionally for the top 40 cities:
  - Northeast has all Democrat mayors, Southwest has most of the Republican mayors
  - West has a large majority of Democrat governors, Southwest has a large majority of Republican governors, Northeast has an even amount of Democrat and Republican governors
  - West and Northeast have all Democrat majority states in Congress; Southwest, Southeast, and Midwest have all Republican majority states in Congress

Method:

- I took a cleaned database with the top 40 cities which had features categorizing the political party for the mayor, governor, and congress majority for each city.
- For the count graphs: I took the city and grouped by the political party count for each type (mayor, governor, congress majority)
- For the regional graphs: I took the value_counts of the political party and grouped by the region for each type

Mayoral Party Counts for Top 40, Mayor Party Counts by Region

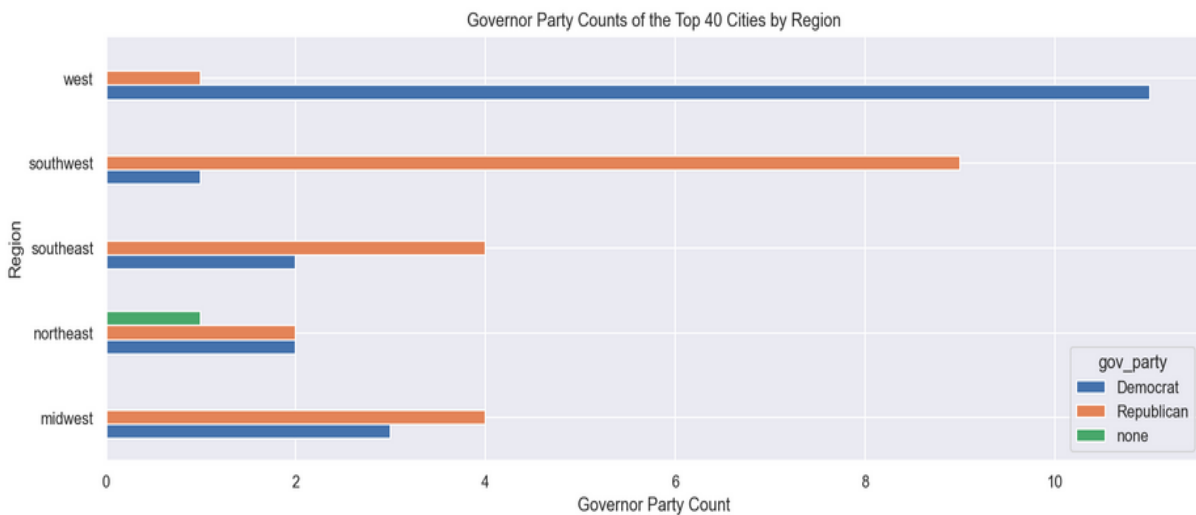Mayoral Party Counts of the Top 40 Cities
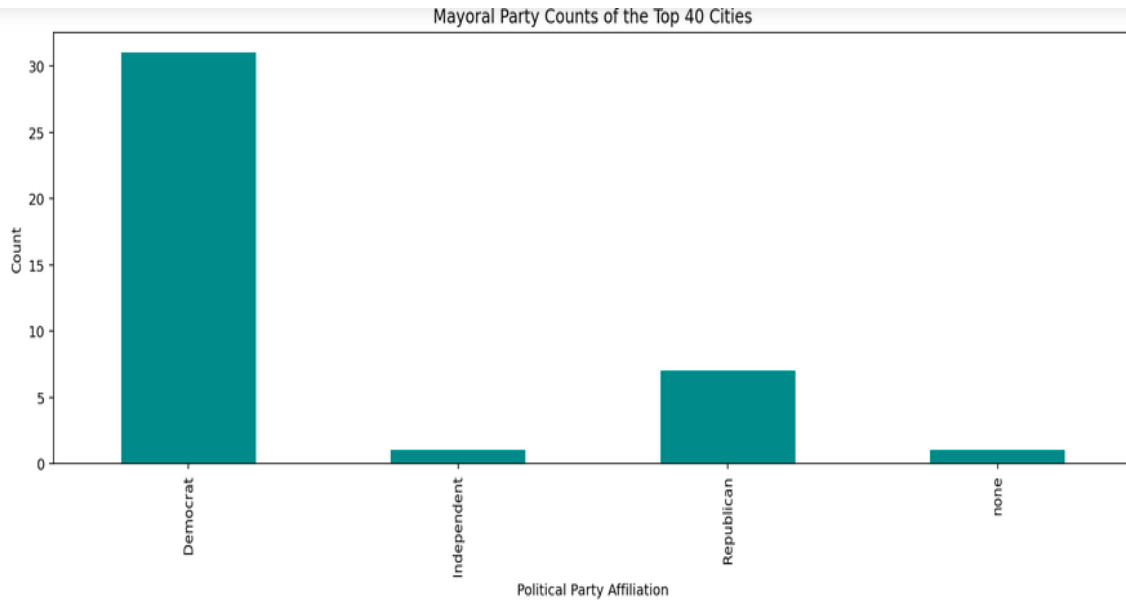
```
In [115]: mayor_region_plot = top_df.groupby("region")["mayor_party"].value_counts().unstack()
          mayor_region_plot.plot.barh(figsize = (15,5))
          plt.xlabel("Mayoral Party Count")
          plt.ylabel("Region")
          plt.title("Mayoral Party Counts of the Top 40 Cities by Region");
```
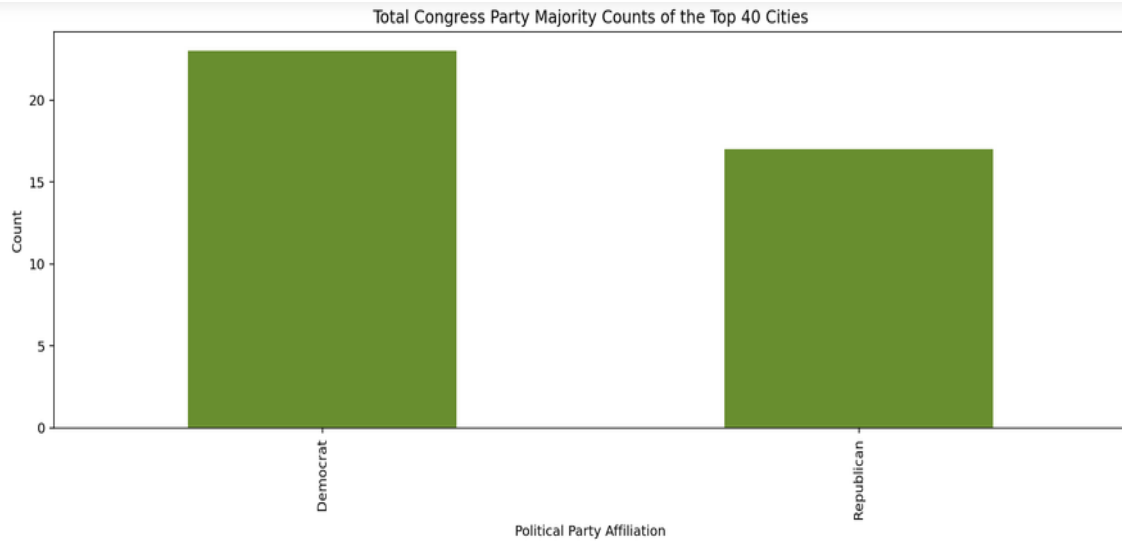

Mayoral Party Counts of the Top 40 Cities by Region
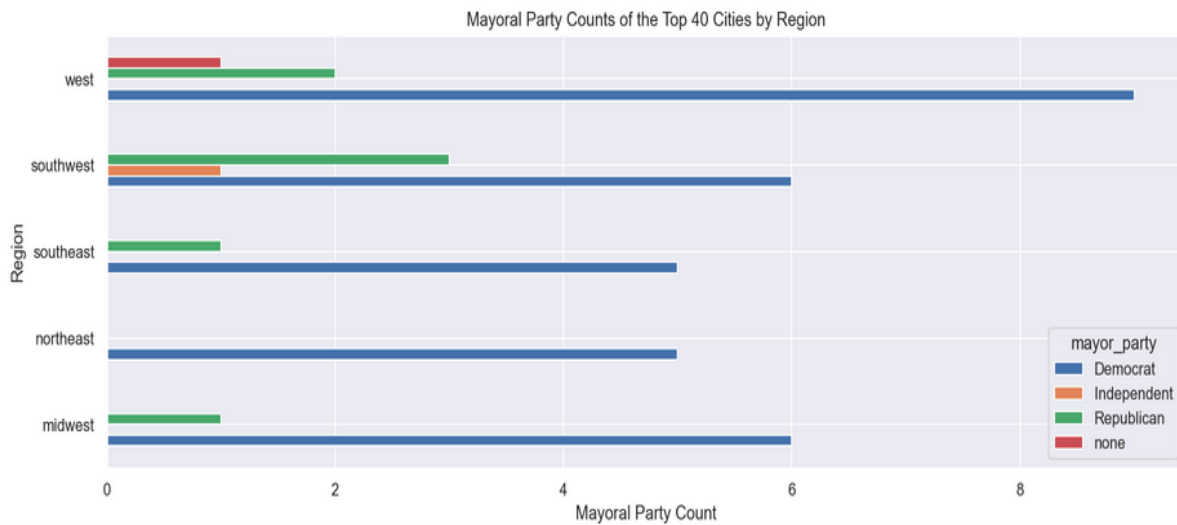
Governor Party Count for Top 40 Cities, Governor Party Counts by Region

Governor Political Party Counts of the Top 40 Cities
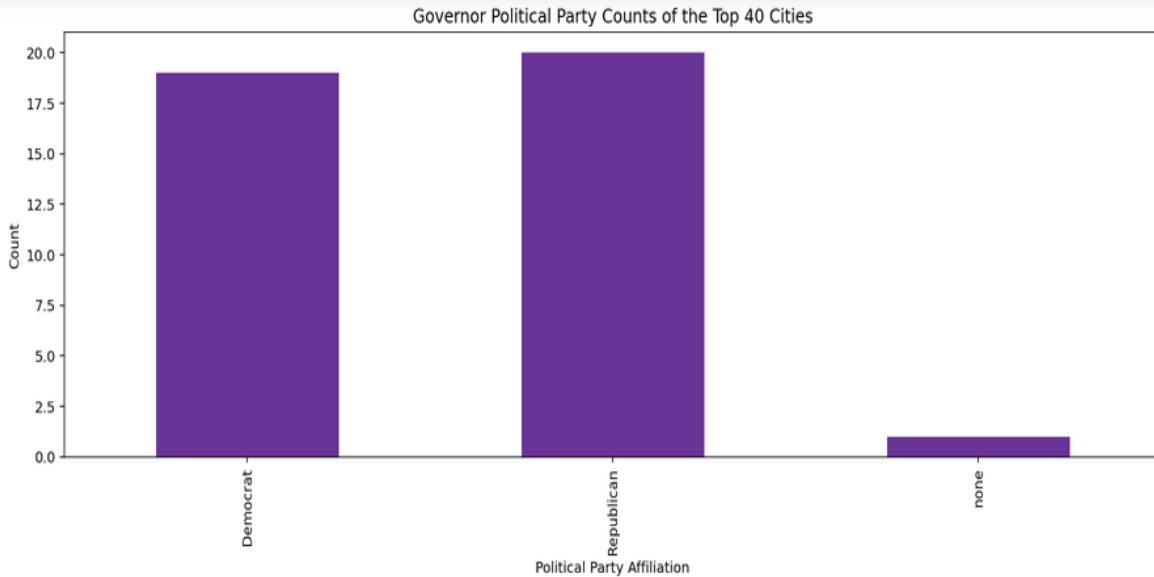
```
n [116]: gov_region_plot = top_df.groupby("region")["gov_party"].value_counts().unstack()
         gov_region_plot.plot.barh(figsize = (15,5))
         plt.xlabel("Governor Party Count")
         plt.ylabel("Region")
         plt.title("Governor Party Counts of the Top 40 Cities by Region");
```


Governor Party Counts of the Top 40 Cities by Region

Congress Majority for Top 40 Cities, Congress Majority by Region

Total Congress Party Majority Counts of the Top 40 Cities


```
In [117]: cong_region_plot = top_df.groupby("region")["cong_maj"].value_counts().unstack()
          cong_region_plot.plot.barh(figsize = (15,5))
          plt.xlabel("Congress Majority Counts")
          plt.ylabel("Region")
          plt.title("Congress Majority Party Counts of the Top 40 Cities by Region");
```

Congress Majority Party Counts of the Top 40 Cities by Region
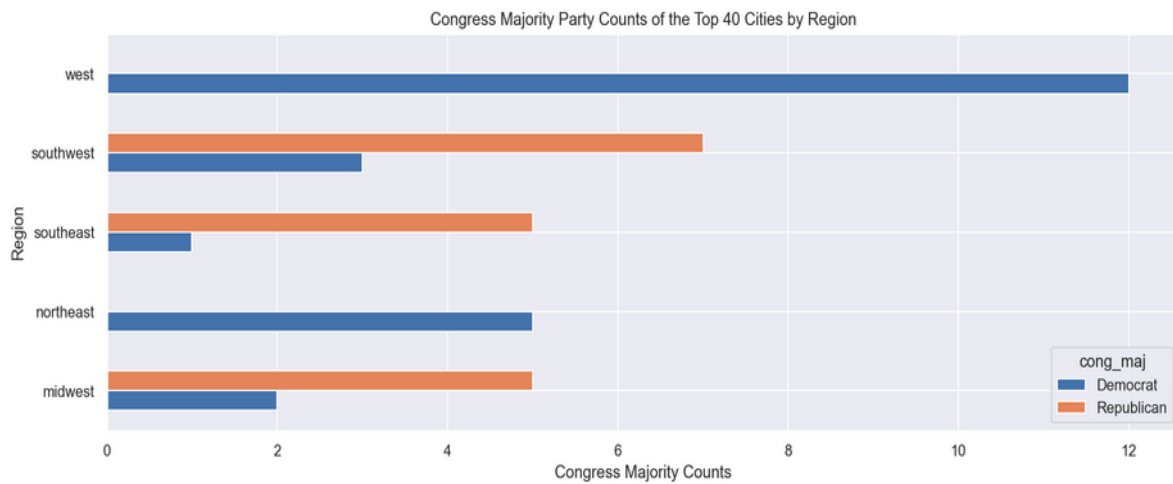
Total Political Party Majority Counts of the Top 40 Cities by Region

Total Party Majority Counts of the Top 40 Cities by Region