

PYTHON

```
In [1]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import plotly.express as px
import plotly.figure_factory as ff
import seaborn as sns
```

```
In [2]: #Load crime rates data into a dataframe
crime_rates_df = pd.read_csv('crimerates-by-state-2005.csv')
crime_rates_df.head(5)
```

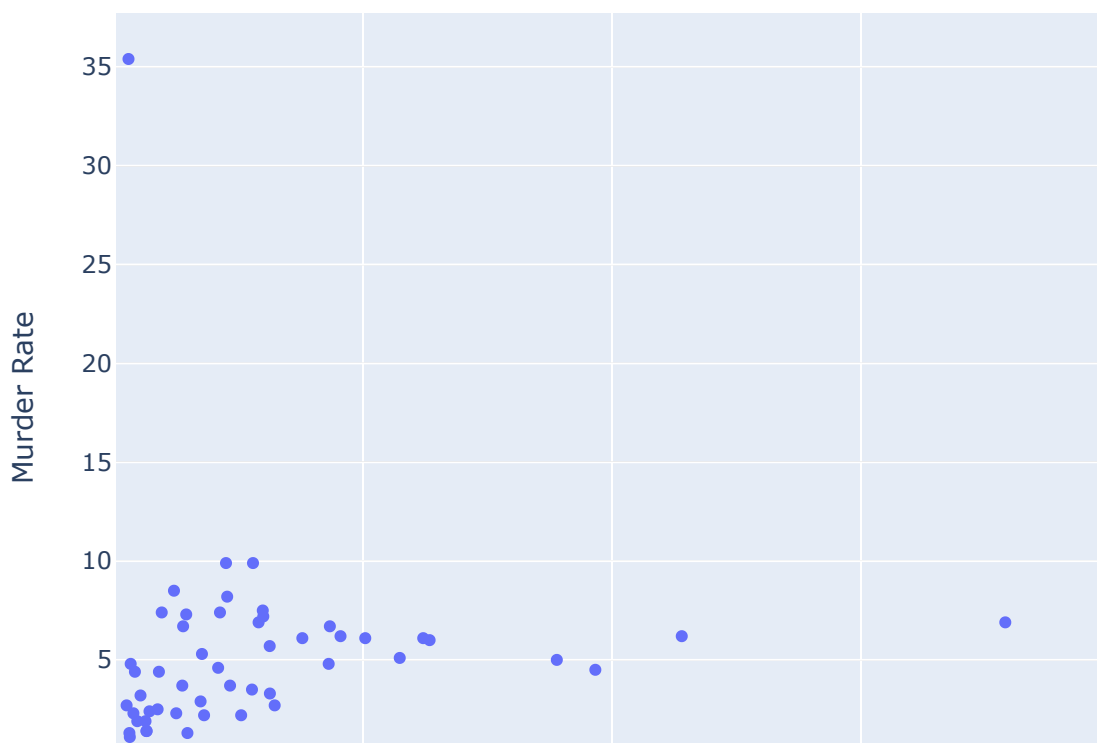
```
Out[2]:
```

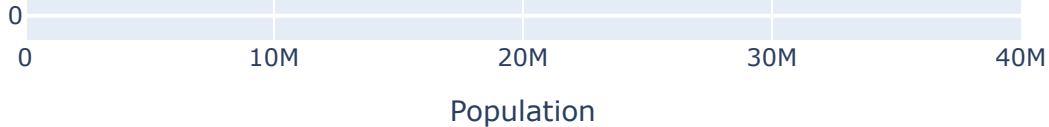
	state	murder	forcible_rape	robbery	aggravated_assault	burglary	larceny_theft	motor_vehicle_theft	population
0	United States	5.6	31.7	140.7	291.1	726.7	2286.3	416.7	291.1
1	Alabama	8.2	34.3	141.4	247.8	953.8	2650.0	288.3	247.8
2	Alaska	4.8	81.1	80.9	465.1	622.5	2599.1	391.0	465.1
3	Arizona	7.5	33.8	144.4	327.4	948.4	2965.2	924.4	327.4
4	Arkansas	6.7	42.9	91.1	386.8	1084.6	2711.2	262.1	386.8

Python - Scatter Plot

```
In [3]: fig = px.scatter(crime_rates_df, x="population", y="murder" )
fig.update_layout(xaxis_range=[-0,40000000],title = 'Python - Scatter Plot for Population vs Murder Rate',
                  xaxis_title="Population",
                  yaxis_title="Murder Rate")
fig.show("notebook")
```

Python - Scatter Plot for Population vs Murder

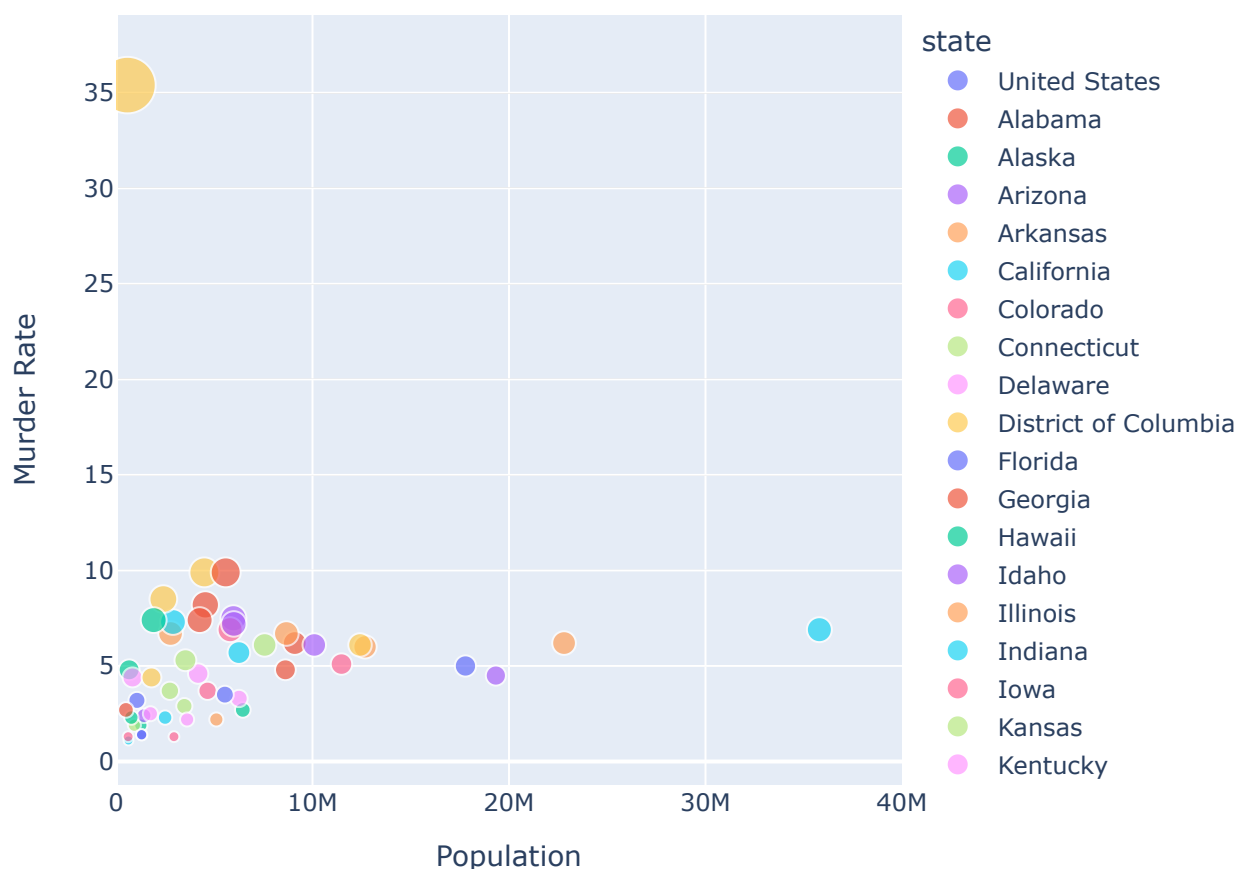




Python - Bubble chart

```
In [11]: fig = px.scatter(crime_rates_df, x="population", y="murder", color="state", size="murder",
                        #hover_name="state", log_x=True, size_max=60)
fig.update_layout(xaxis_range=[-0,40000000],title = 'Python - Bubble Chart for Populatio
                  xaxis_title="Population",
                  yaxis_title="Murder Rate")
fig.show("notebook")
```

Python - Bubble Chart for Population vs Murder by State



Python - Density Plot

```
In [15]: plt.figure(figsize=(15,8))
sns.displot(x=crime_rates_df.burglary,kde=True).set(title="Python - Density Plot for Bur
plt.show()
```

<Figure size 1500x800 with 0 Axes>

Python - Density Plot for Burglary

