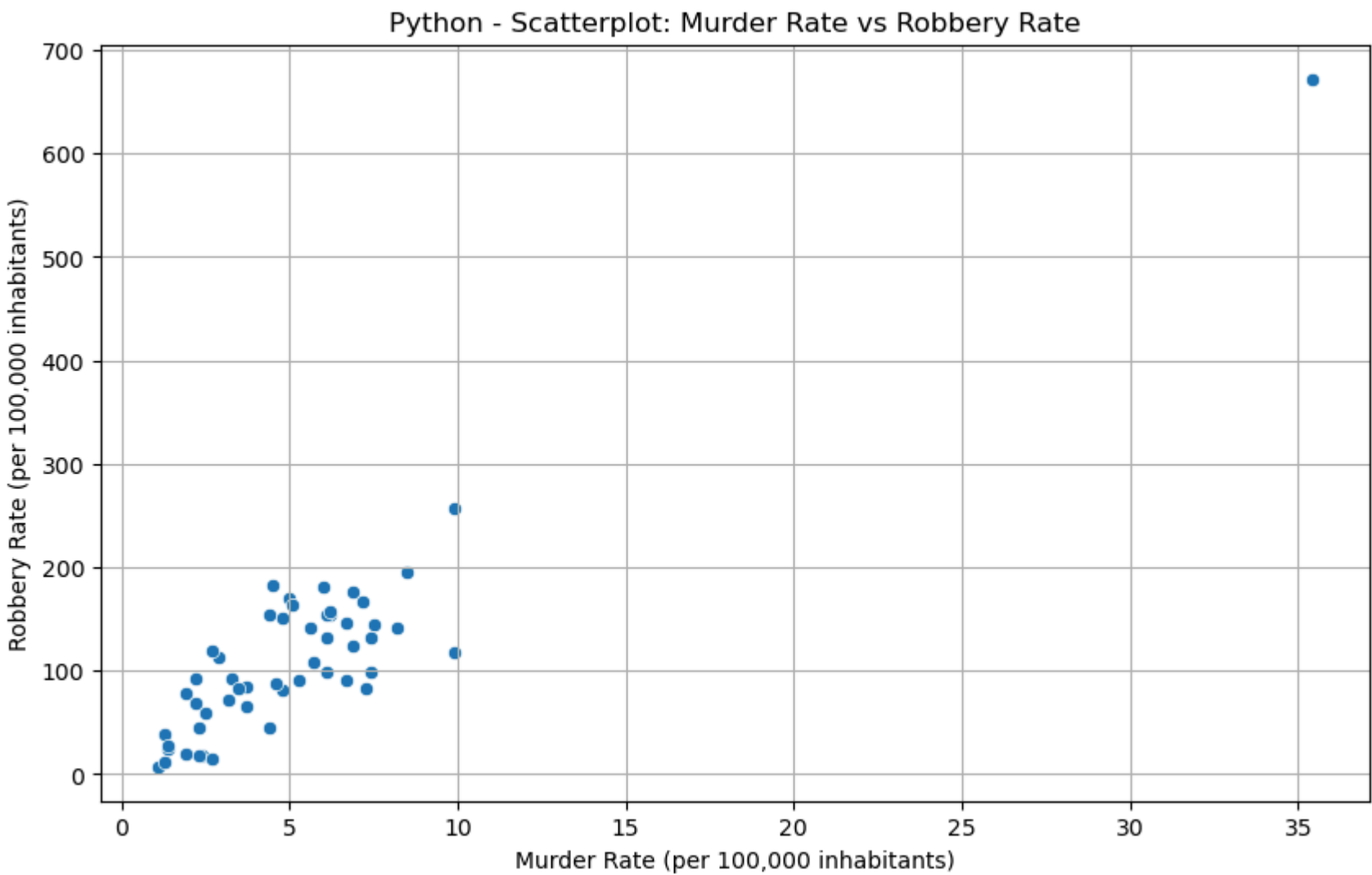


```
In [12]: # import necessary libraries
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import warnings
```

```
In [13]: # load the dataset
df = 'crimerates-by-state-2005.csv'
data = pd.read_csv(df)

# remove warning
warnings.filterwarnings("ignore", message=".*use_inf_as_na option is deprecated.*")
```

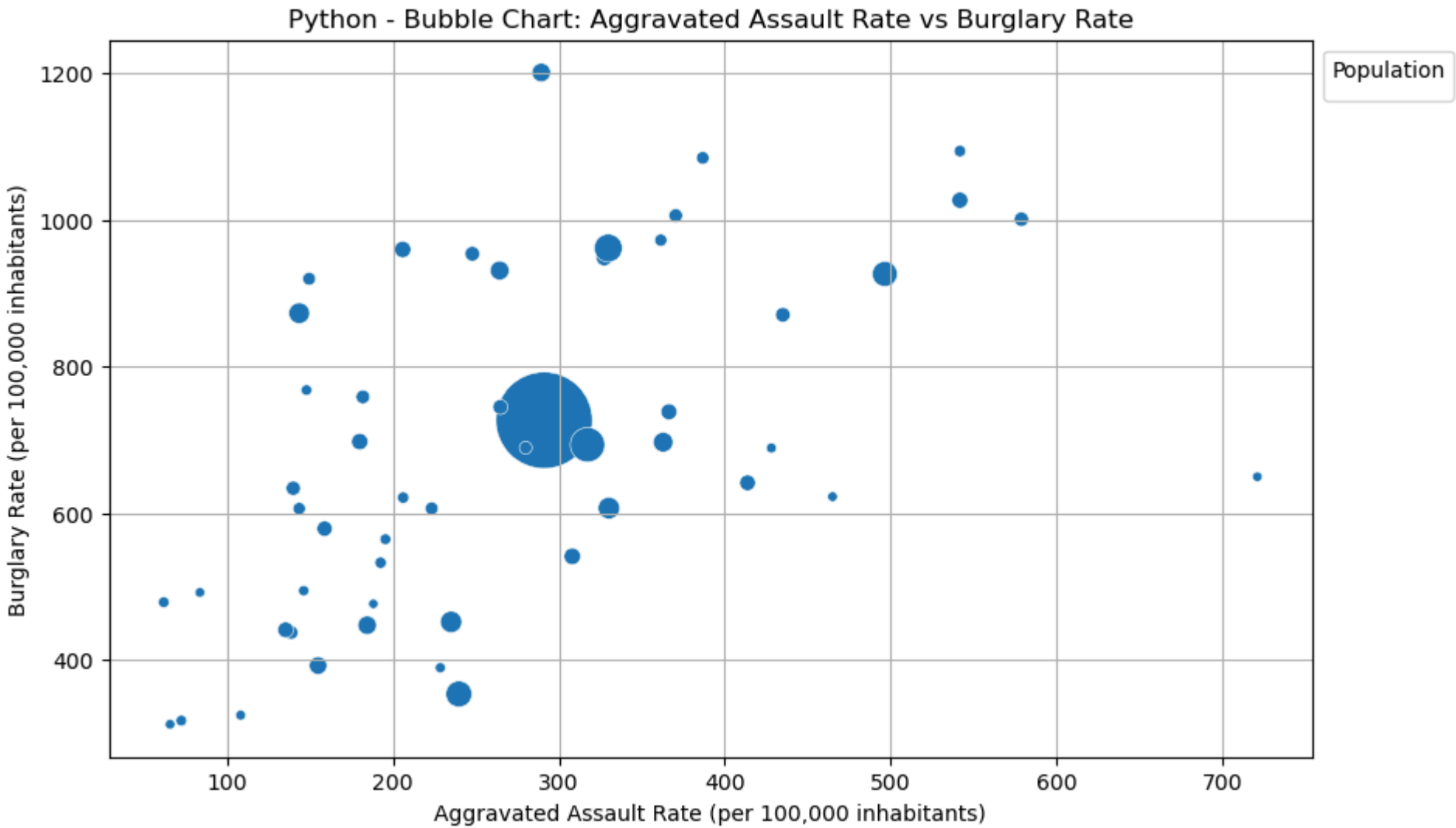
```
In [10]: # scatterplot: murder rate vs robbery rate
plt.figure(figsize=(10, 6))
sns.scatterplot(data=data, x='murder', y='robbery')
plt.title('Python - Scatterplot: Murder Rate vs Robbery Rate')
plt.xlabel('Murder Rate (per 100,000 inhabitants)')
plt.ylabel('Robbery Rate (per 100,000 inhabitants)')
plt.grid(True)
plt.show()
```



```
In [11]: # bubble chart: aggravated assault rate vs burglary rate; w/ bubble size representing population
plt.figure(figsize=(10, 6))
bubble_chart = sns.scatterplot(data=data, x='aggravated_assault', y='burglary', size='population', legend=False, sizes=(20, 2000))
plt.title('Python - Bubble Chart: Aggravated Assault Rate vs Burglary Rate')
plt.xlabel('Aggravated Assault Rate (per 100,000 inhabitants)')
plt.ylabel('Burglary Rate (per 100,000 inhabitants)')
plt.grid(True)

# create a legend for the bubble sizes
handles, labels = bubble_chart.get_legend_handles_labels()
bubble_chart.legend(handles[:5], labels[:5], title='Population', bbox_to_anchor=(1, 1), loc='upper left')

plt.show()
```



```
In [14]: # density plot: forcible rape rate
plt.figure(figsize=(10, 6))
sns.kdeplot(data=data, x='forcible_rape', fill=True, bw_adjust=0.5)
plt.title('Python - Density Plot: Forcible Rape Rate')
plt.xlabel('Forcible Rape Rate (per 100,000 inhabitants)')
plt.ylabel('Density')
plt.grid(True)
plt.show()
```

