

Exercise 4.2: Scatterplots, Bubble Charts, & Density Plots/Maps

Scott Breitbach

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Plots Using R

```
knitr::opts_chunk$set(echo = TRUE, warning = FALSE)

# Set Working Directory
setwd("C:/Users/micha/OneDrive/Documents/GitHub/DSC640/Weeks7-8/")

# Load libraries
library(ggplot2)
```

Load Data

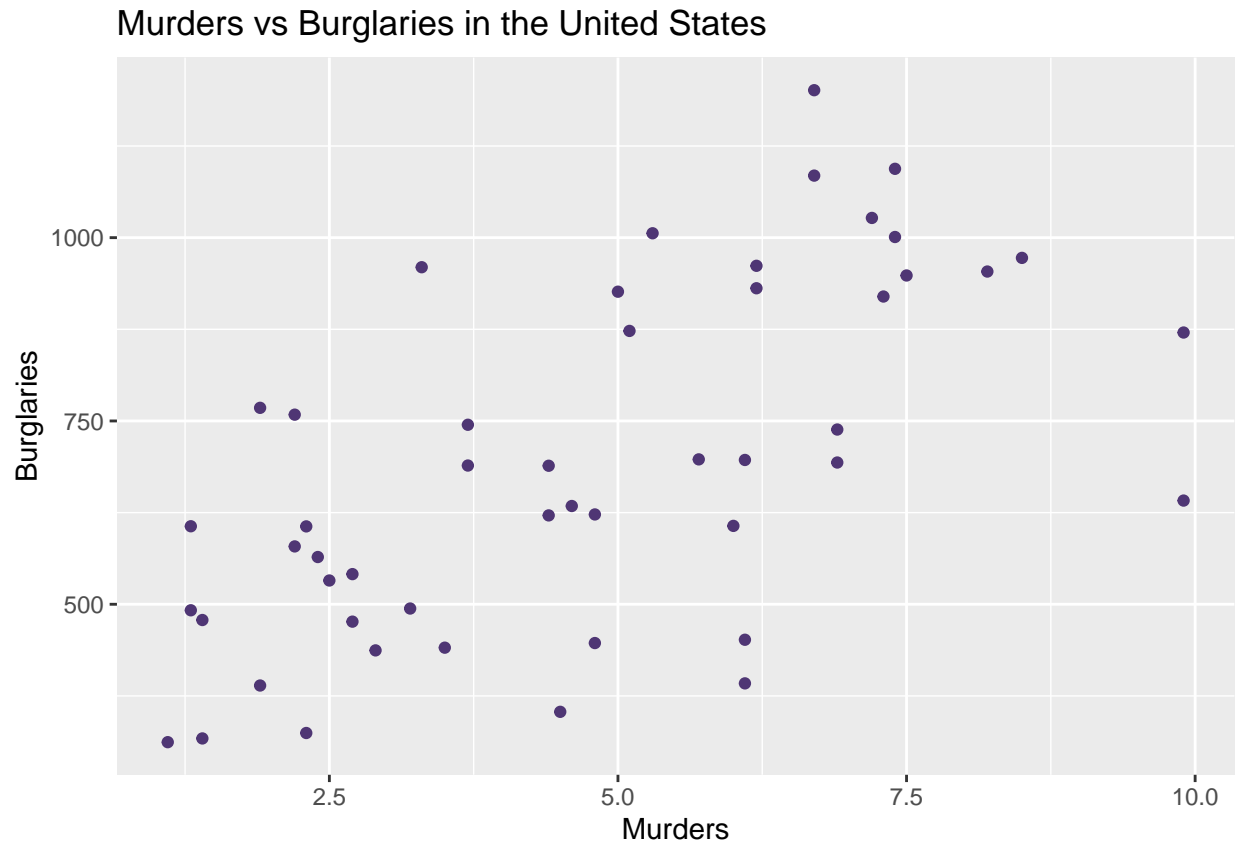
```
# Set color to Bellevue purple
color = "#4f3674"

# Load the data
crimeDF <- read.csv("crimerates-by-state-2005.csv")
birthDF <- read.csv("birth-rate.csv")

# Remove Washington, DC due to outliers
crimeDF <- crimeDF[crimeDF$state != "District of Columbia",]
# And remove United States due to averages
crimeDF <- crimeDF[crimeDF$state != "United States",]
```

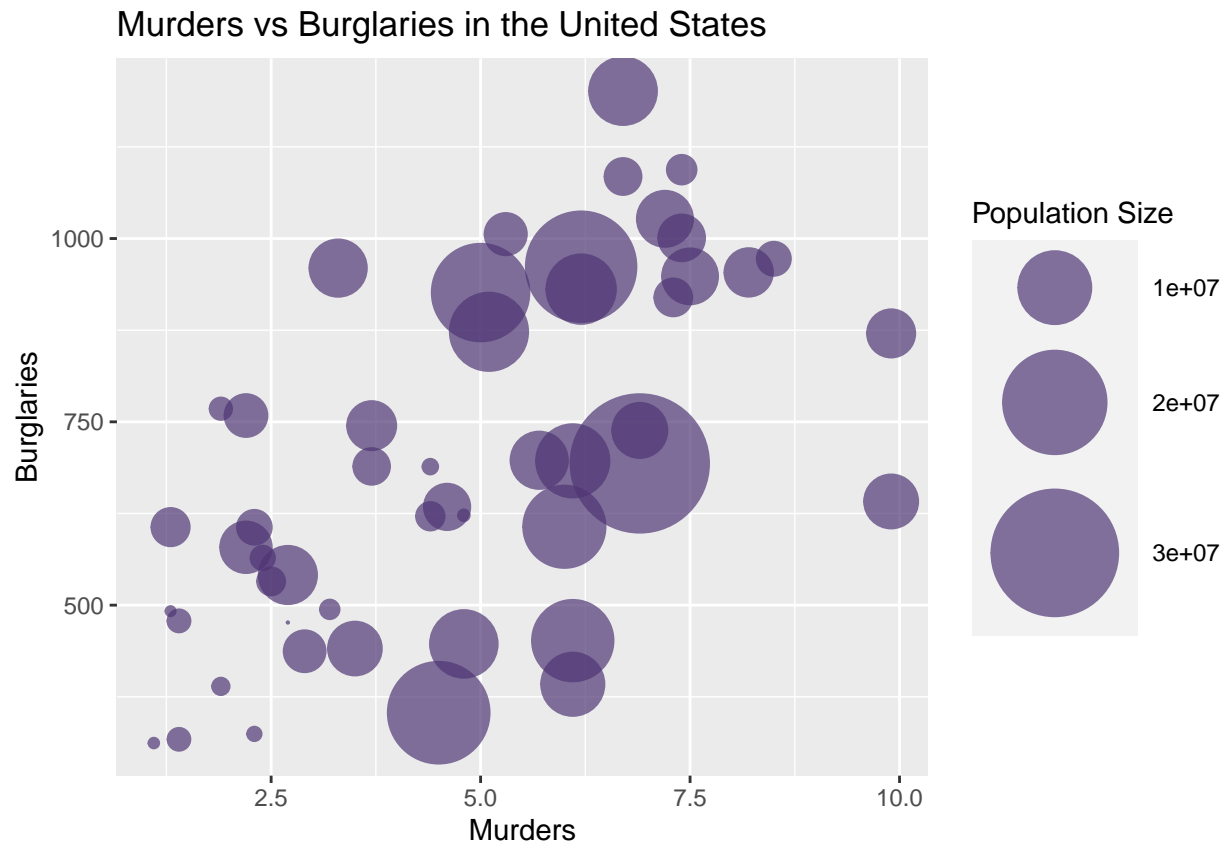
Scatter Plot

```
# Create a Scatterplot
ggplot(crimeDF, aes(x=murder, y=burglary)) +
  geom_point(col=color) +
  theme_gray() +
  labs(x="Murders", y="Burglaries") +
  ggtitle("Murders vs Burglaries in the United States")
```



Bubble Chart

```
# Make a bubble plot  
ggplot(crimeDF, aes(x=murder, y=burglary, size=population)) +  
  geom_point(alpha=0.7, col=col) +  
  scale_size(range=c(0.1,24), name="Population Size") +  
  theme_gray() +  
  labs(x="Murders", y="Burglaries") +  
  ggtitle("Murders vs Burglaries in the United States")
```



Density Plot

```
# Make a density plot  
ggplot(birthDF, aes(x=X1980)) +  
  geom_density(fill=color, color=color, alpha=0.8) +  
  xlim(0,65) +  
  theme_gray() +  
  labs(x="Live Births per 1,000 Population", y="Density") +  
  ggtitle("Global Distribution of Birth Rates in 1980")
```

