3.2 Exercis - R Plots

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R Plots

```
# import libraries

suppressWarnings(library(ggplot2))
library(hexbin)
library(dplyr)
library(gapminder)

# import data

crime <- read.csv('crimerates-by-state-2005.csv')
head(crime)
```

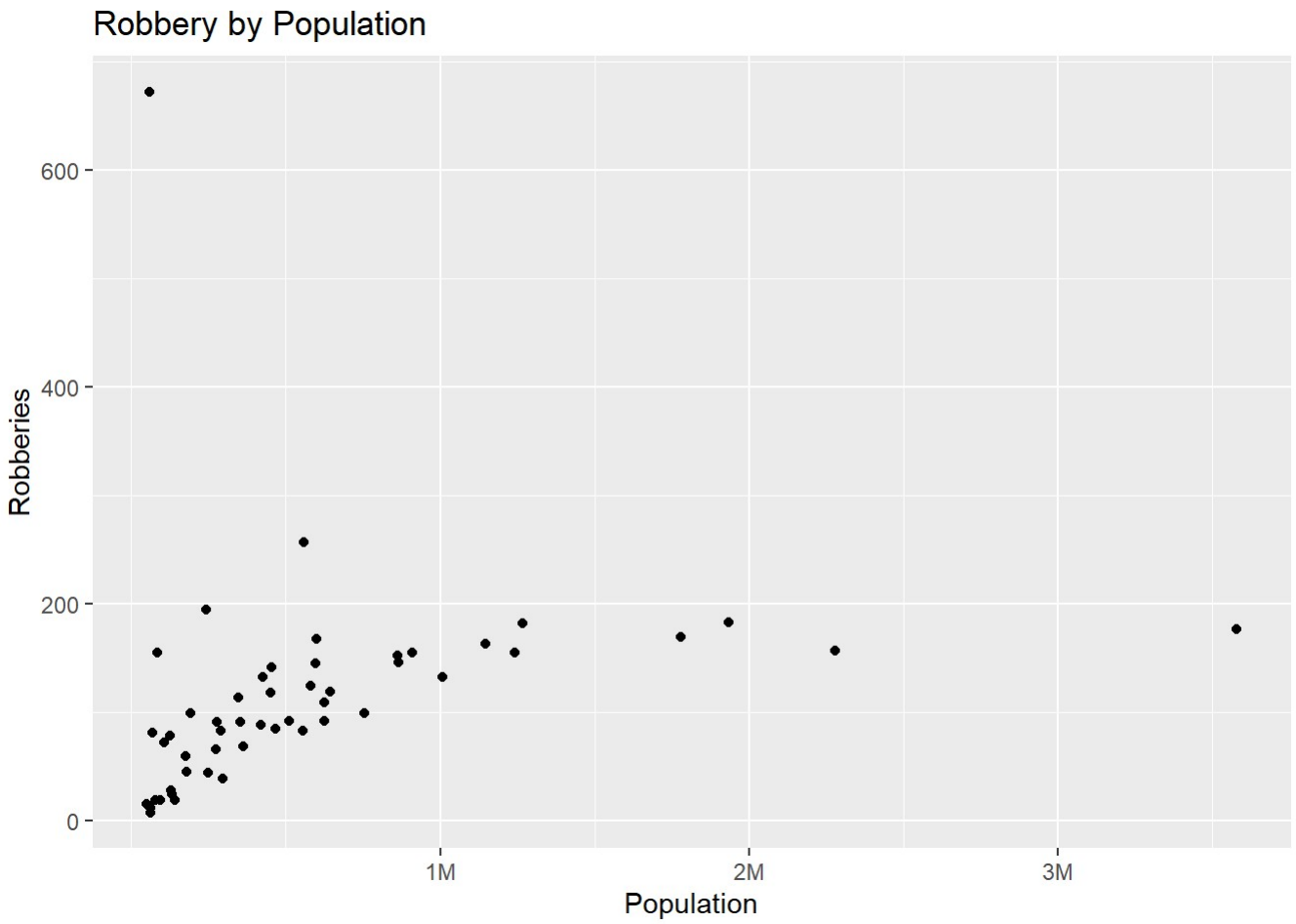
```
##           state murder forcible_rape robbery aggravated_assault burglary
## 1 United States    5.6          31.7   140.7              291.1    726.7
## 2       Alabama    8.2          34.3   141.4              247.8    953.8
## 3        Alaska    4.8          81.1    80.9              465.1    622.5
## 4       Arizona    7.5          33.8   144.4              327.4    948.4
## 5      Arkansas    6.7          42.9    91.1              386.8   1084.6
## 6    California    6.9          26.0   176.1              317.3    693.3
##   larceny_theft motor_vehicle_theft population
## 1        2286.3               416.7  295753151
## 2        2650.0               288.3    4545049
## 3        2599.1               391.0     669488
## 4        2965.2               924.4    5974834
## 5        2711.2               262.1    2776221
## 6        1916.5               712.8   35795255
```

```
crime_state <- crime[!(crime$state=='United States'),]
#crime_state <- crime[!(crime$state=='District of Columbia'),]

pop <- crime_state$population
rob <- crime_state$robbery
state <- crime_state$state
```

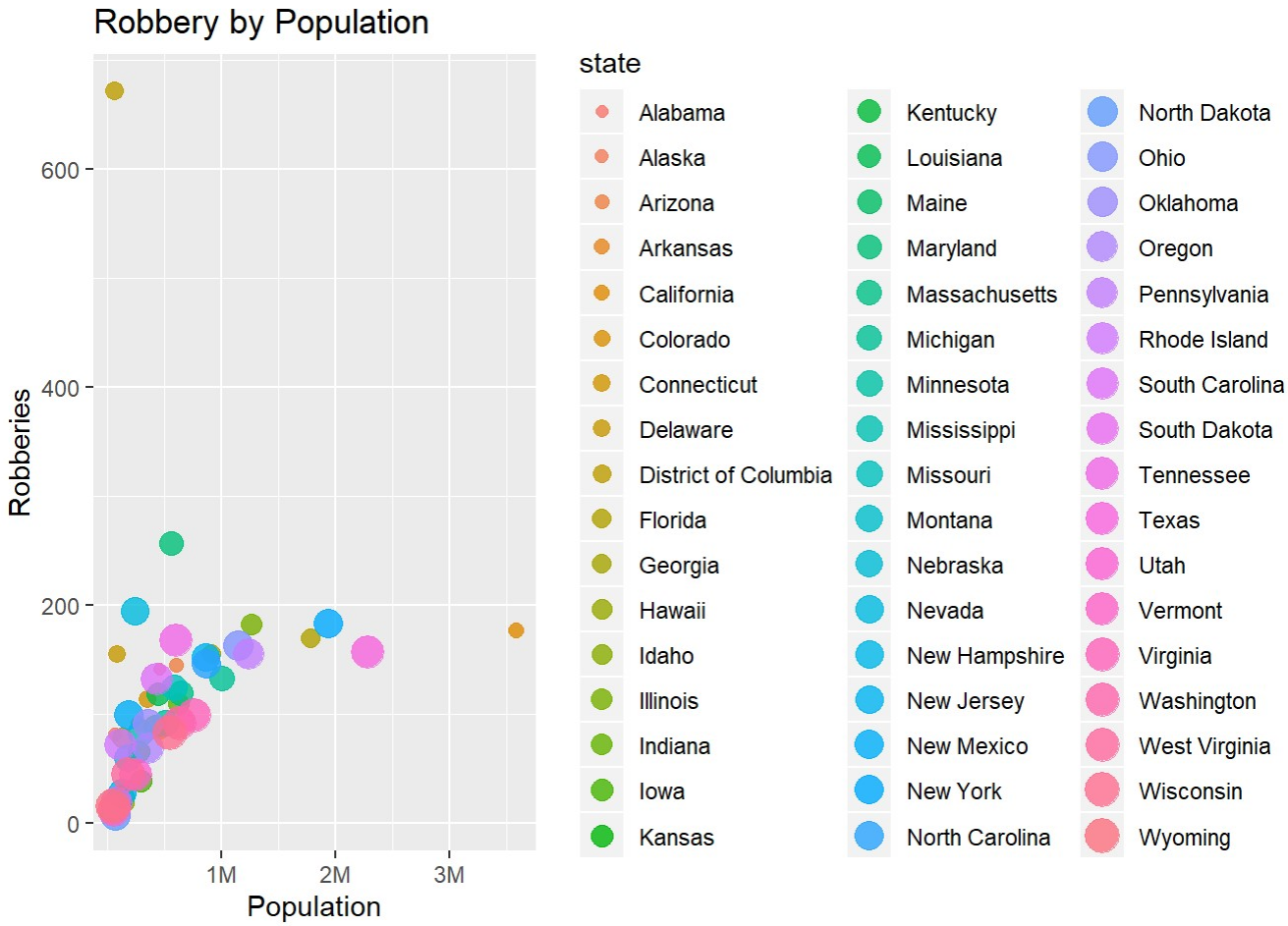
Scatter Plot

```
axs <- ggplot(crime_state, aes(pop, rob)) + geom_point() + labs(x = 'Population', y =
'Robberies') + ggtitle('Robbery by Population')
suppressWarnings(axs + scale_x_continuous(breaks = c(10000000, 20000000, 30000000), l
abels = c('1M', '2M', '3M')))
```



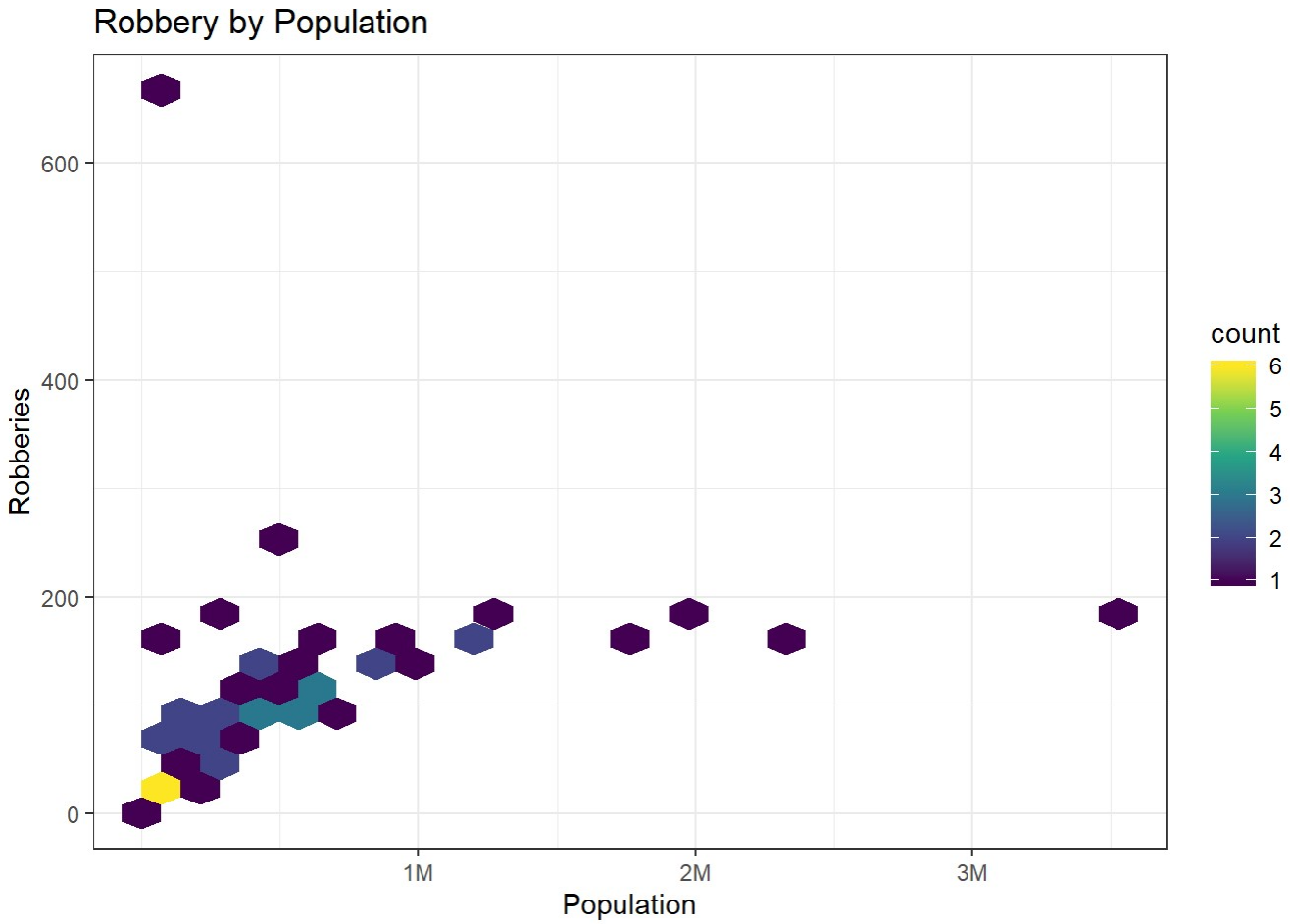
Bubble Plot

```
suppressMessages(ggplot(crime_state, aes(pop, rob, size = state, color = state)) + ge
om_point(alpha = 0.8) + labs(x = 'Population', y = 'Robberies') + ggtitle('Robbery by
Population')+ scale_x_continuous(breaks = c(10000000, 20000000, 30000000), labels = c
('1M', '2M', '3M')))
```



Density Plot

```
ggplot(crime_state, aes(pop, rob)) + geom_hex(bins = 25) + scale_fill_continuous(type = "viridis") + theme_bw()+ labs(x = 'Population', y = 'Robberies') + ggtitle('Robbery by Population')+ scale_x_continuous(breaks = c(10000000, 20000000, 30000000), labels = c('1M', '2M', '3M'))
```


Robbery by Population
Robberies
600
400
200
0
1M
2M
3M
Population
count
6
5
4
3
2
1