Assignment 3.2 - Week 5&6 in R

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Load required libraries

```
library(readxl)
library(ggplot2)
library(plotly)
```

Read xls into a dataframe

```
crime_rates_df <- read.csv("C:/Masters/GitHub/Summer2023/DSC640-Data Presentation & Visualization/Week5&6/ex4-2/c
rimerates-by-state-2005.csv")
nrow(crime_rates_df)
```

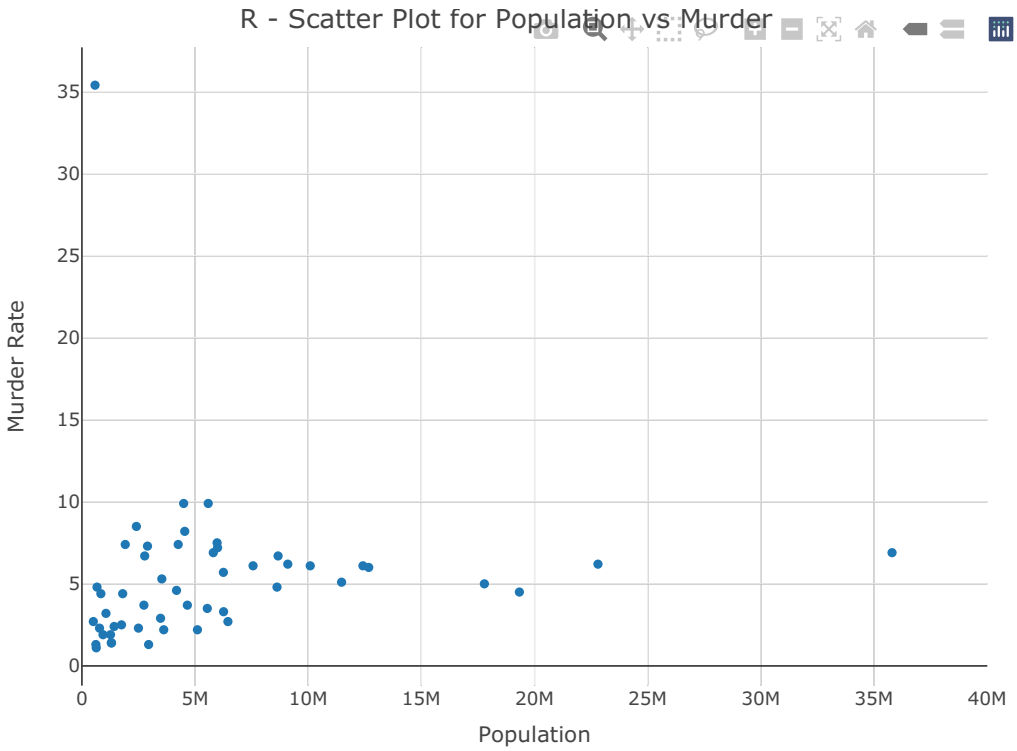
```
## [1] 52
```

```
head(crime_rates_df,5)
```

```
##           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
##   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
```

R - SCATTER PLOT

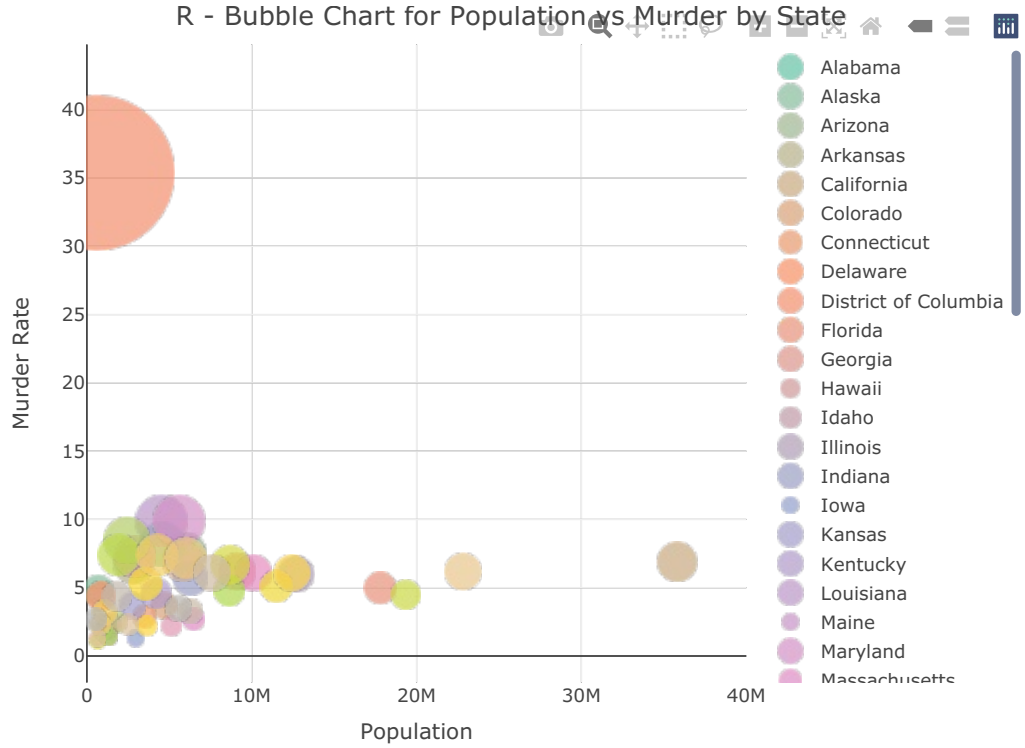
```
fig <- plot_ly(data = crime_rates_df, x = ~population, y = ~murder) %>%
    layout(xaxis = list(range = c(0,40000000),title = 'Population'),
           title="R - Scatter Plot for Population vs Murder",
           yaxis = list(title = 'Murder Rate'))
fig
```



R - BUBBLE CHART

```
fig <- plot_ly(crime_rates_df, x = ~population, y = ~murder, text = ~state,
               type = 'scatter', mode = 'markers', size = ~murder, color = ~state, #colors = 'Paired',
        marker = list( sizemode = 'diameter'))
fig <- fig %>% layout(xaxis = list(range = c(0,40000000),title = 'Population'),
           title="R - Bubble Chart for Population vs Murder by State",
           yaxis = list(title = 'Murder Rate'))

fig
```



R -DENSITY CHART

```
p <- ggplot(crime_rates_df, aes(burglary))  + geom_density() +
  geom_histogram(aes(y=..density..),bins=30,color="blue",fill="lightblue")
  facet_wrap(~ state)
```

```
## <ggproto object: Class FacetWrap, Facet, gg>
##     compute_layout: function
##     draw_back: function
##     draw_front: function
##     draw_labels: function
##     draw_panels: function
##     finish_data: function
##     init_scales: function
##     map_data: function
##     params: list
##     setup_data: function
##     setup_params: function
##     shrink: TRUE
##     train_scales: function
##     vars: function
##     super:  <ggproto object: Class FacetWrap, Facet, gg>
```

```
fig <- ggplotly(p)
fig <- fig %>% layout(title="R - Density Plot for Burglary",
           yaxis = list(title = 'Murder Rate'))
fig
```