```
In [18]:   #Importing libraries
           import matplotlib.pyplot as plt
           import pandas as pd
           import seaborn as sns
           import numpy as py
```

```
In [19]:   #Read csv file
           df_crime=pd.read_csv("crimerates-by-state-2005.csv")
```

```
In [20]:   df_crime.head()
```

Out[20]:

|	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	295753151
1	Alabama	8.2	34.3	141.4	247.8	953.8	2650.0	288.3	4545049
2	Alaska	4.8	81.1	80.9	465.1	622.5	2599.1	391.0	669488
3	Arizona	7.5	33.8	144.4	327.4	948.4	2965.2	924.4	5974834
4	Arkansas	6.7	42.9	91.1	386.8	1084.6	2711.2	262.1	2776221

Scatter Plot

```
In [21]:   plt.figure(figsize=(15,8))
           ax=sns.scatterplot(data=df_crime,x="state",y="burglary").set(title="Burglary vs State - Scatter Plot")
           locs,labels=plt.xticks()
           plt.setp(labels,rotation=90)
           plt.show()
```
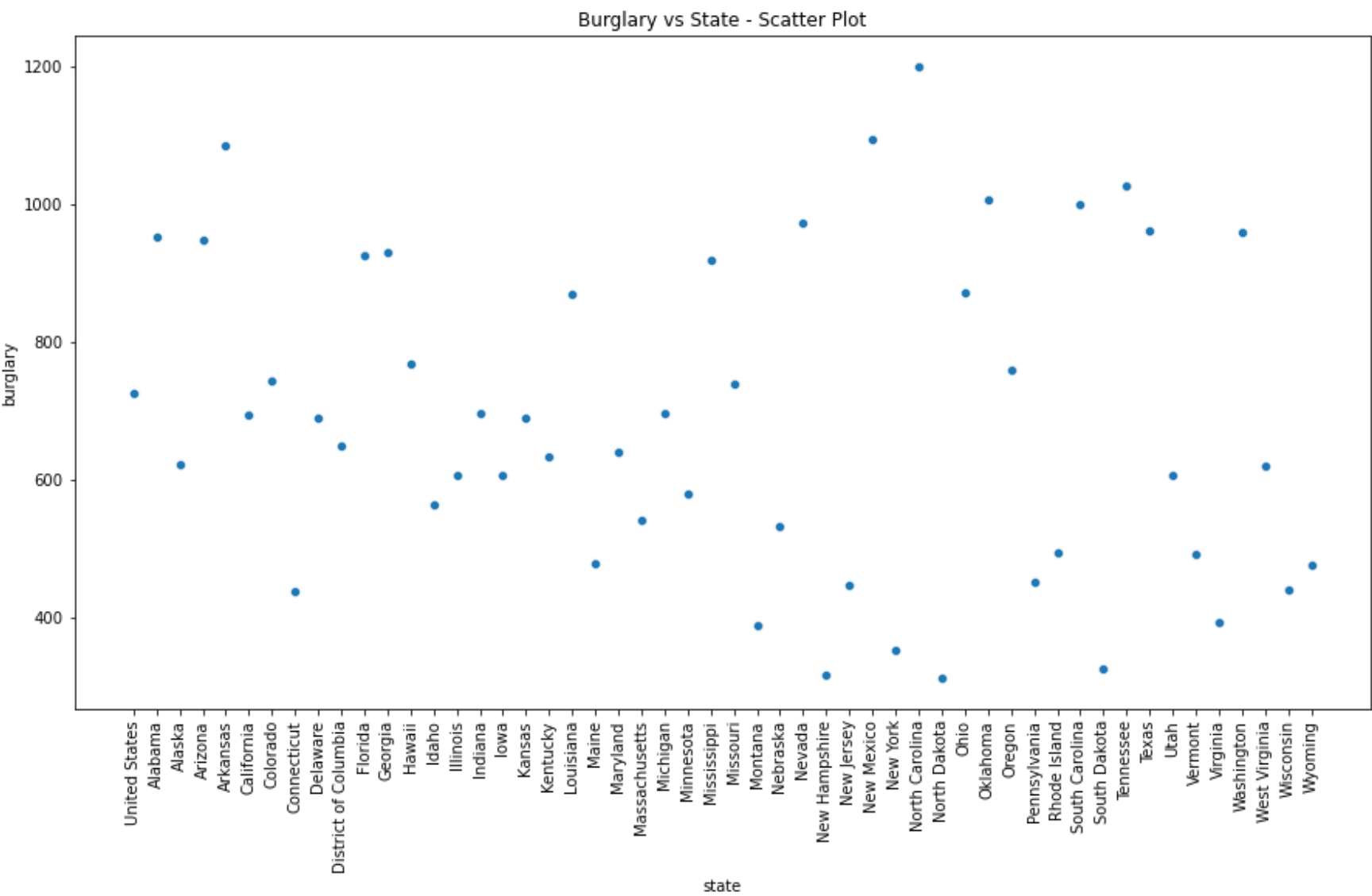

Bubble Plot

```
In [22]:   plt.figure(figsize=(15,8))
           ax=sns.scatterplot(data=df_crime,x="state",y="burglary", size="burglary",legend=False,sizes=(20,2000)).set(titl
           locs,labels=plt.xticks()
           plt.setp(labels,rotation=90)
           plt.show()
```
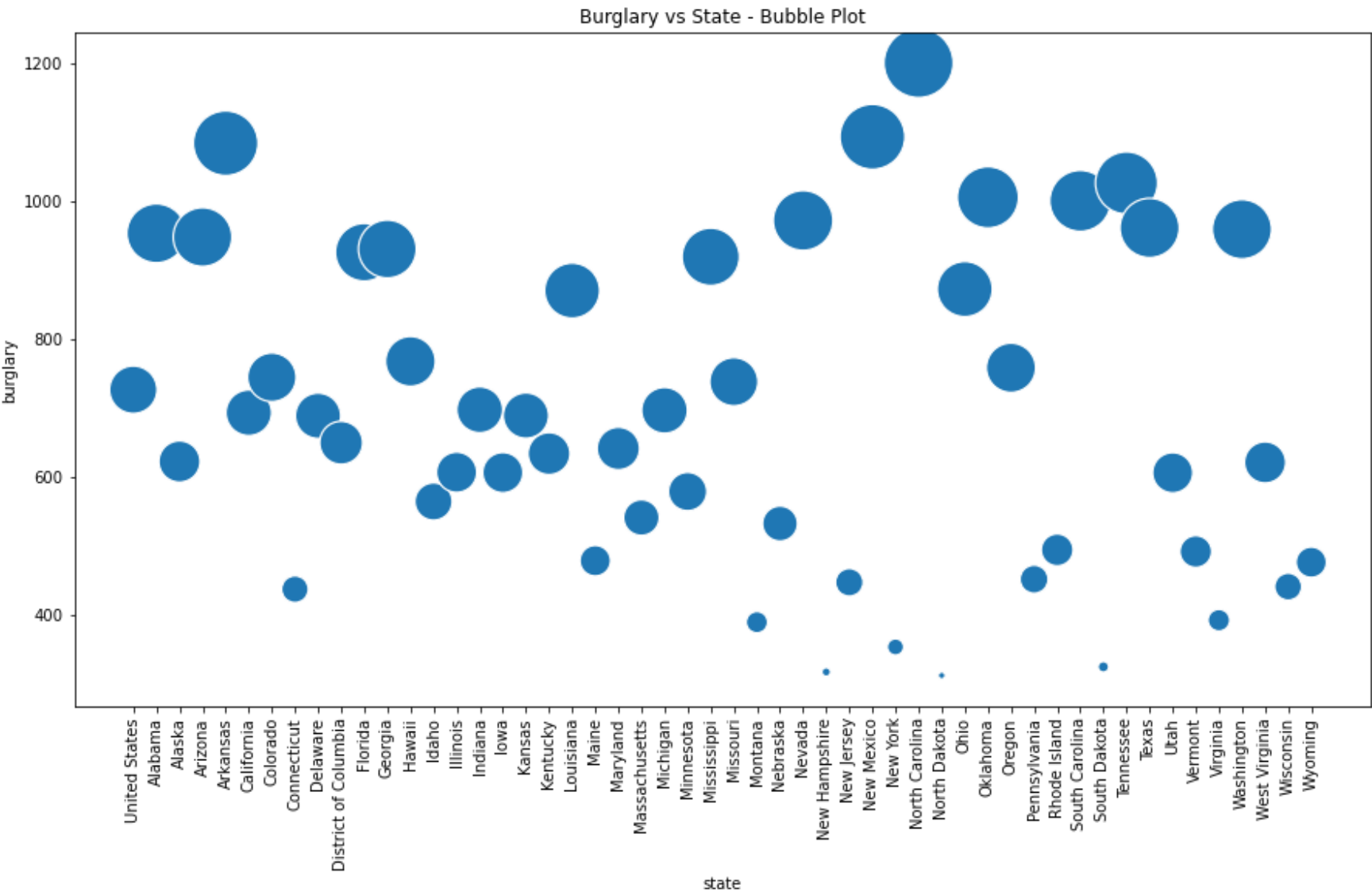

Density Plot

```
In [11]:   plt.figure(figsize=(15,8))
           sns.displot(x=df_crime["burglary"],kde=True).set(title="Burglary - Density Plot")
           locs,labels=plt.xticks()
           plt.setp(labels,rotation=90)
           plt.show()
```

```
<Figure size 1080x576 with 0 Axes>
```
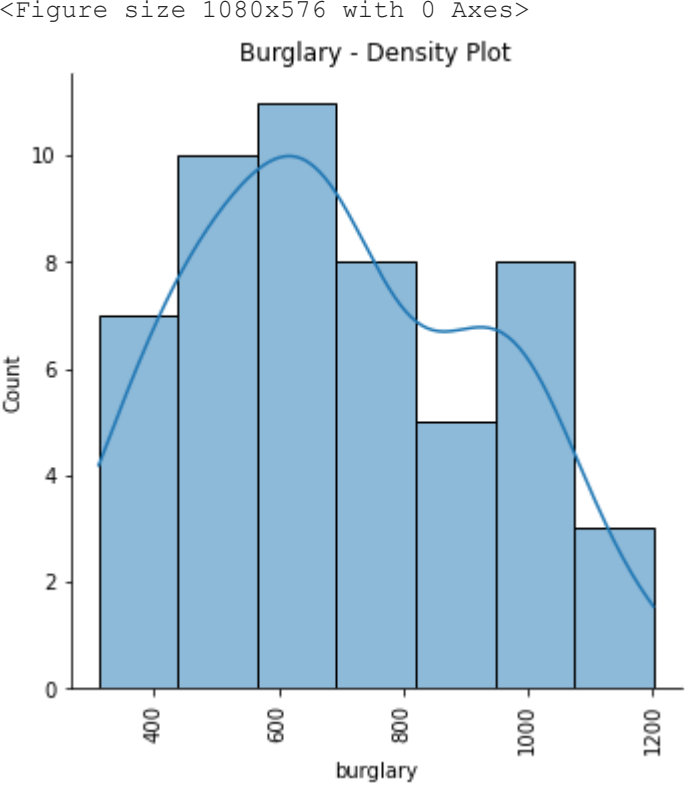
Assignment_4.2_Vayuvegula_Soma_Shekar_R

Soma Shekar Vayuvegula

02/04/2023

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union

## -- Attaching packages --------------------------------------- tidyverse 1.3.2 --
## v tibble  3.1.7      v purrr   0.3.4
## v tidyr   1.2.0      v stringr 1.4.0
## v readr   2.1.2      v forcats 0.5.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
##
## Attaching package: 'reshape2'
##
##
## The following object is masked from 'package:tidyr':
##
##     smiths
##
##
##
## Attaching package: 'data.table'
##
##
## The following objects are masked from 'package:reshape2':
##
##     dcast, melt
##
##
## The following object is masked from 'package:purrr':
##
##     transpose
##
##
## The following objects are masked from 'package:dplyr':
##
##     between, first, last
```

```
## 
## 
## 
## Attaching package: 'plotly'
## 
## 
## The following object is masked from 'package:ggplot2':
## 
##     last_plot
## 
## 
## The following object is masked from 'package:stats':
## 
##     filter
## 
## 
## The following object is masked from 'package:graphics':
## 
##     layout
```

```r
df_crime<-read.csv("crimerates-by-state-2005.csv")
head(df_crime,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
```
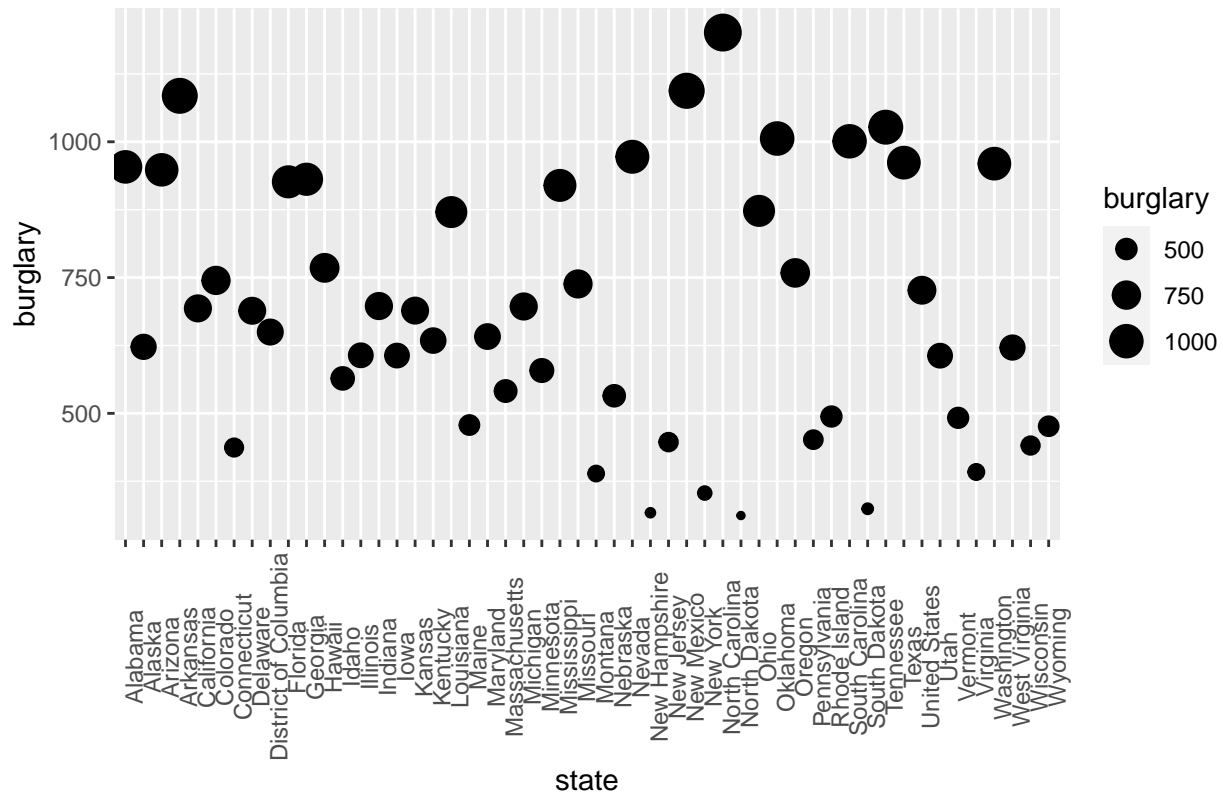
```r
ggplot(df_crime,aes(x=state,y=burglary))+geom_point()+
  ggtitle("Burglary per State - Scatter Plot")+
  theme(axis.text.x = element_text(angle=90))
```

Burglary per State – Scatter Plot
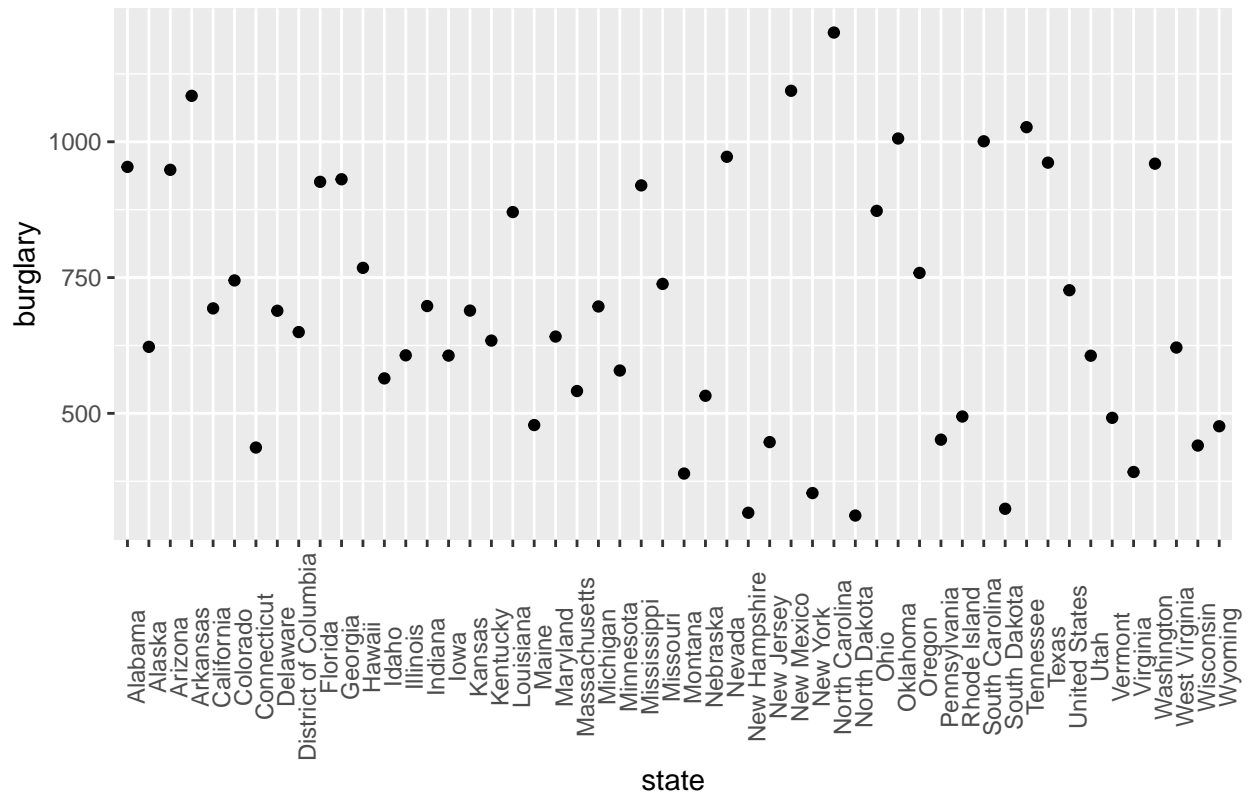

```
ggplot(df_crime,aes(x=state,y=burglary,size=burglary))+geom_point()+
  ggtitle("Burglary per State - Bubble Plot")+
  theme(axis.text.x = element_text(angle=90))
```

Burglary per State – Bubble Plot


```
ggplot(df_crime,aes(x=burglary))+
  geom_histogram(aes(y=..density..),bins=30,color="blue",fill="white")+
  geom_density()+ggtitle("Burglary - Density Plot")
```
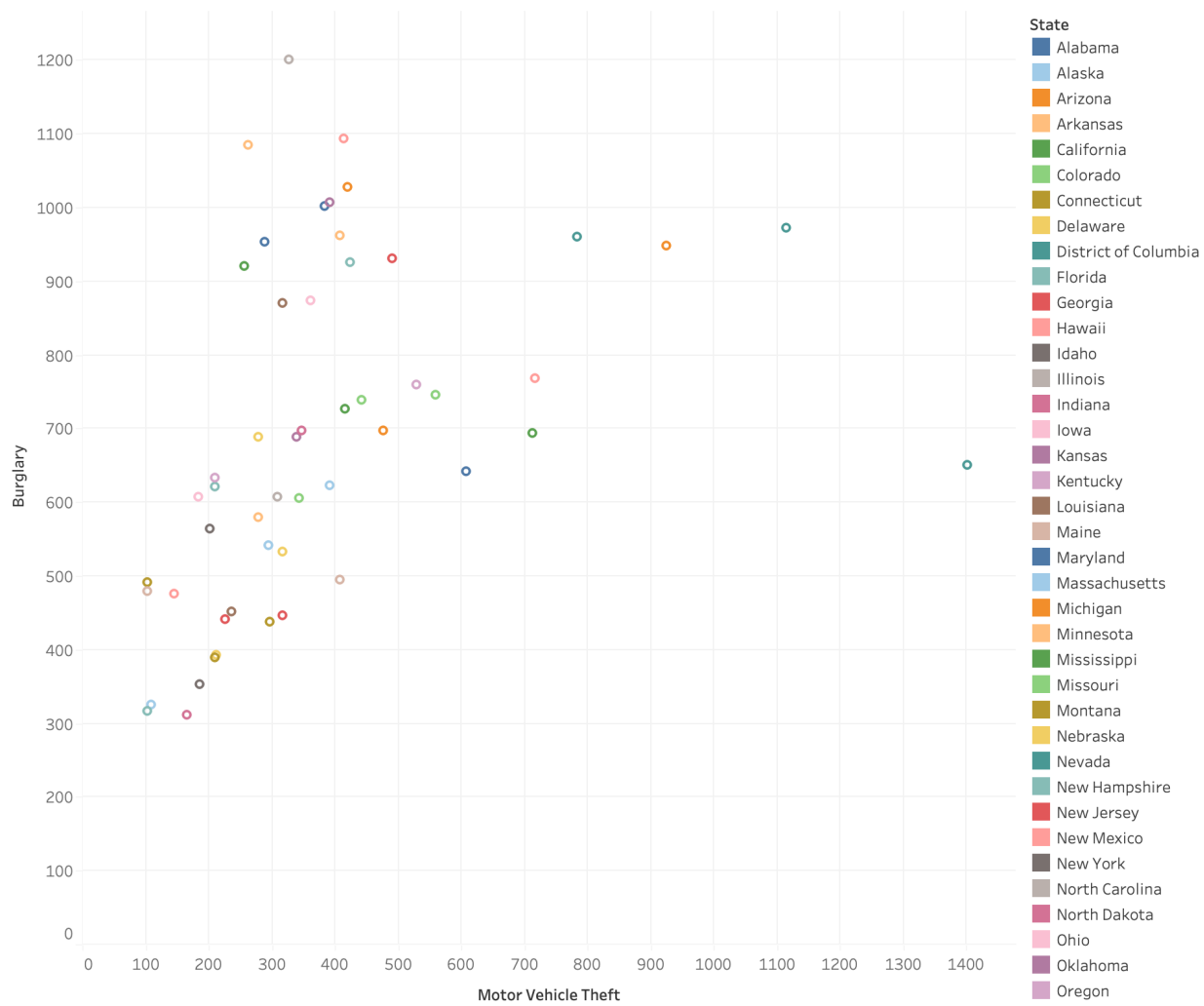
Burglary – Density Plot
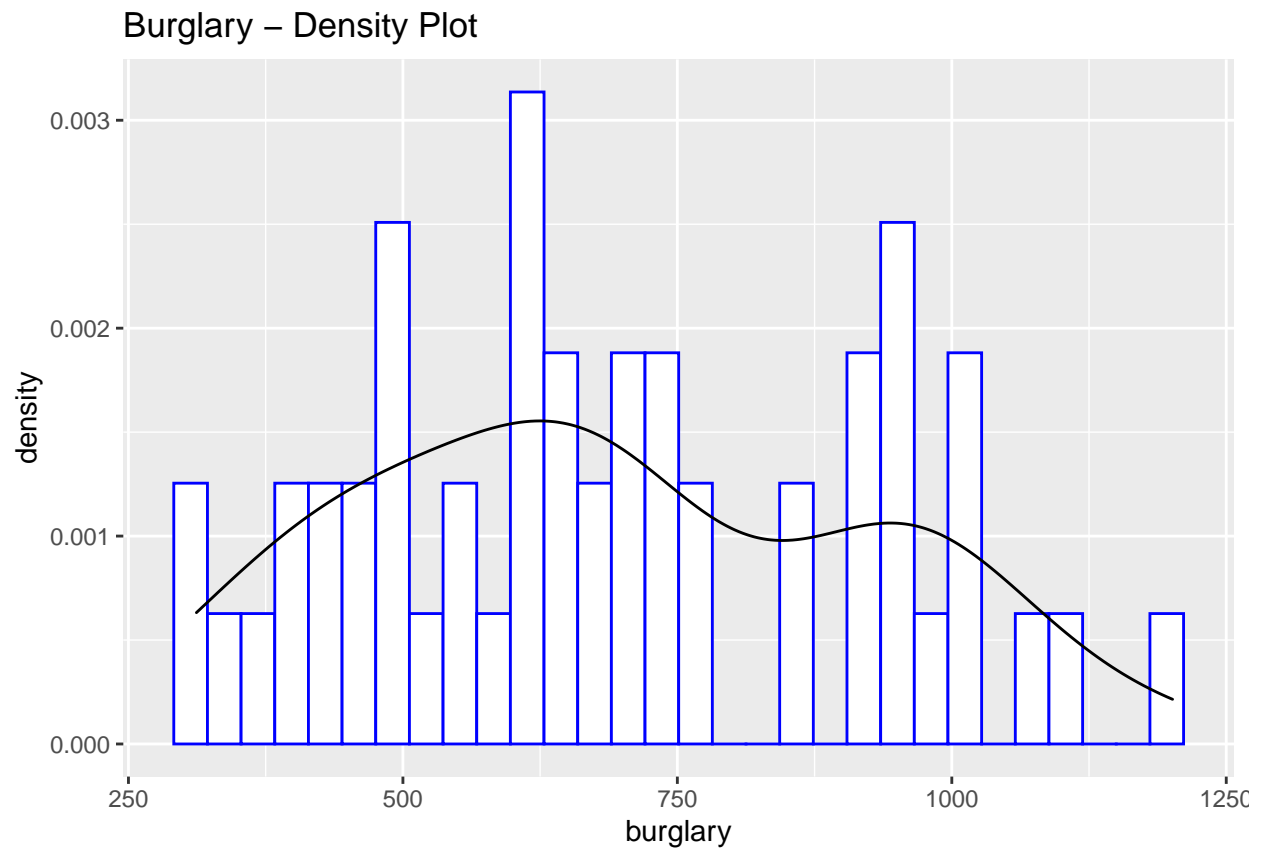
Assignment_4.2_Vayuvegula _Soma_Shekar_Tableau

File created on: 2/5/23 12:21:30 AM CST

Motor Vehicle Theft vs Burglary per State - Scatter Plot

Sum of Motor Vehicle Theft vs. sum of Burglary. Color shows details about State.

State

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Carolina
- North Dakota
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Texas
- United States
- Utah
- Vermont
- Virginia
- Washington
- West Virginia
- Wisconsin
- Wyoming

Burglary per State - Bubble Plot

State and sum of Burglary. Color shows sum of Burglary. Size shows sum of Burglary. The marks are labeled by State and sum of Burglary.

Burglary per State - Density Map

Burglary
311.9   1,201.1

State	Value
Alaska	622.5
Washington	959.7
Oregon	758.6
Idaho	564.4
Montana	389.2
North Dakota	311.9
Minnesota	578.9
Michigan	696.8
Maine	478.5
California	972.4
Nevada	693.3
Utah	606.2
Wyoming	476.3
South Dakota	324.4
Wisconsin	440.8
New York	317.0
Vermont/NH	437.1
Nebraska	532.4
Iowa	606.4
Pennsylvania	451.6
New Jersey	688.9
Colorado	744.8
Kansas	689.2
Missouri	738.3
Illinois	606.9
Ohio	634.0
West Virginia	621.2
Virginia	872.8
Arizona	948.4
New Mexico	1,093.9
Oklahoma	1,006.0
Arkansas	1,084.6
Tennessee	1,026.9
North Carolina	1,000.9
Texas	961.6
Louisiana	870.6
Mississippi/Alabama	931.0
Florida	926.3
Hawaii	767.9

Map based on Longitude (generated) and Latitude (generated). Color shows sum of Burglary. The marks are labeled by sum of Burglary. Details are shown for State.

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