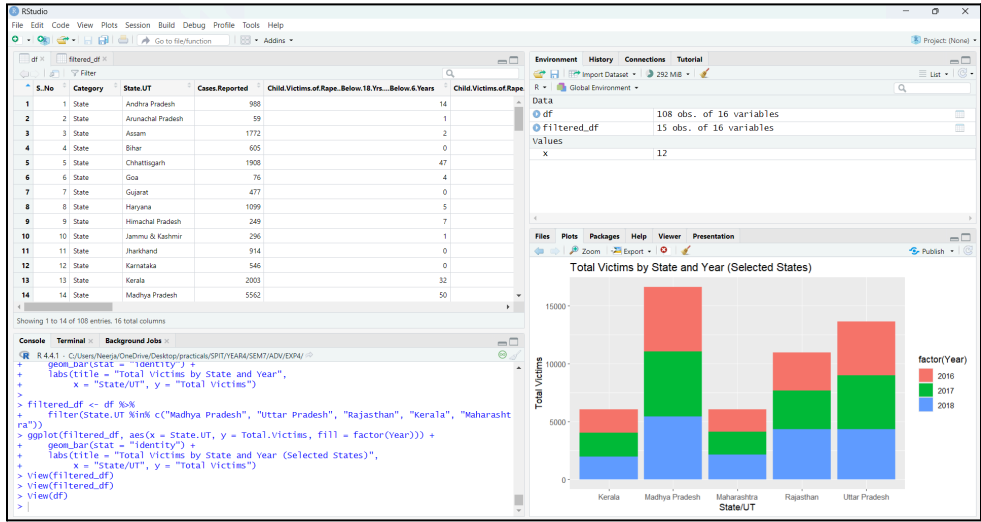




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[Knowledge is Nectar]

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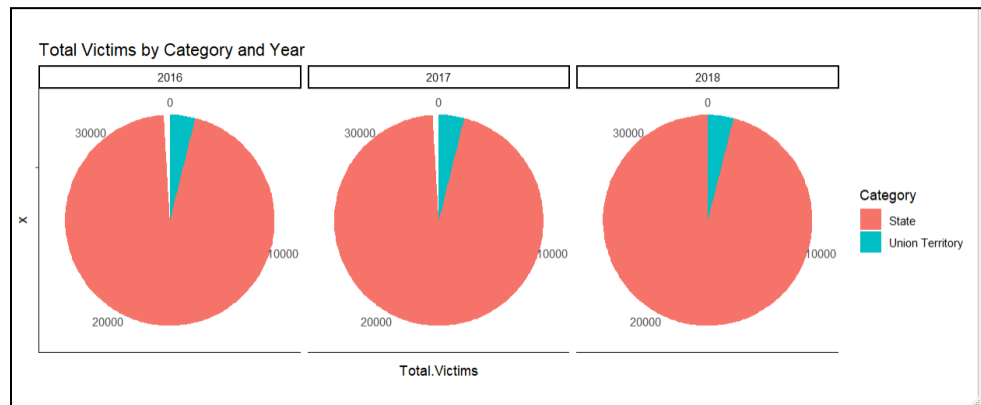
Name	Ms Neerja Doshi
UID	2021300029
DIV	BE COMPS [ADV -> BATCH F]
ADV EXP 4	

AIM	To use Rstudio and make visualization on Law and Order Dataset
Dataset Particulars	<p>Name: Crime Dataset</p> <p>Link: https://www.kaggle.com/datasets/nehaprabhavalkar/crime-in-india/data</p> <p>The above link has “Victims of Rape” folder.</p> <p>All three excel sheet available in the folder are combined to form the dataset which is used in this experiment.</p>
Published Graphs on R Pubs	<p>Click here :)</p> <p>https://rpubs.com/Neerja</p>
R studio Interface	

Analysis

Pie Chart :

```
> ggplot(df, aes(x = "", y = Total.Victims, fill = Category)) +  
+   geom_bar(stat = "identity") +  
+   coord_polar(theta = "y") +  
+   facet_wrap(~ Year) + theme_classic() +  
+   labs(title = "Total Victims by Category and Year")  
> |
```

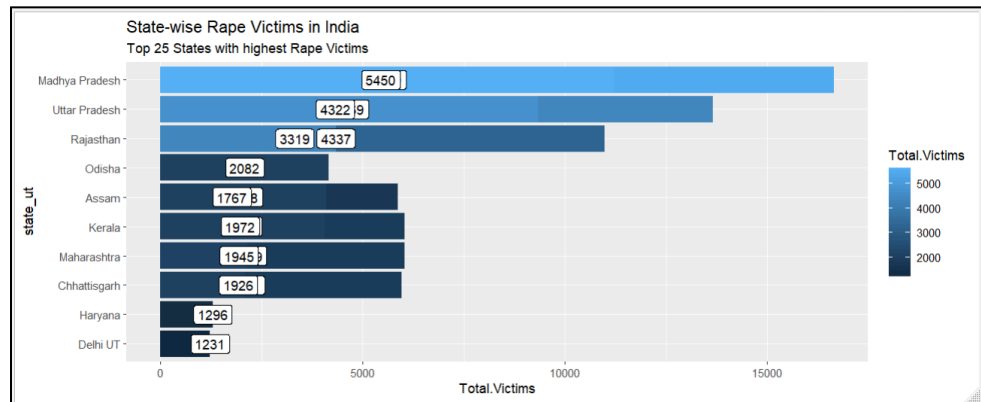


- 1) As the population in states cummaliavly is greater than that of Union Territories , its clear the victime count in states is more,
- 2) Further in the graphs below ; we can see that which list of States and Union Terrirtories which highest and lowest victim count.
- 3) The lowest victim count is seen in Union Territories of Lakswadweep , D&N Haveli , Pudicherry and Daman & Diu.
- 4) The hughes victime count is seen in the central part of India .
- 5) A possible reason can be high populatio of these states.

1) Bar Chart :

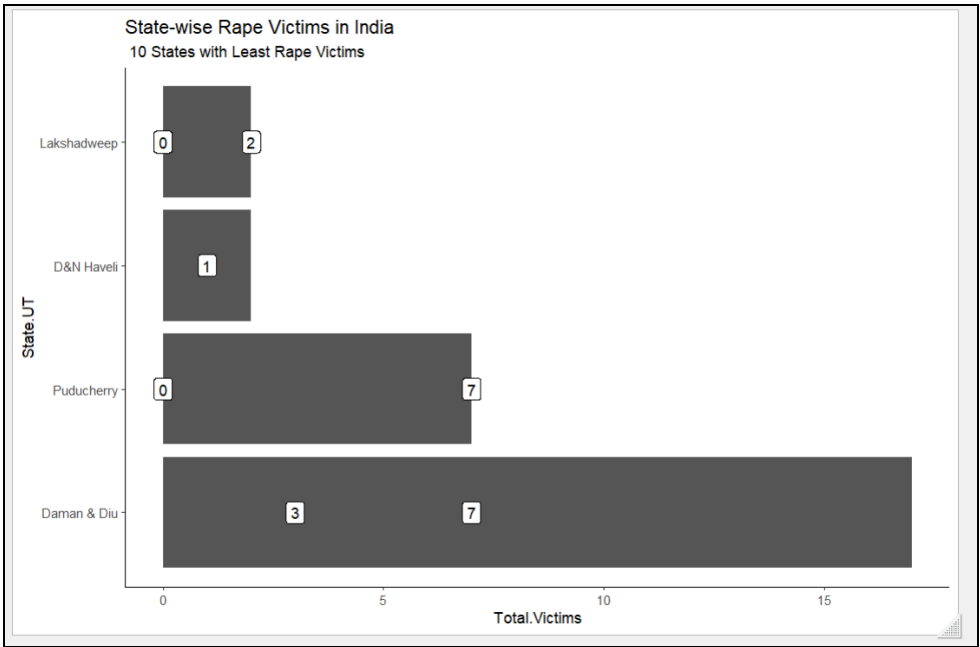
a) 25 State with highest Rape Victims

```
> library(forcats)
>
> df %>%
+   select(one_of('State.UT', 'Total.Victims')) %>%
+   arrange(desc(Total.Victims)) %>%
+   head(25) %>%
+   mutate(state_ut = fct_reorder(State.UT, Total.Victims)) %>%
+   ggplot() +
+   geom_col(aes(y = state_ut, x = Total.Victims, fill = Total.Victims)) +
+   geom_label(aes(y = state_ut, x = Total.Victims, label = Total.Victims)) +
+   labs(title = 'State-wise Rape Victims in India',
+        subtitle = 'Top 25 States with highest Rape Victims')
> |
```



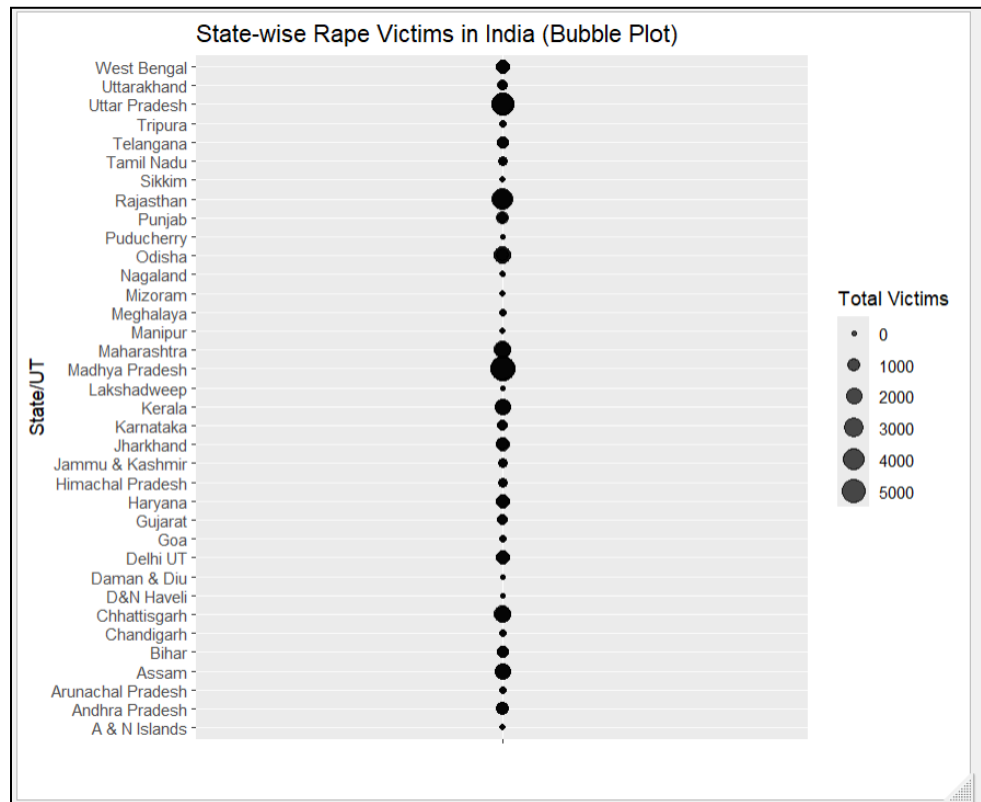
b) Regions with Lowest Rape victims

```
> df %>% select ('State.UT','Total.Victims')%>%
+   arrange(Total.Victims)%>%
+   head(10)%>%
+   mutate(State.UT = reorder(State.UT,desc(Total.Victims))) %>%
+   ggplot() + geom_col(aes(y = State.UT, x = Total.Victims)) +
+   geom_label(aes(y = State.UT, x = Total.Victims,label = Total.Victims)) +
+   theme_classic() +
+   labs(title = 'State-wise Rape Victims in India',
+        subtitle = ' 10 States with Least Rape Victims')
> |
```



2) Bubble Plot

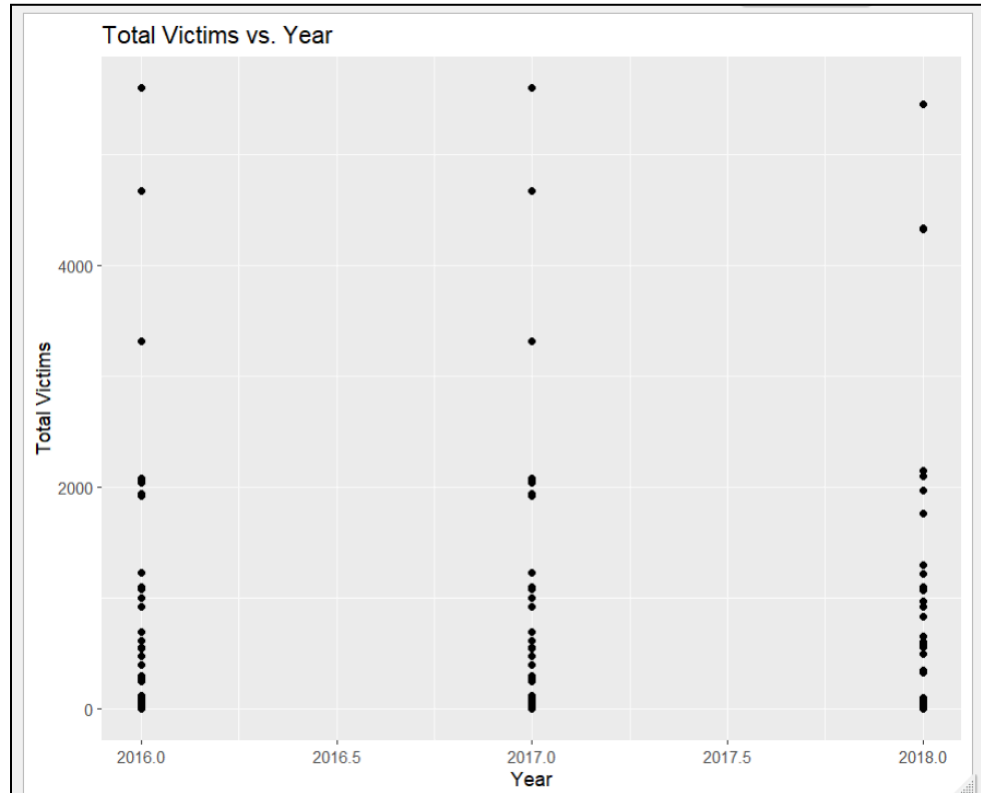
```
> ggplot(df, aes(x = "", y = State.UT, size = Total.Victims)) +  
+   geom_point(alpha = 0.7) +  
+   labs(title = "State-wise Rape Victims in India (Bubble Plot)",  
+        x = "", y = "State/UT") +  
+   scale_size(name = "Total Victims")  
> |
```



- 1) Among the States and union territories having the least count of victims ; the north eastern part of India has the least count.
- 2) A possible reason for this can be the population of count of these states.

3) Scatter Plot

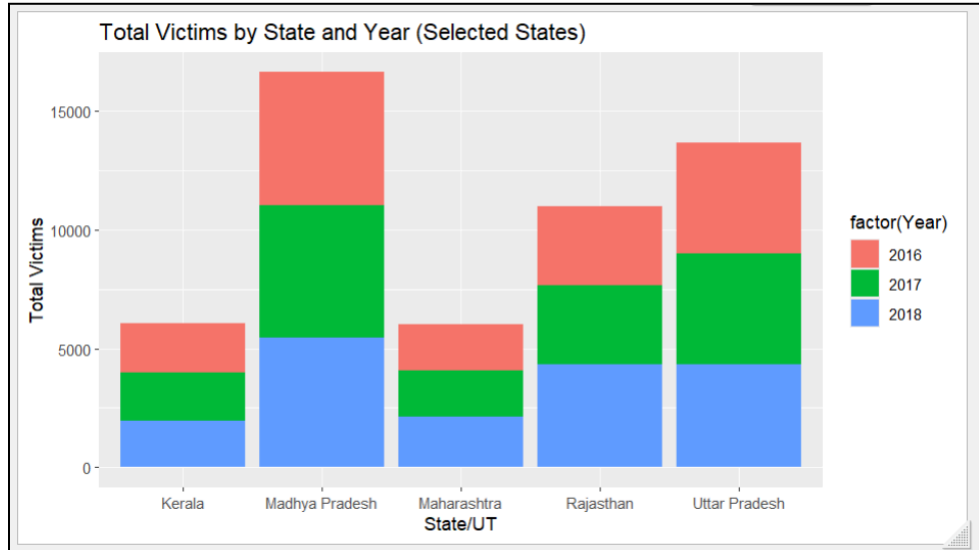
```
> ggplot(df, aes(x = Year, y = Total.Victims)) +  
+   geom_point() +  
+   labs(title = "Total Victims vs. Year",  
+         x = "Year", y = "Total Victims")  
> |
```



- 1) By the above plot ; its clear that every year there is approximate;y the same count of victims in India.
- 2) This proves that the current effort of authorities on laws and regulations against Rape accused hasnt been fruitful in reducing the count.

4) Stacked Bar graph

```
> filtered_df <- df %>%  
+ filter(State.UT %in% c("Madhya Pradesh", "Uttar Pradesh", "Rajasthan", "Kerala", "Maharashtra"))  
> ggplot(filtered_df, aes(x = State.UT, y = Total.Victims, fill = factor(Year))) +  
+ geom_bar(stat = "identity") +  
+ labs(title = "Total Victims by State and Year (Selected States)",  
+ x = "State/UT", y = "Total Victims")  
>
```



- 1) The above graph further proves the conclusion derived from the Scatter Plot.
- 2) All the selected states here have the same count of victims across all years.
- 3) Kerala being the state with highest literacy count has lower count as compared to other states in the above graph.
- 4) The same is seen in Maharashtra which is the next state with high literacy count after Kerala amongst the above mentioned states,

Conclusion

By performing this experiment I learnt how to use R Studio well along with the syntax of R language.