Advanced Data Visualization Lab
Sem 7 B.Tech. Program Elective
Manav Padwal 2021700043

Expt 4: Crime Data

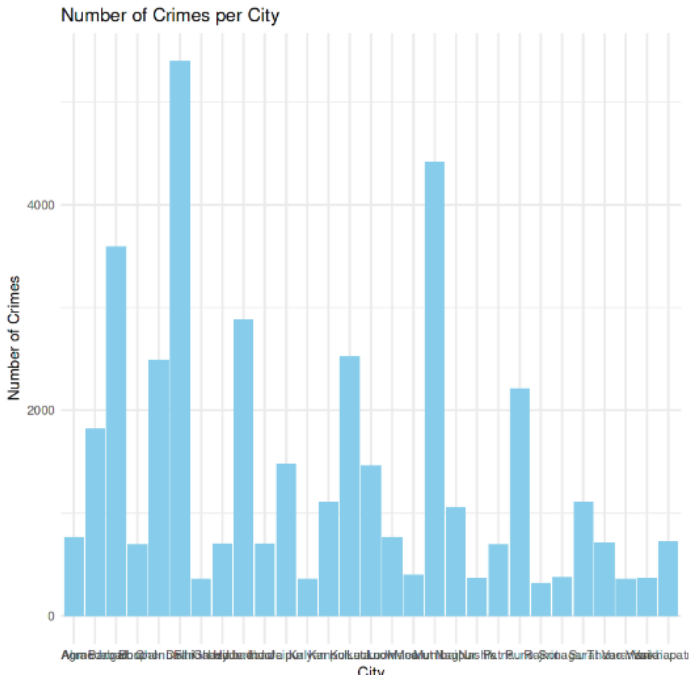
Problem Statement: Create basic charts using R programming language on dataset Crime or Police / Law and Order

- Basic - Bar chart, Pie chart, Histogram, Scatter plot, Bubble plot
- Write observations from each chart

Software Used: R
Dataset Used: Indian Crimes Dataset

1. Bar Chart

```
# Bar chart for the number of crimes per city
ggplot(crime_data, aes(x = City)) +
  geom_bar(fill = "skyblue") +
  labs(title = "Number of Crimes per City", x = "City", y = "Number of Crimes") +
  theme_minimal()
```



Delhi and Mumbai have the highest crime rates.

2. Pie Chart

[9]:

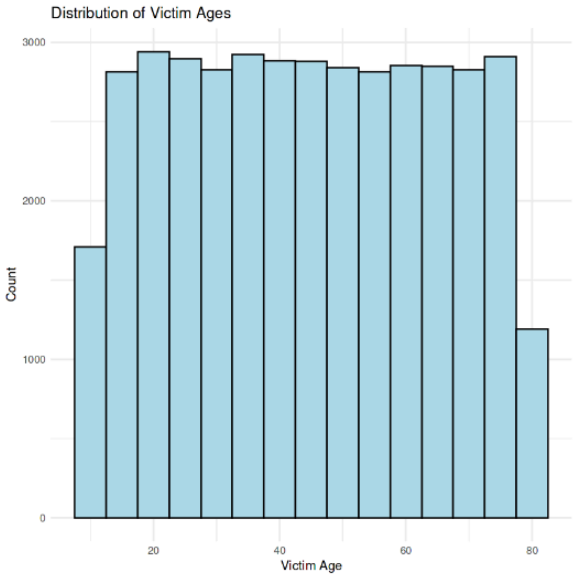
```r
# Pie chart for the distribution of crimes by weapon used
weapon_distribution <- table(crime_data$Weapon.Used)

# Create the pie chart
pie(weapon_distribution,
    labels = names(weapon_distribution),
    main = "Distribution of Crimes by Weapon Used",
    col = rainbow(length(weapon_distribution)))
```

There is almost equal distribution in the means used.

3. Histogram

Cut cell

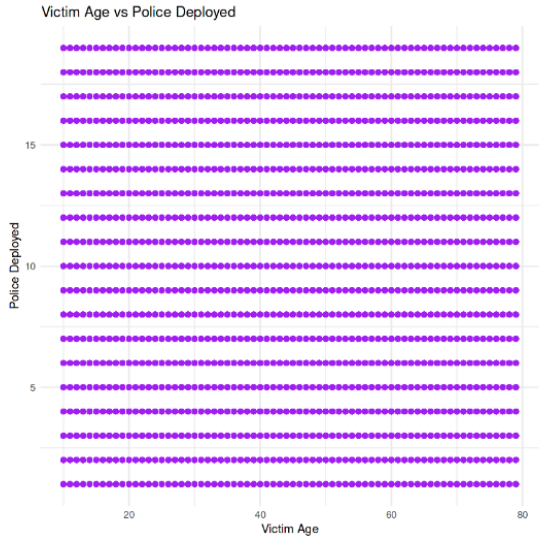
```r
# Histogram for victim age
ggplot(crime_data, aes(x = Victim.Age)) +
  geom_histogram(binwidth = 5, fill = "lightblue", color = "black") +
  labs(title = "Distribution of Victim Ages", x = "Victim Age", y = "Count") +
  theme_minimal()
```



It's somewhat a flat normal distribution over age.

4. Scatter Plot

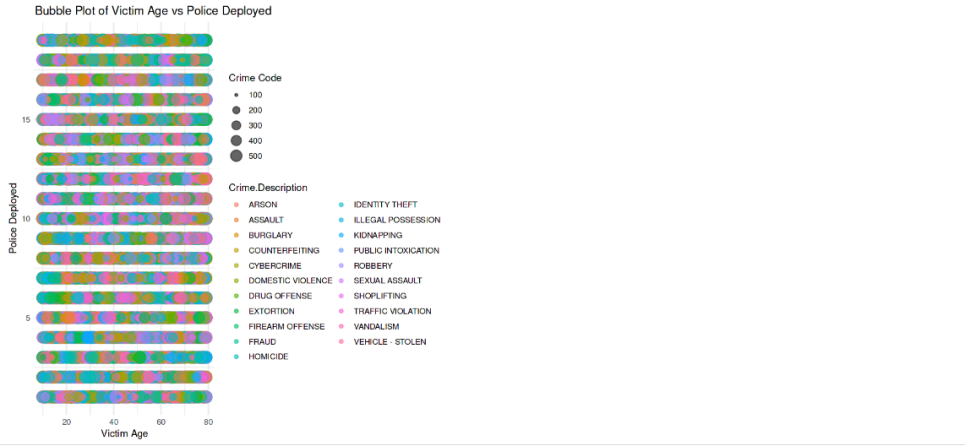
```
[12]:
# Scatter plot for victim age vs police deployed
ggplot(crime_data, aes(x = Victim.Age, y = Police.Deployed)) +
  geom_point(color = "purple") +
  labs(title = "Victim Age vs Police Deployed", x = "Victim Age", y = "Police Deployed") +
  theme_minimal()
```



The number of police deployed is almost uniform with victim age.

5. Bubble Plot

```
# Bubble plot for crime type, victim age, and police deployed
ggplot(crime_data, aes(x = Victim.Age, y = Police.Deployed, size = Crime.Code, color = Crime.Description))
  geom_point(alpha = 0.6) +
  labs(title = "Bubble Plot of Victim Age vs Police Deployed", x = "Victim Age", y = "Police Deployed", si
  theme_minimal()
```



The different categories can be observed.