EDA

November 20, 2021

[3]:
```
library(tidyverse)
```

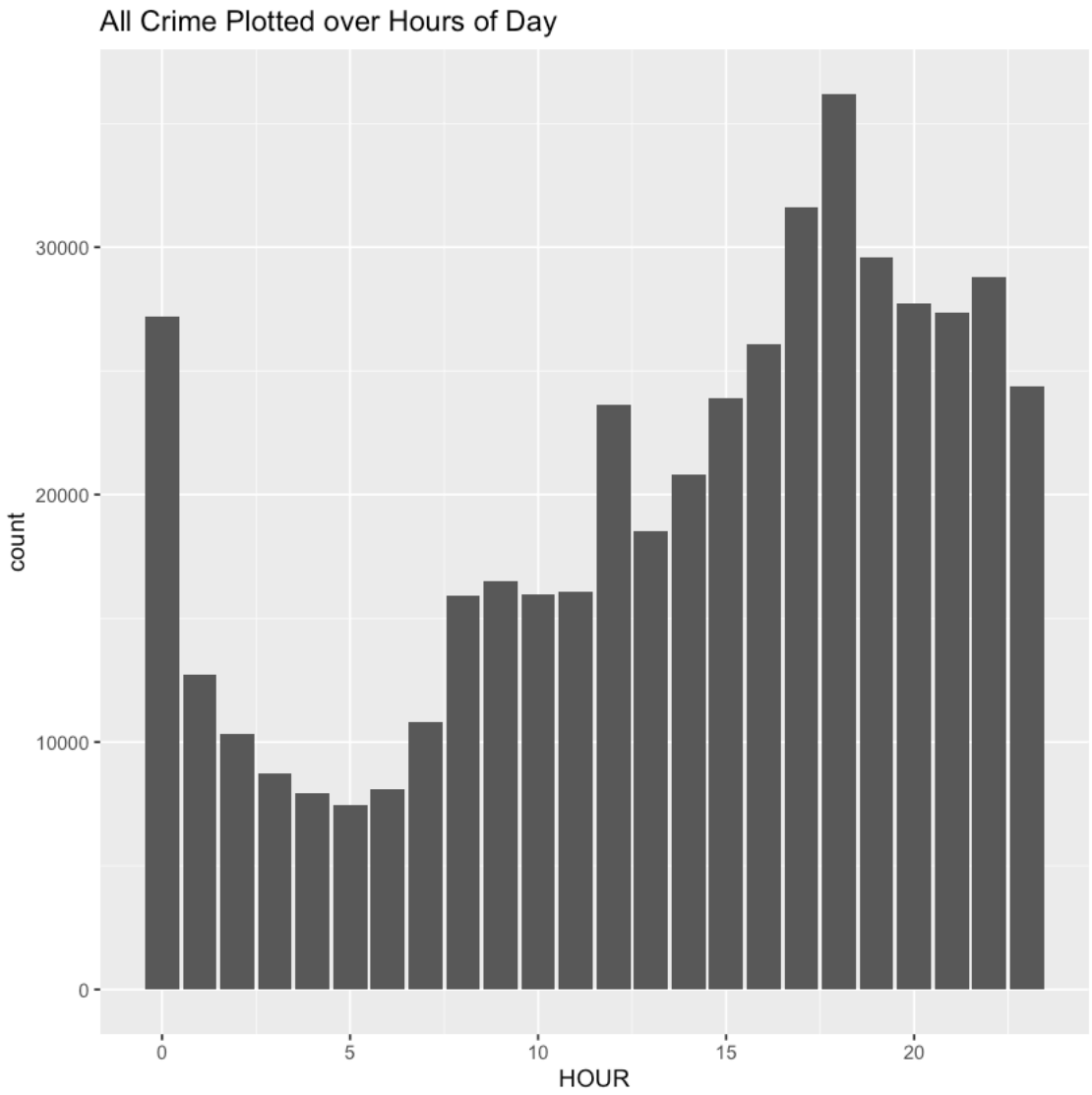
```
── Attaching packages ─────────────────────────────────────── tidyverse 1.3.1 ──

✔ ggplot2 3.3.5     ✔ dplyr   1.0.7
✔ tibble  3.1.5     ✔ stringr 1.4.0
✔ readr   2.0.2     ✔ forcats 0.5.1
✔ purrr   0.3.4

── Conflicts ────────────────────────────────────────── tidyverse_conflicts() ──
✖ dplyr::filter() masks stats::filter()
✖ dplyr::lag()    masks stats::lag()
```

[19]:
```
# Relationship between crime and time of day
df <- read.csv("archive/crime.csv") |>
         select("TYPE", "YEAR", "MONTH", "HOUR", "NEIGHBOURHOOD") |>
        drop_na()
head(df)
```

A data.frame: 6 × 5

	TYPE <chr>	YEAR <int>	MONTH <int>	HOUR <int>	NEIGHBOURHOOD <chr>
1	Other Theft	2003	5	16	Strathcona
2	Other Theft	2003	5	15	Strathcona
3	Other Theft	2003	4	16	Strathcona
4	Other Theft	2003	4	11	Strathcona
5	Other Theft	2003	4	17	Strathcona
6	Other Theft	2003	3	20	Strathcona

[43]:
```
crime_hour_plot <- df |>
            ggplot(aes(x = HOUR)) + geom_bar() + ggtitle("All Crime Plotted␣
 ↪over Hours of Day")
crime_hour_plot
```

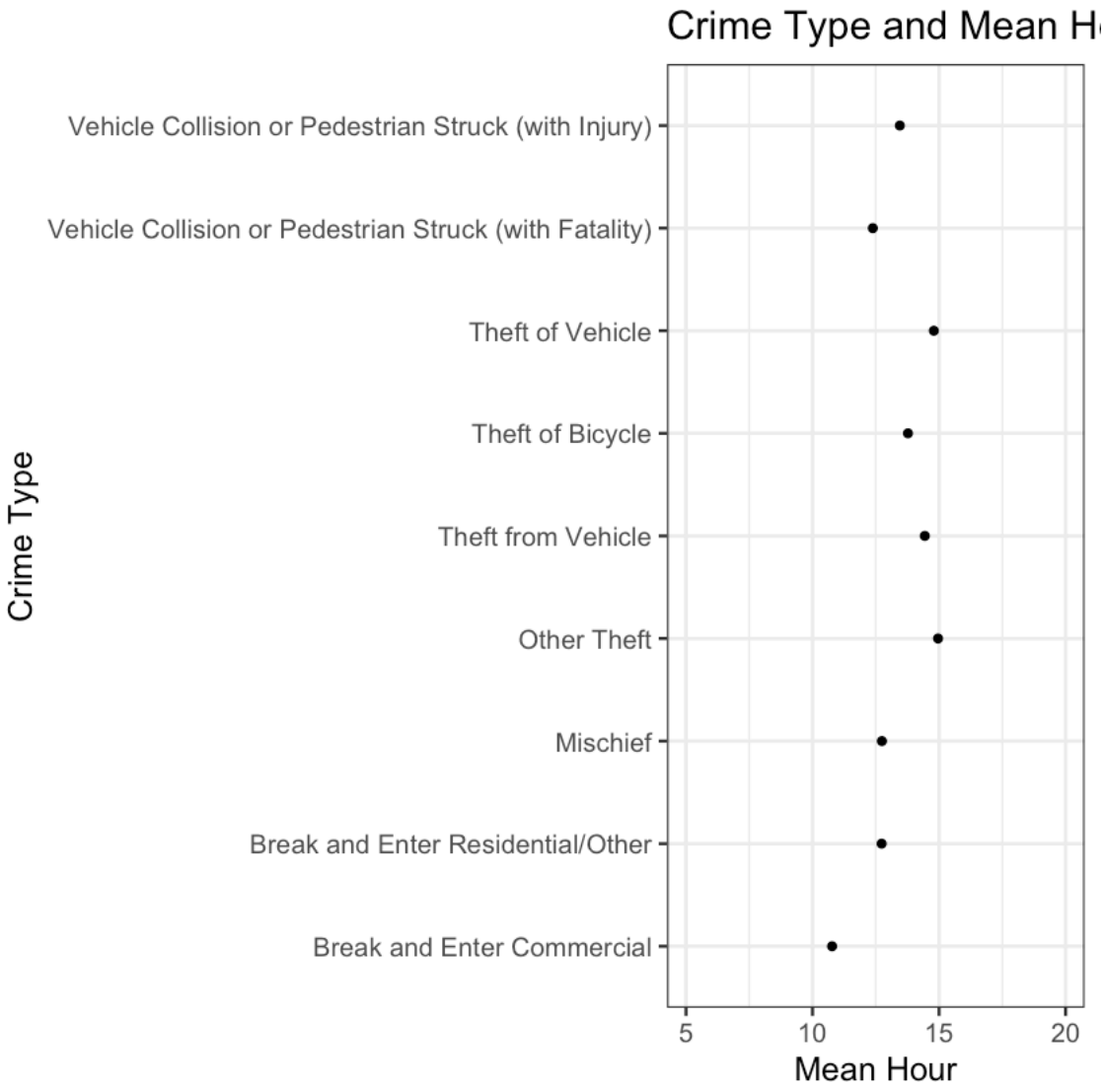


[45]:
```
mean_crime_hour <- df |>
        group_by(TYPE) |>
        summarize(mean_hr =mean(HOUR))
mean_crime_hour
```

A tibble: 9 × 2

TYPE <chr>	mean_hr <dbl>
Break and Enter Commercial	10.77261
Break and Enter Residential/Other	12.73077
Mischief	12.74107
Other Theft	14.95913
Theft from Vehicle	14.43694
Theft of Bicycle	13.77112
Theft of Vehicle	14.79294
Vehicle Collision or Pedestrian Struck (with Fatality)	12.38189
Vehicle Collision or Pedestrian Struck (with Injury)	13.44929

[61]:
```
mean_crime_hour_plot <- mean_crime_hour |>
            ggplot(aes(x = mean_hr, y = TYPE)) + geom_point() + xlim(5, 20)␣
 ↪+theme_bw(base_size = 15) +
            ggtitle("Crime Type and Mean Hour") + xlab("Mean Hour")␣
 ↪+ylab("Crime Type")
mean_crime_hour_plot
```


Crime Type and Mean H
Vehicle Collision or Pedestrian Struck (with Injury)
Vehicle Collision or Pedestrian Struck (with Fatality)
Theft of Vehicle
Theft of Bicycle
Theft from Vehicle
Other Theft
Mischief
Break and Enter Residential/Other
Break and Enter Commercial
Crime Type
5
10
15
20
Mean Hour