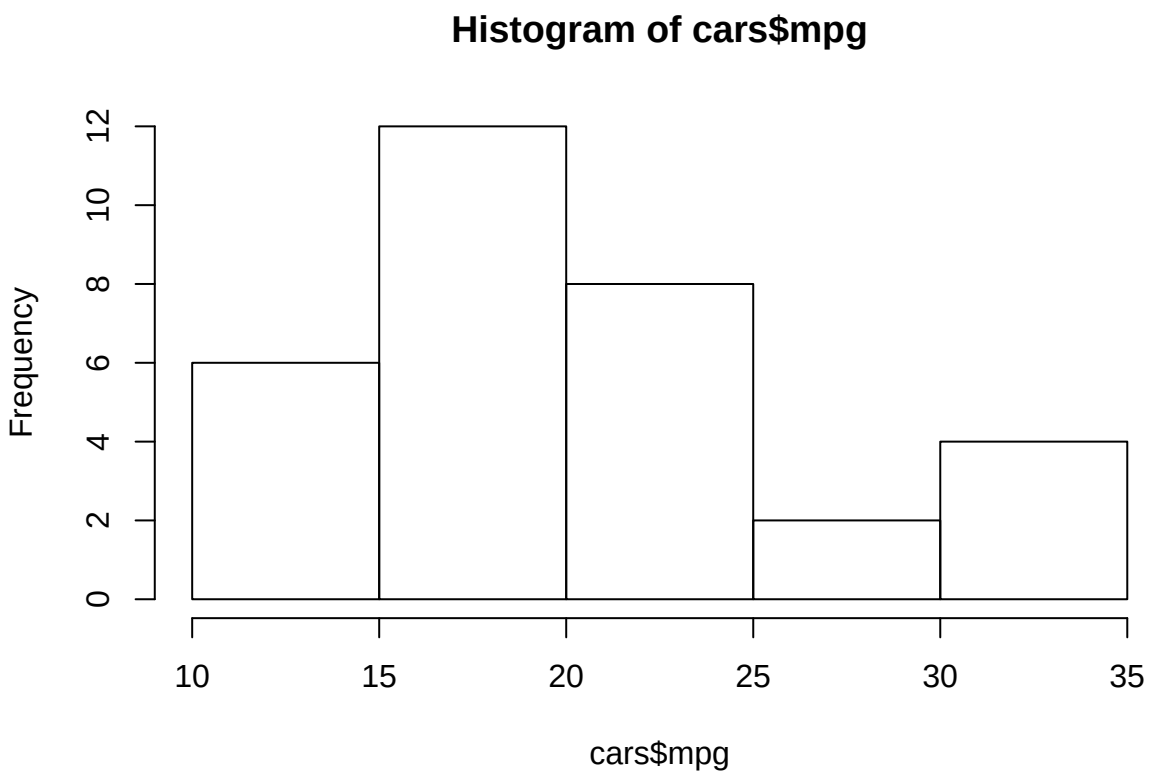
Histograms in R

Reed College, Instructional Technology Services

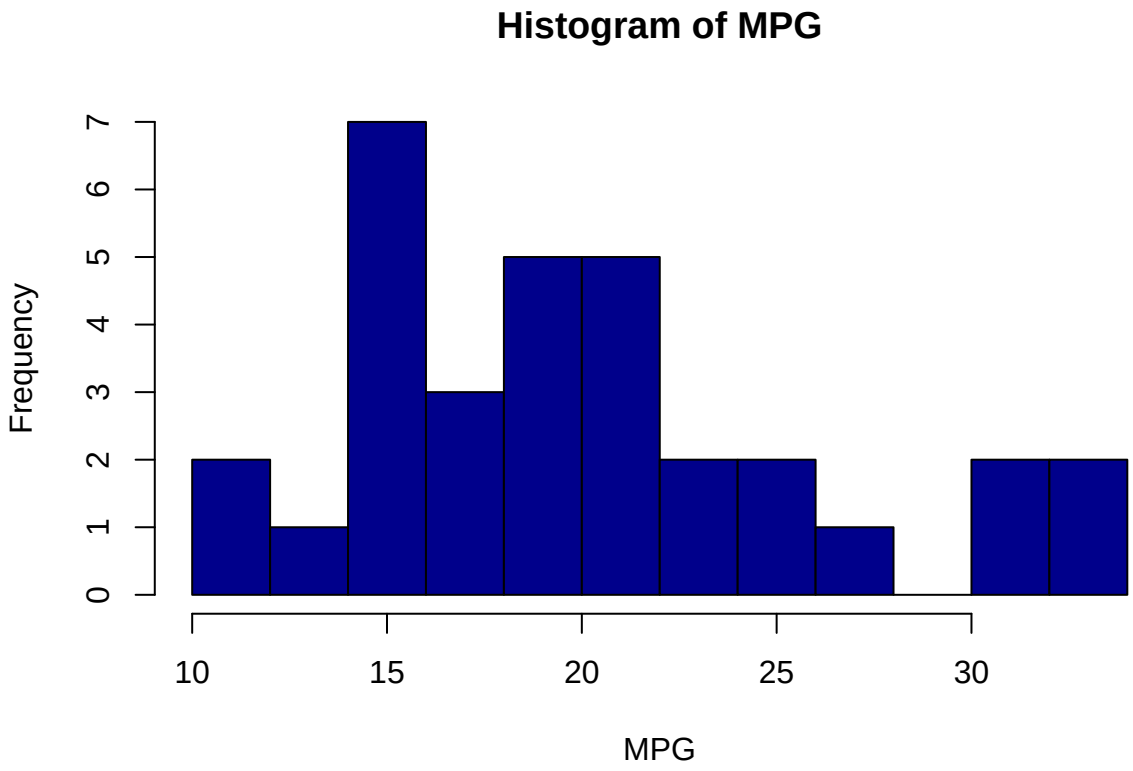
Create Histogram using Base R Commands

```
cars <- mtcars
hist(cars$mpg)
```



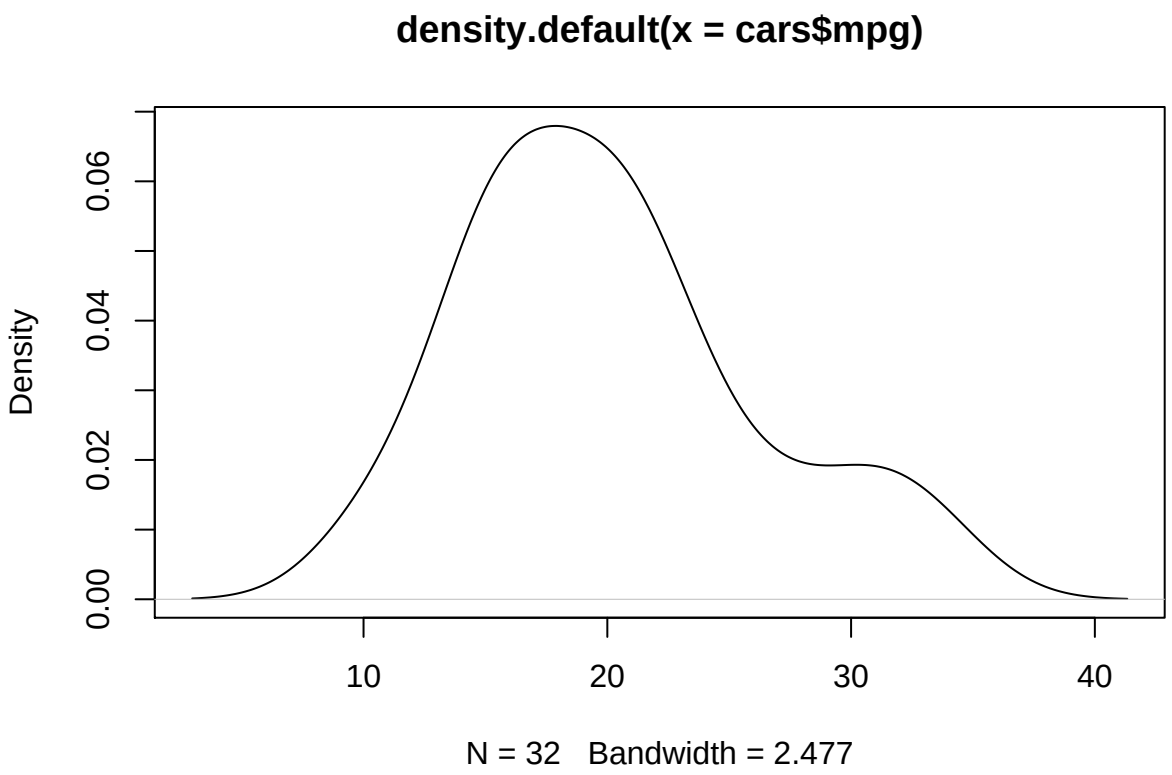
Add Additional Elements to Base Histogram

```
hist(cars$mpg,
     xlab = "MPG", ylab = "Frequency",  main = "Histogram of MPG", # Add labels
     breaks=12,  # set number of bins
     col = "dark blue") # change color
```



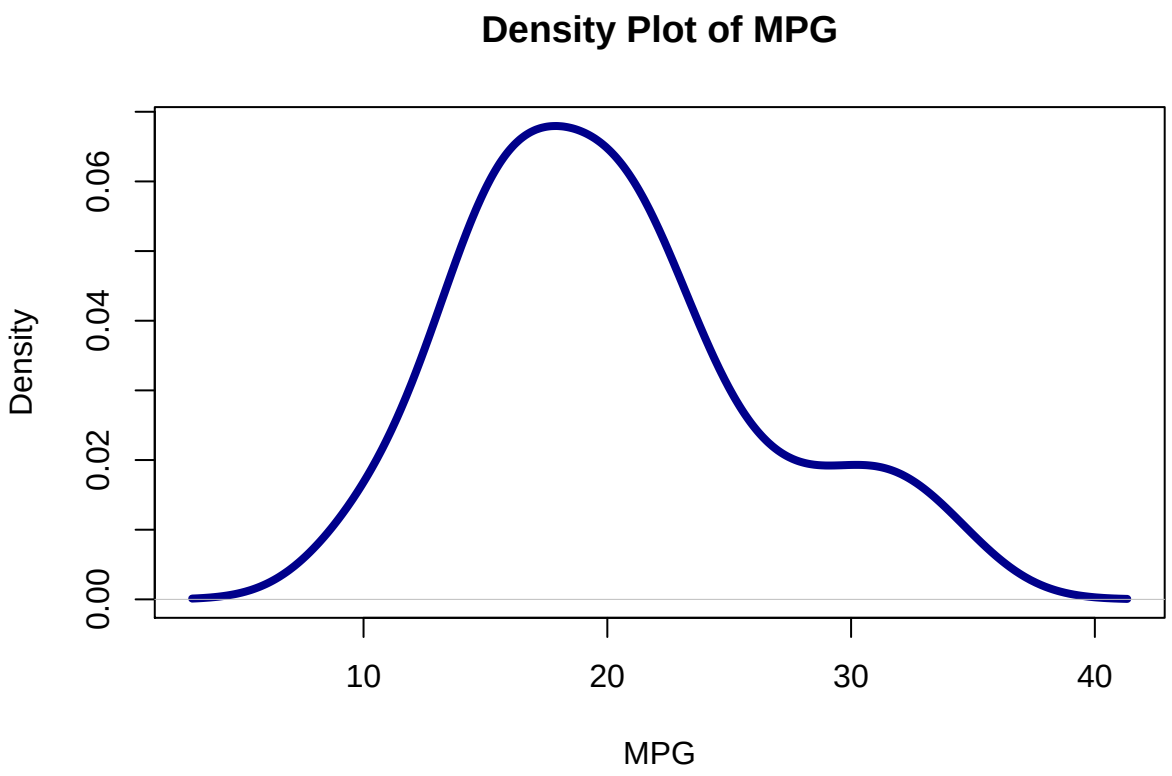
Create Kernal Density using Base R Commands

```
plot(density(cars$mpg))
```



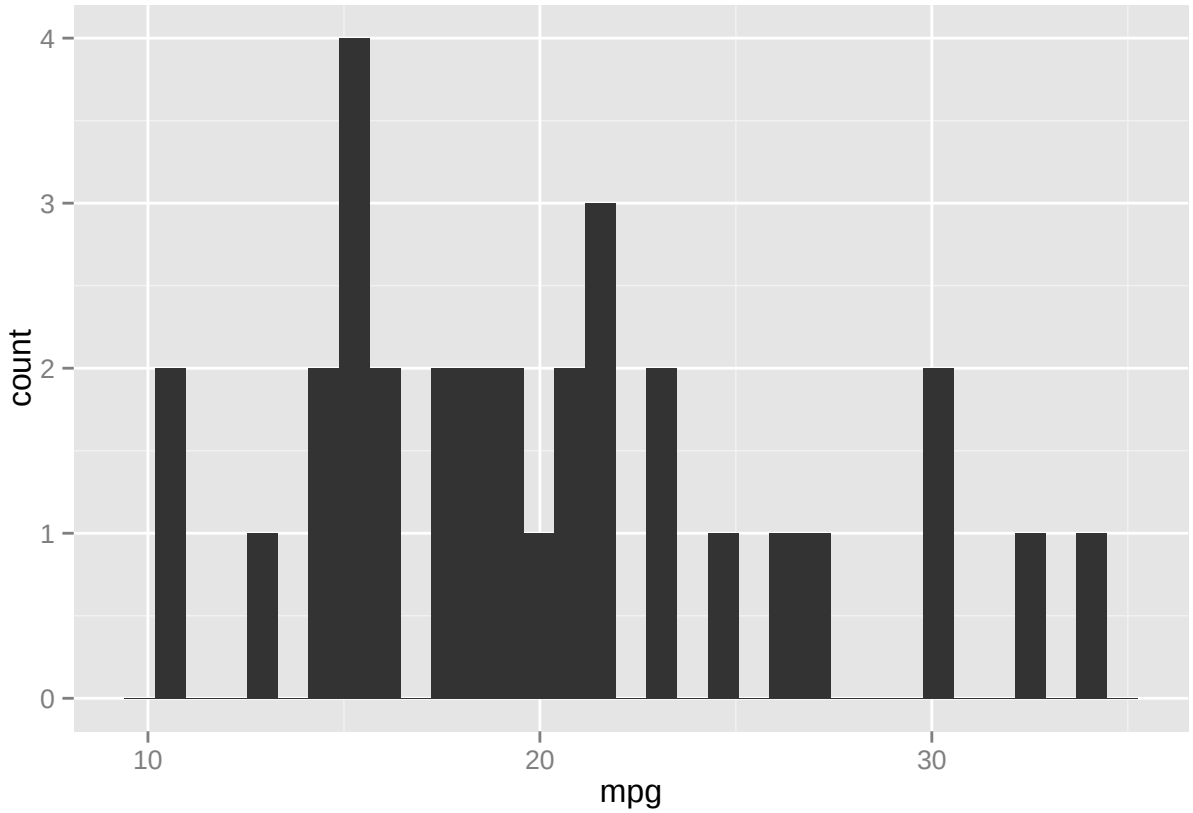
Add Additional Elements to Base Density Plot

```
plot(density(cars$mpg),
     xlab = "MPG", ylab = "Density",  main = "Density Plot of MPG", # Add labels
     col = "dark blue", lwd = 4) # change color and width of line
```



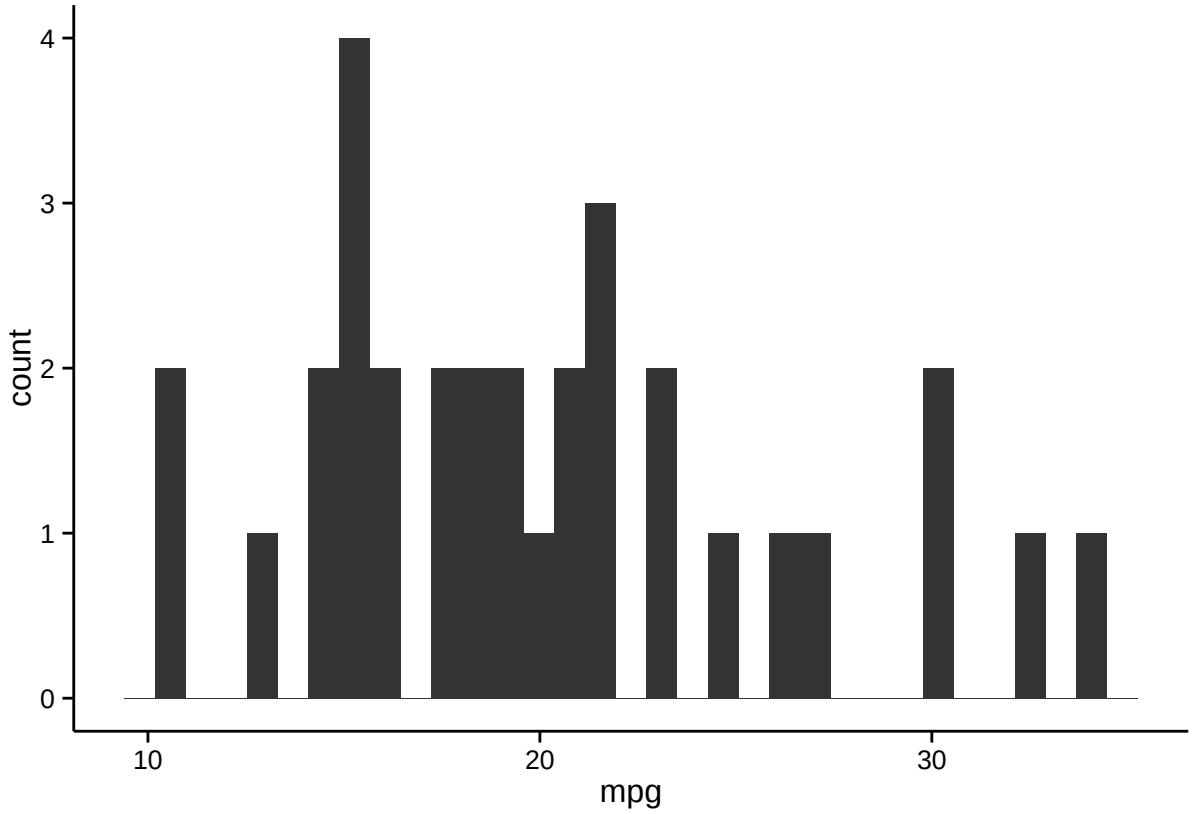
Using ggplot2 to Make a Histogram

```
# This demo requires the 'ggplot' package
if( !is.element("ggplot2", installed.packages()[,1]) )
  install.packages("ggplot2")

suppressPackageStartupMessages(library(ggplot2))

## Base histogram plot in ggplot
ggplot(cars, aes(x=mpg)) + geom_histogram()
```



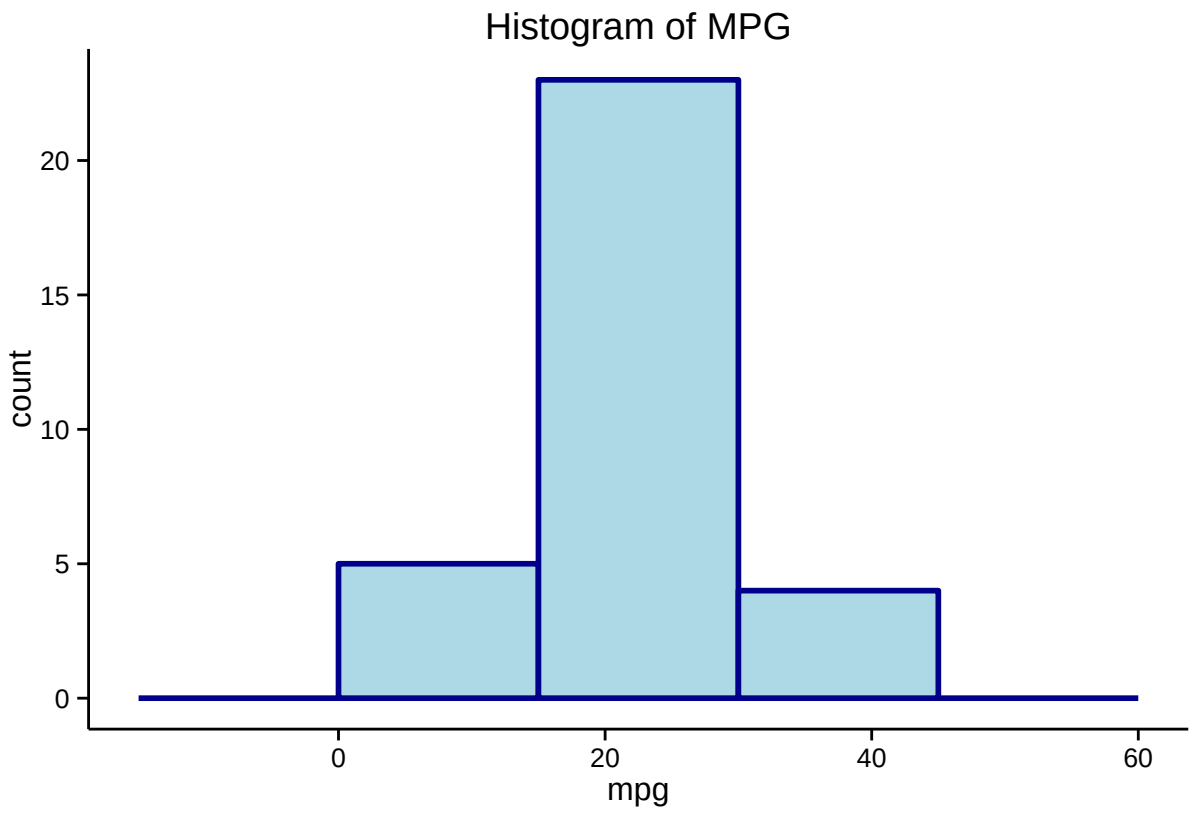
Apply Theme to Histogram Plot

```
ggplot(cars, aes(x=mpg)) +
  geom_histogram() +
  theme_classic()
```



Add Additional Elements to Histogram

```
ggplot(cars, aes(x=mpg)) +
  geom_histogram(color="dark blue", size=1, fill="light blue", binwidth=15) +  # change color and adjus
  ggtitle("Histogram of MPG") + # add a title to the plot
  theme_classic()
```



Using ggplot to Make a Density Plot

```
ggplot(cars, aes(x=mpg)) +
  geom_density(color="dark blue", size=1, fill="light blue") + # change to geom_density for density plo
  ggtitle("Kernal Density of MPG") +
  theme_classic()
```