CHRISTOPHER PRENER, PHD
FALL, 2017

WEEK 02
LECTURE 02A

QUANTITATIVE ANALYSIS

INTRODUCING GGPLOT2

AGENDA

1. `ggplot` Basics
2. Geometric Objects
3. The Plots Tab

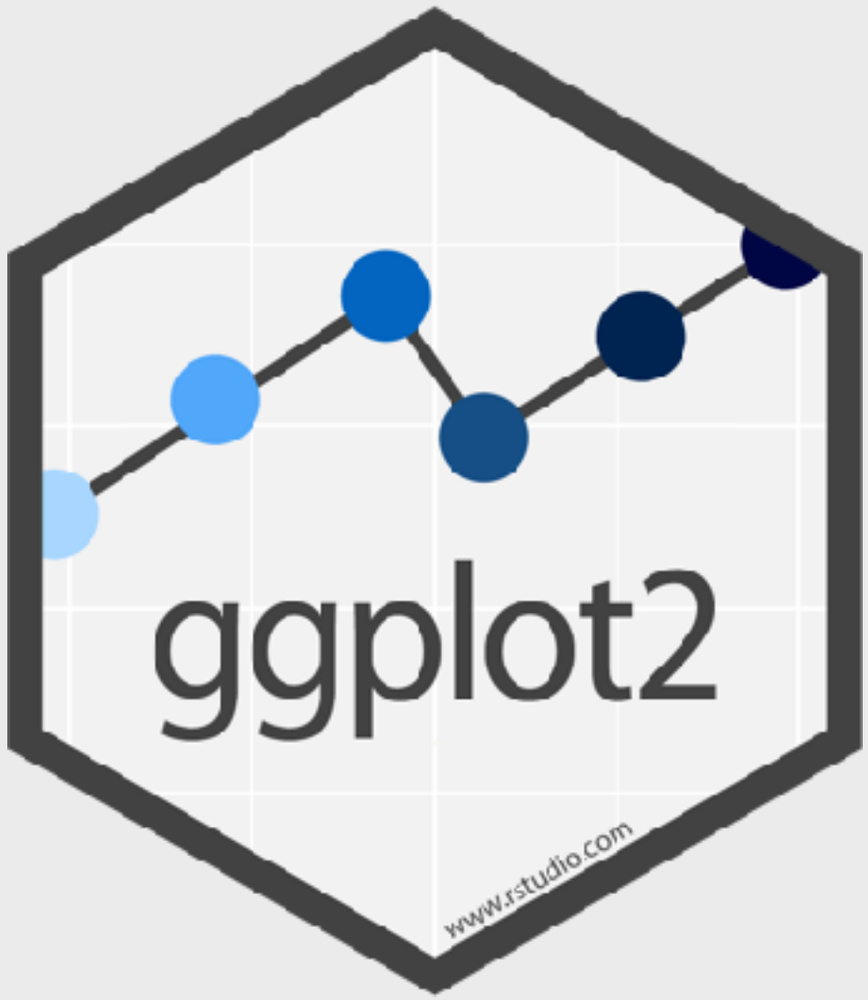
1 GGPLOT BASICS

GGPLOT2

- A core package of the tidyverse used for both exploratory data analysis and production of final plots

- Not the only way to make plots in R but absolutely the best way

- One of the reasons R is so attractive to end users



BASIC FUNCTION

```
ggplot(data = dataFrame)
```

Example - the `mpg` data from `ggplot2`:

```
ggplot(data = mpg)
```

This will produce an empty plot!

BASIC FUNCTION + GEOMETRIC OBJECT

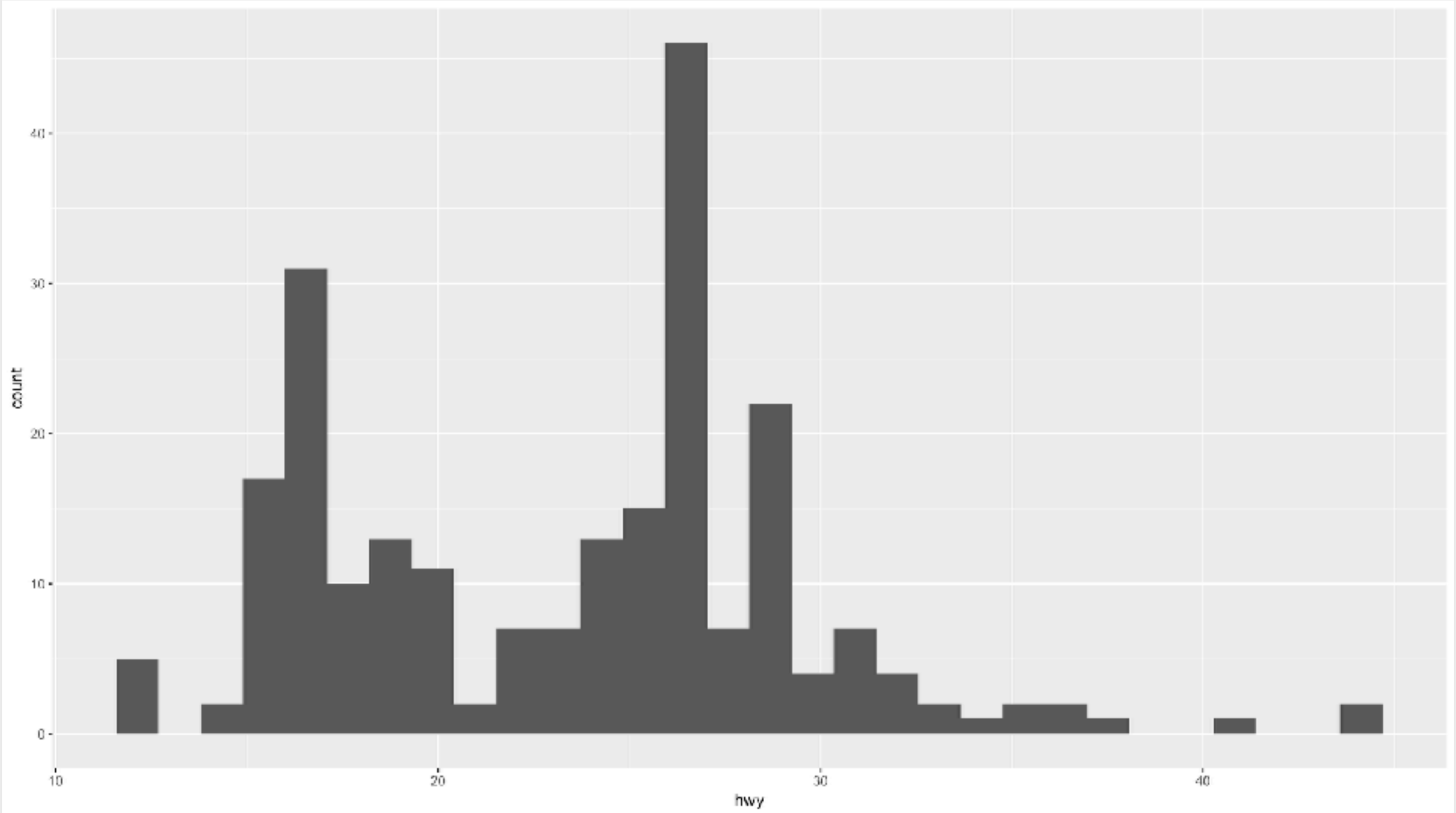
```
ggplot(data = dataFrame) +
   geom(mapping = aes(aesthetic))
```

Example - the `mpg` data from `ggplot2`:

```
ggplot(data = mpg) +
   geom_histogram(mapping = aes(hwy))
```

This geom is for use with one continuous variable

BASIC FUNCTION + GEOMETRIC OBJECT



2 GEOMETRIC OBJECTS

LINE PLOTS

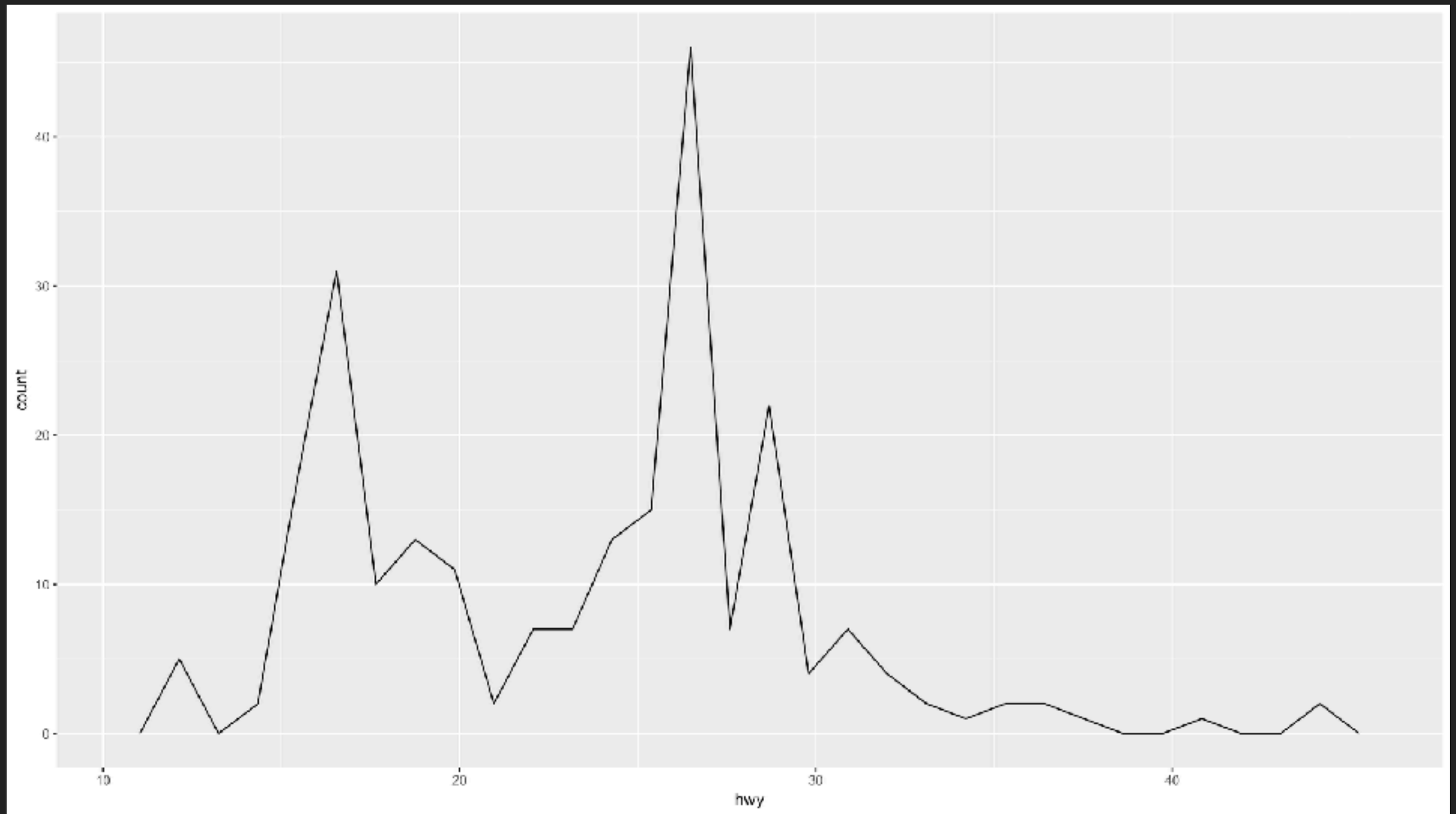
```
ggplot(data = dataFrame) +
   geom_freqpoly(mapping = aes(aesthetic))
```

Example – the mpg data from ggplot2:

```
   ggplot(data = mpg) +
      geom_freqpoly(mapping = aes(hwy))
```

This geom is for use with one continuous variable

LINE PLOTS



BAR PLOTS

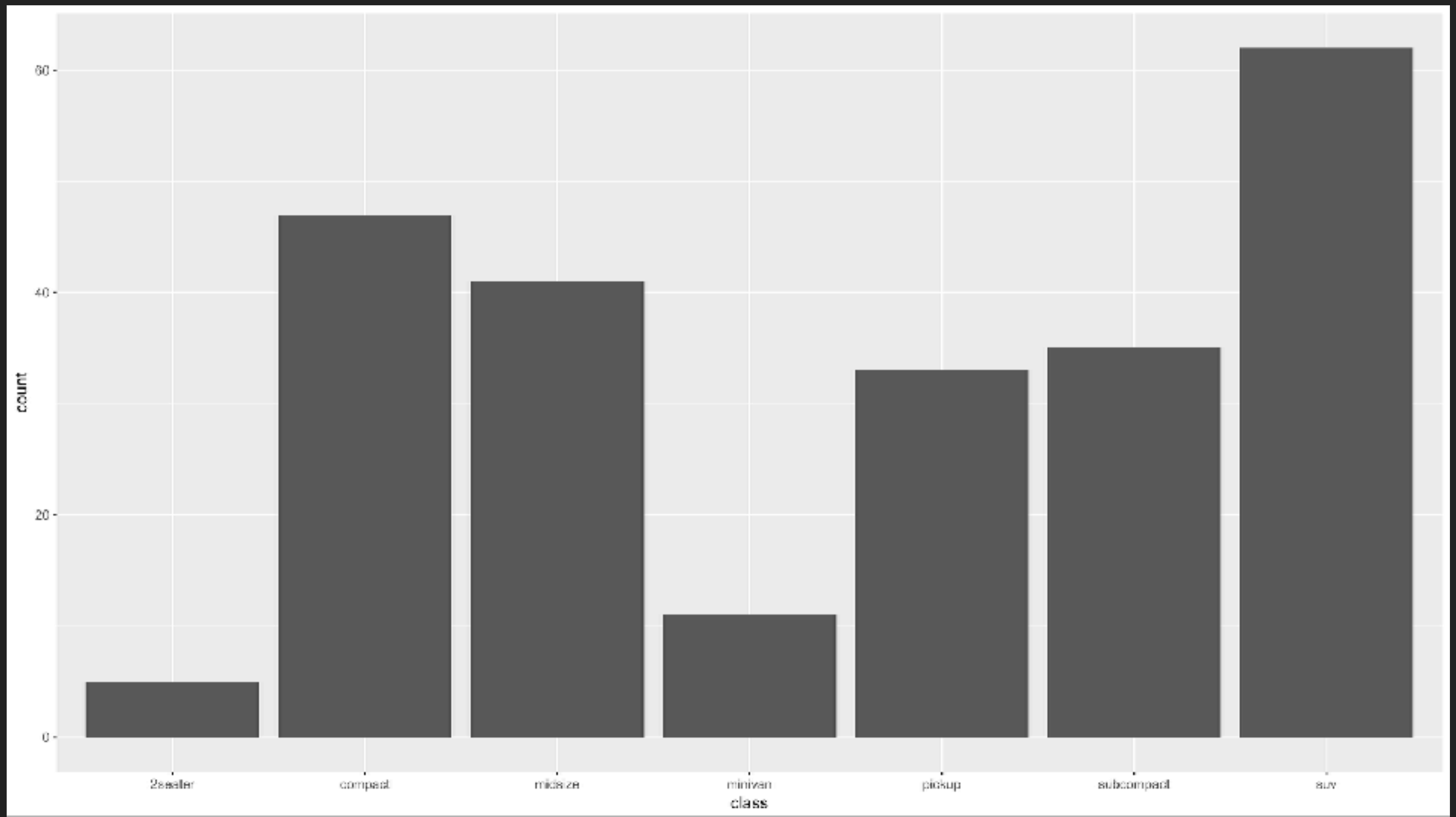
```
ggplot(data = dataFrame) +
   geom_bar(mapping = aes(aesthetic))
```

Example – the mpg data from ggplot2:

```
   ggplot(data = mpg) +
      geom_bar(mapping = aes(class))
```

This geom is for use with one discrete variable

BAR PLOTS


60
40
20
0
count
2seater
compact
midsize
minivan
pickup
subcompact
suv
class

SCATTER PLOTS

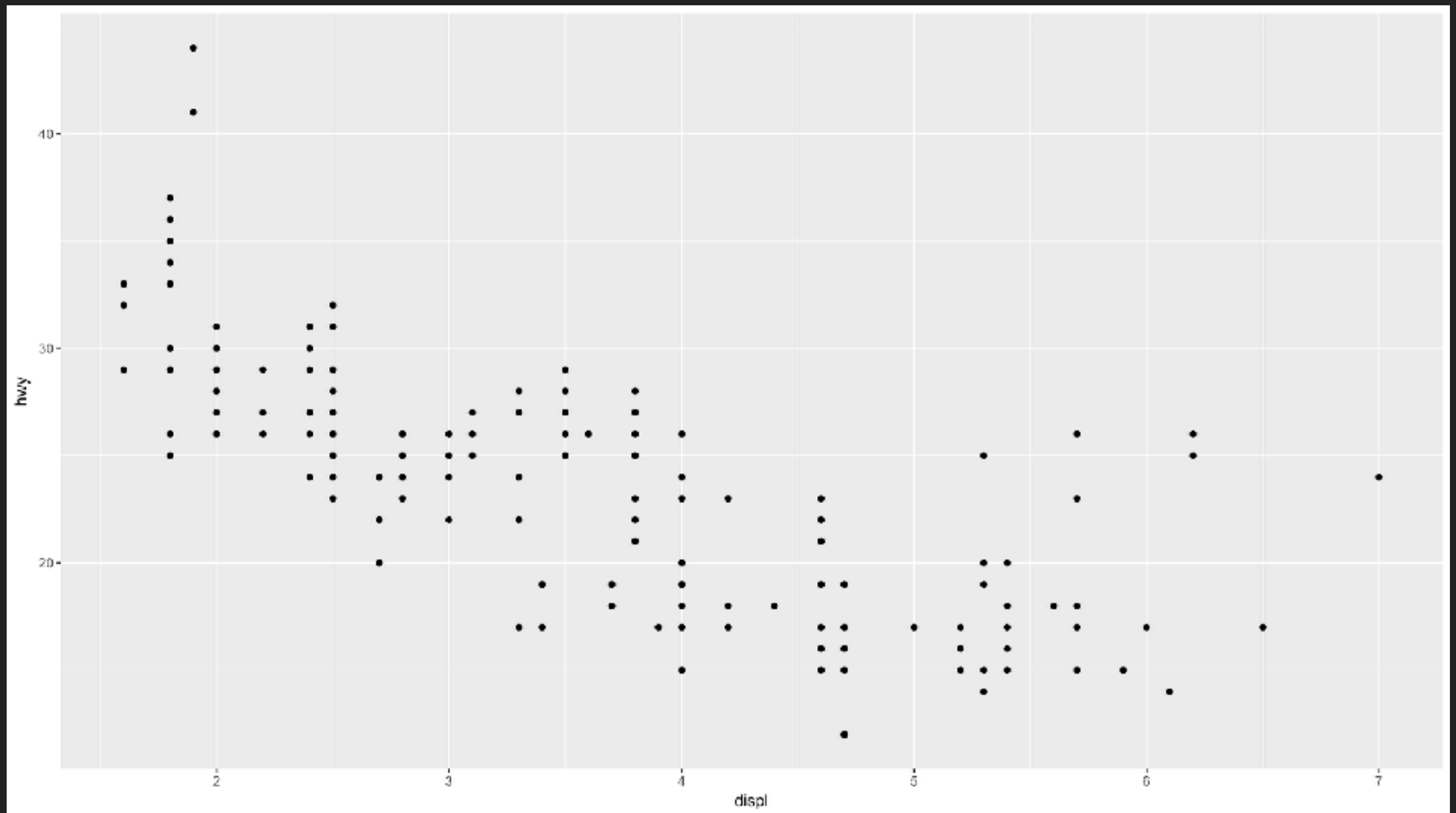
```
ggplot(data = dataFrame) +
   geom_point(mapping = aes(x = var1, y = var2))
```

Example – the mpg data from ggplot2:

```
ggplot(data = mpg) +
   geom_point(mapping = aes(x = displ, y = hwy))
```

This geom is for use with two continuous variables

SCATTER PLOTS



SMOOTHED LINES

```
ggplot(data = dataFrame) +

   geom_smooth(mapping = aes(x = var1, y = var2))
```

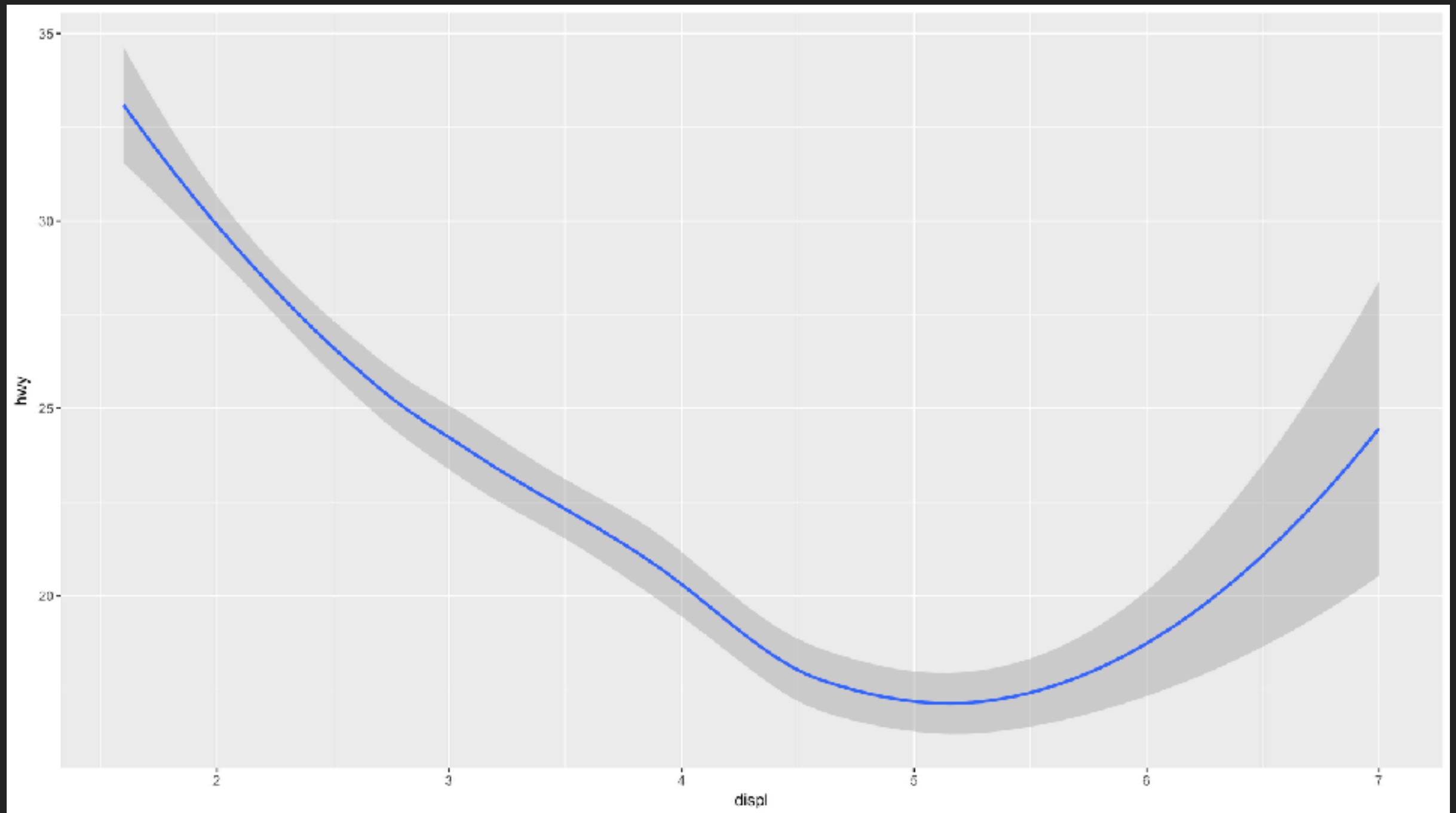
Example – the mpg data from ggplot2:

```
   ggplot(data = mpg) +

      geom_smooth(mapping = aes(x = displ, y = hwy))
```

This geom is for use with two continuous variables

SMOOTHED LINES



BOX PLOTS

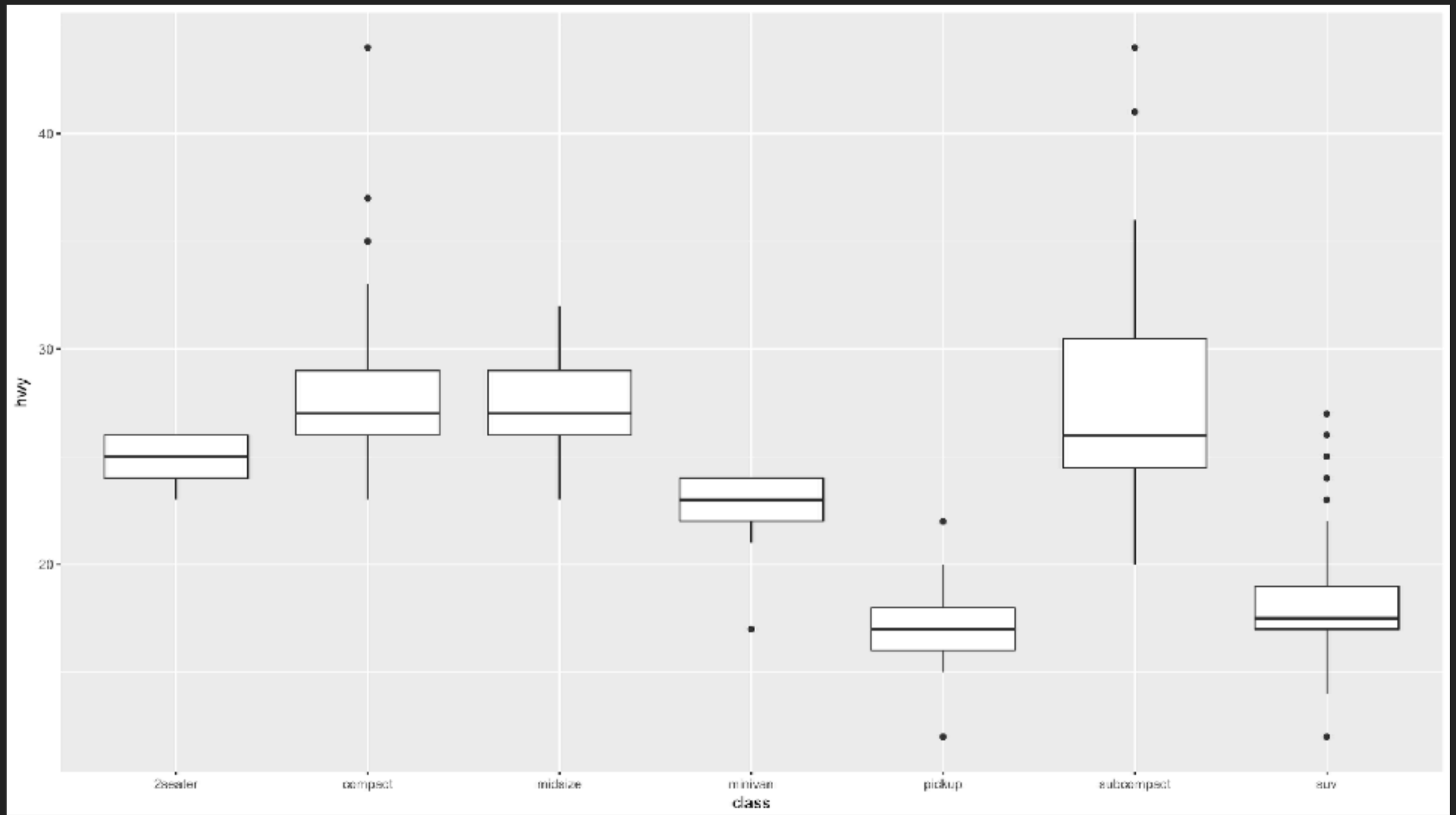
```
ggplot(data = dataFrame) +
   geom_boxplot(mapping = aes(x = var1, y = var2))
```

Example – the mpg data from ggplot2:

```
   ggplot(data = mpg) +
      geom_boxplot(mapping = aes(x = class, y = hwy))
```

This geom is for use with one discrete and one continuous variable

BOX PLOTS


40
30
20
hwy
2seater
compact
midsize
minivan
pickup
subcompact
suv
class

3 THE PLOTS TAB