chapter12 Programming with ggplot2

```
library(ggplot2)
library(gridExtra)
```

12.1 Introduction

code duplication!

12.2 Single Components

More flexibility!! by using function!!

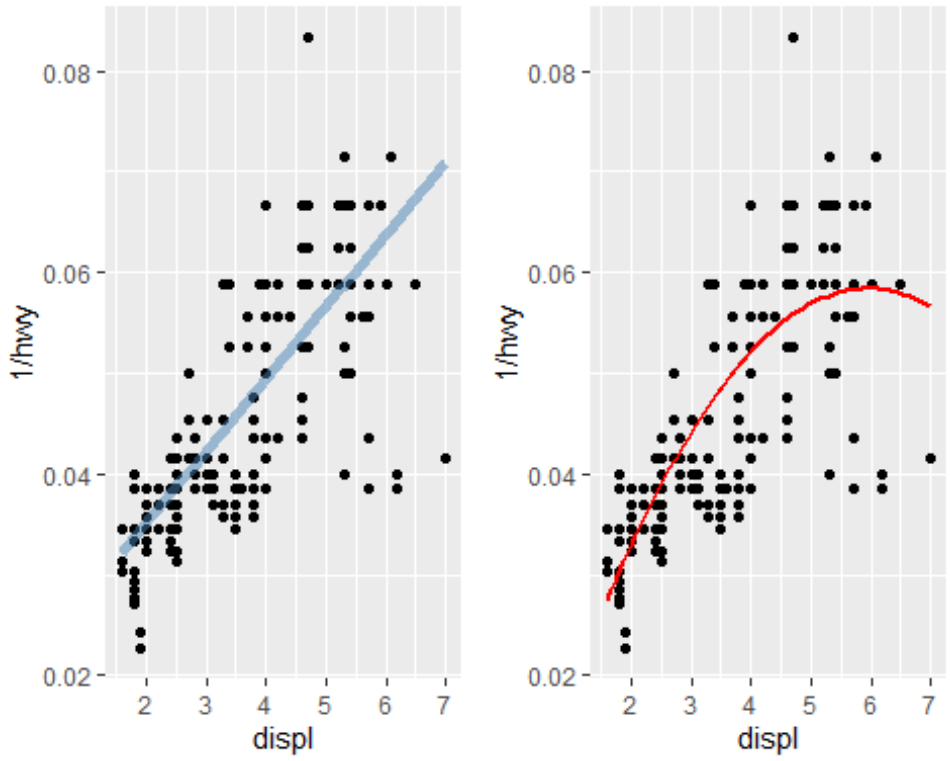
- "…" : allows a function to accept arbitrary additional arguments.

```
geom_lm = function(formula = y~x, colour = alpha("steelblue", 0.5),
                   size = 2, ...){
  geom_smooth(formula = formula, se = FALSE, method = "lm", colour = colour,
size = size)
}

g1 = ggplot(mpg, aes(displ, 1/hwy)) +
  geom_point() +
  geom_lm()

g2 = ggplot(mpg, aes(displ, 1/hwy)) +
  geom_point() +
  geom_lm(y~poly(x,2), size = 1, colour = "red")

grid.arrange(g1,g2, ncol = 2)
```



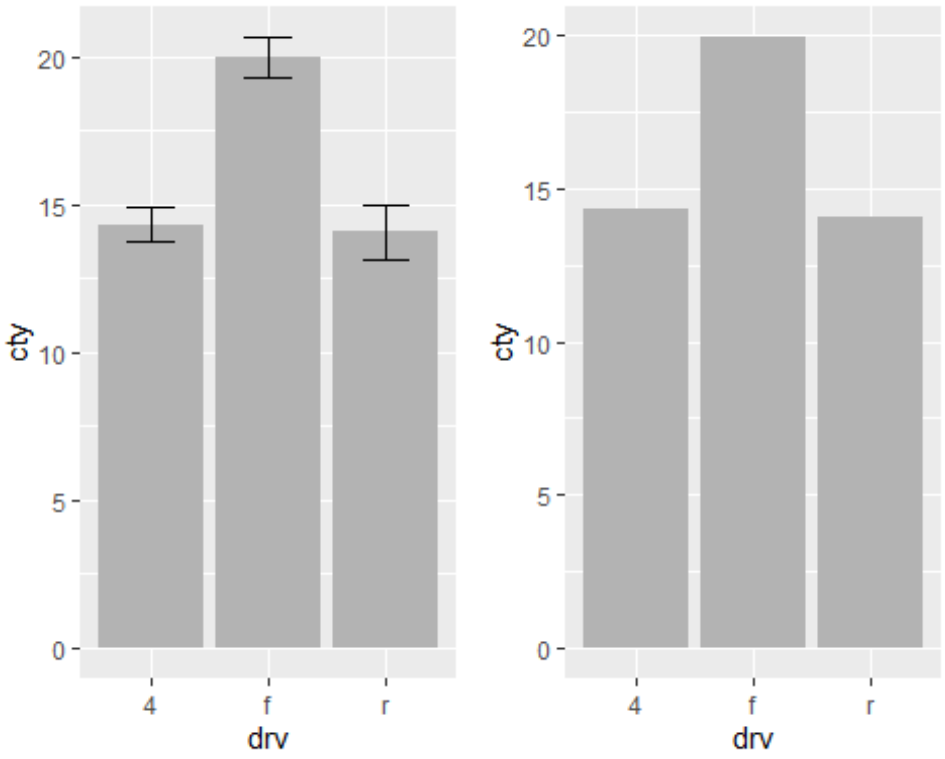
12.3 Multiple Components

Adding multiple components to a plot in on step with a **list**!

```
geom_mean = function(se = TRUE){
  list(
    stat_summary(fun.y = "mean", geom = "bar", fill = "grey70"),
    if (se)
      stat_summary(fun.data = "mean_cl_normal", geom = "errorbar", width = 0.
4)
  )
}

g1 = ggplot(mpg, aes(drv, cty)) + geom_mean()
g2 = ggplot(mpg, aes(drv, cty)) + geom_mean(se = FALSE)

grid.arrange(g1,g2, ncol = 2)
```



12.3.1 Plot Components

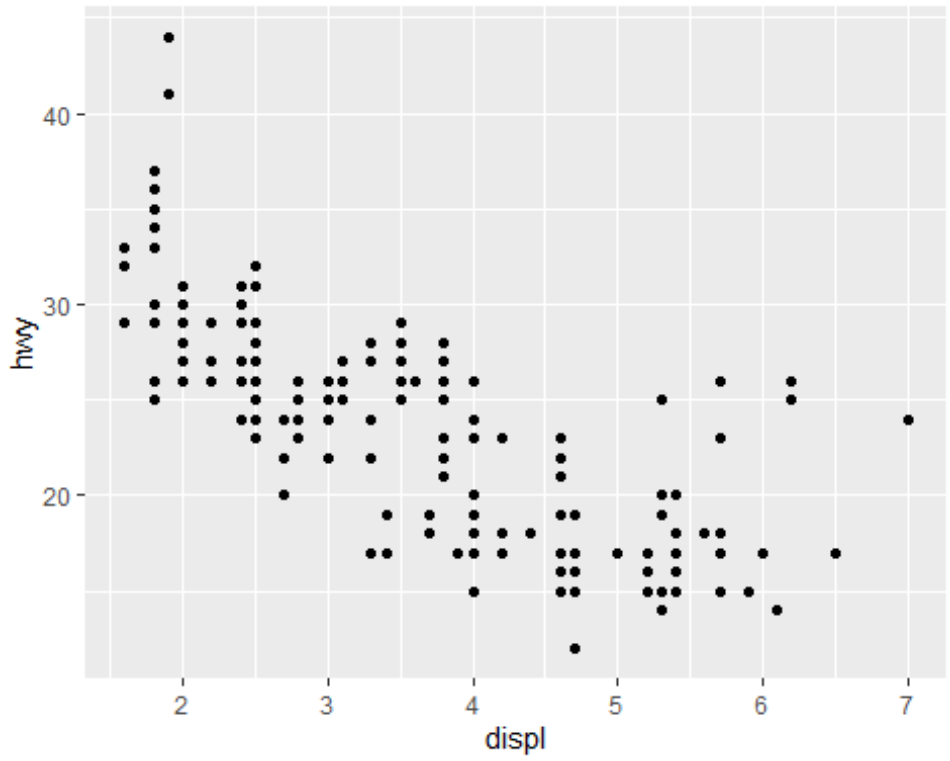
Not only adding layers : you can include - data.frame - aes() object - Scales - Coordinate systems, facetting specification - Theme components

12.5 Functional Programming

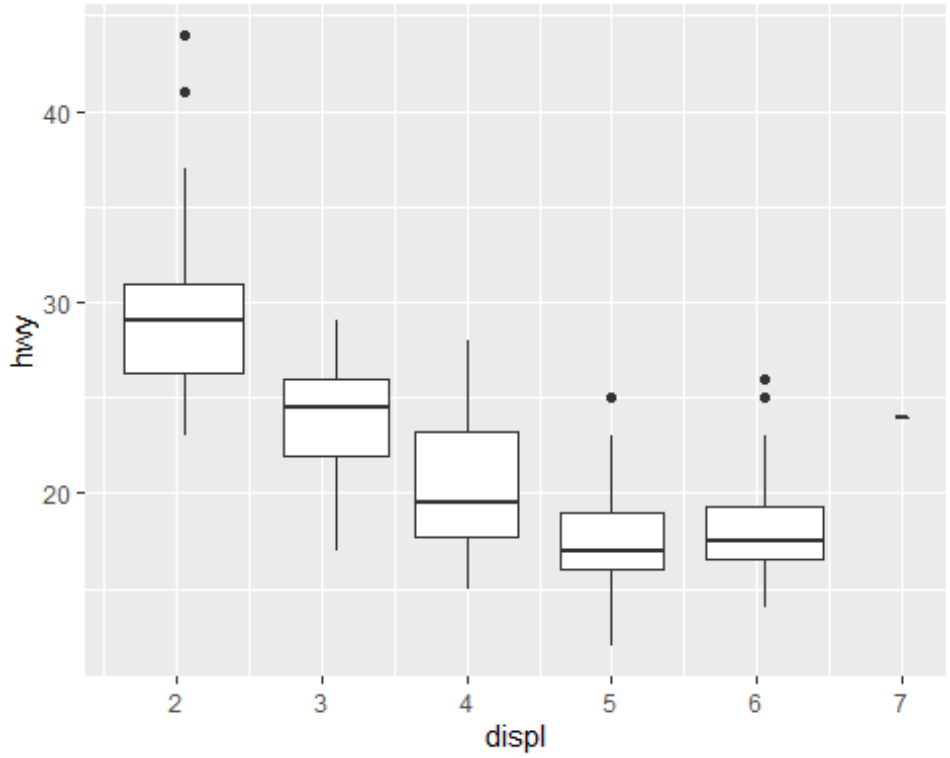
```
geoms <- list(
  geom_point(),
  geom_boxplot(aes(group = cut_width(displ, 1))),
  list(geom_point(), geom_smooth())
)

p <- ggplot(mpg, aes(displ, hwy))
lapply(geoms, function(g) p + g)

## [[1]]
```




```
##
## [[2]]
```



```
##
## [[3]]

## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```