# Exploratory Analysis Overview

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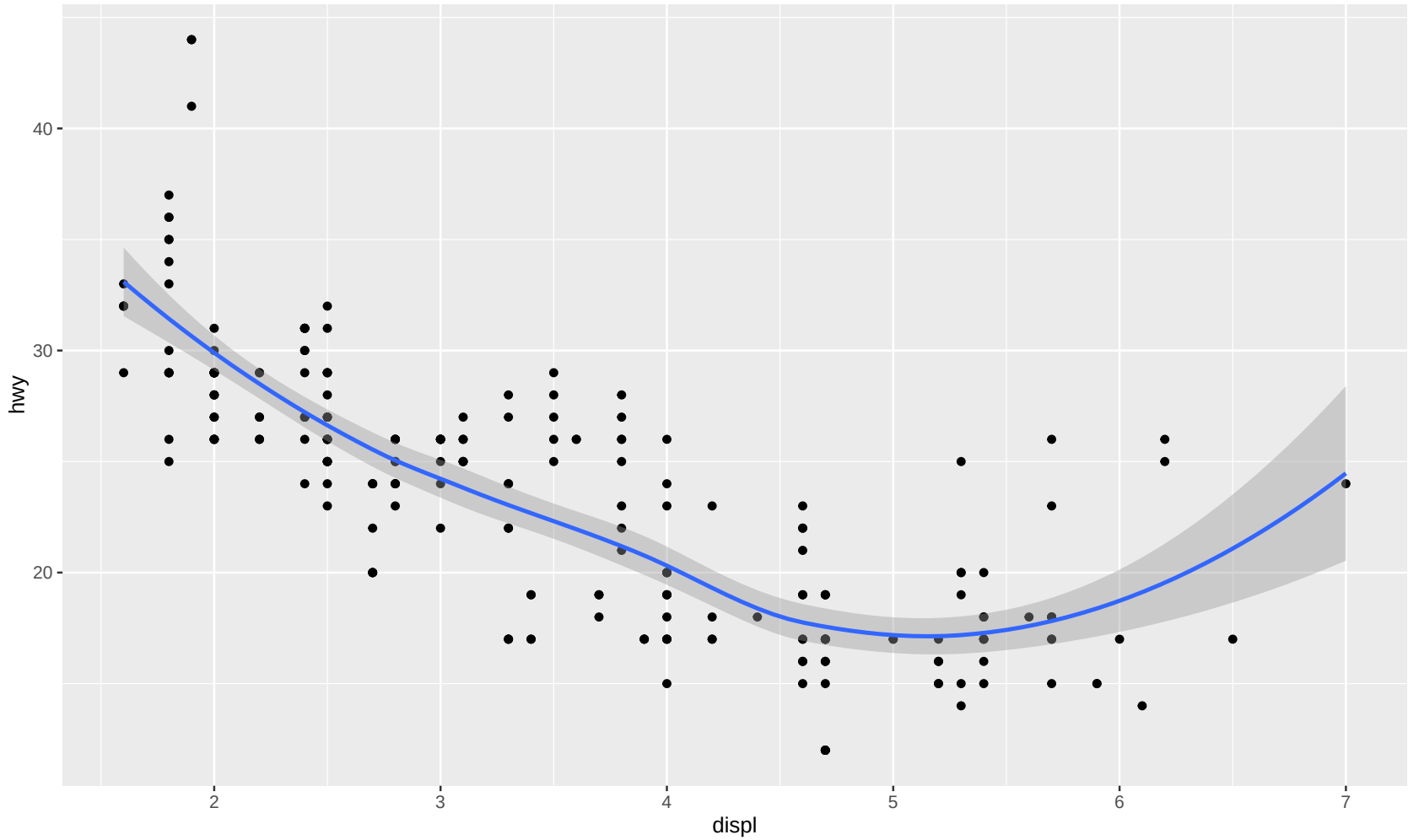
May 17, 2016

# Exploratory Analysis Content

- Principles of Analytic Graphics
- Exploratory graphs
- Plotting Systems in R
- base
- lattice
- ggplot2
- Hierarchical clustering
- K-Means clustering
- Dimension reduction

# Adding a geom

```
qplot(displ, hwy, data = mpg, geom = c("point", "smooth"))
```



# Principles of Analytic Graphics

- Principle 1: Show comparisons
- Principle 2: Show causality, mechanism, explanation
- Principle 3: Show multivariate data
- Principle 4: Integrate multiple modes of evidence
- Principle 5: Describe and document the evidence
- Principle 6: Content is king

# K-means clustering - example

```
set.seed(1234); par(mar=c(0,0,0,0))
x <- rnorm(12,mean=rep(1:3,each=4),sd=0.2)
y <- rnorm(12,mean=rep(c(1,2,1),each=4),sd=0.2)
plot(x,y,col="blue",pch=19,cex=2)
text(x+0.05,y+0.05,labels=as.character(1:12))
```