ggplot

An implementation of the
Grammar of Graphics in R

What is a graphic?

- A mapping from data to aesthetic properties of graphical objects
- Data + scales + grobs (+ facetting)
- Can easily describe any standard plot

An example: what am I?

- x position is a linear scaling of x variable
- same for y variable
- graphical object: points
- extensions: size, colours

Grobs (graphical objects)

- Simple: lines, points, bars, area, rectangles, polygons, text, paths, tiles
- Complex: bag plot, contours, density plot, quantile regression, smooths, histogram, hexagon binning
- Intermediate: jittered points, box and whisker plots, groups

Scales (aesthetic mappings)

- Position (categorical, continuous, equal scales, map projection, linear transformation)
- Continuous (size, rotation, thickness, gradient ...)
- Categorical (shape, colour, ...)

Why?

- This seems so much more complicated than normal (make me a scatterplot)
- But you can easily create new types of graphics, so you're not limited by my imagination
- Lets see it in action

Demo

Recap

1. Create plot object and set up defaults and facets
2. Use ggXXXX to add grobs to the plot
3. Use scXXX to add/modify scales

Major differences

- Have a plot object
  - keep track of it! (but easy to have multiple)
  - composition of functions = composition of graphics
- Lots of smaller functions
- Build up as you go, same thing happens on every facet

Your turn

- Install reshape and ggplot from http://had.co.nz/ggplot

Your turn

- Continue to explore the tips data (?ggplot to get started)
- Try it with your own data
- Look at the other examples
- Explore different facets (and margins)
- Tell me where the documentation is bad!