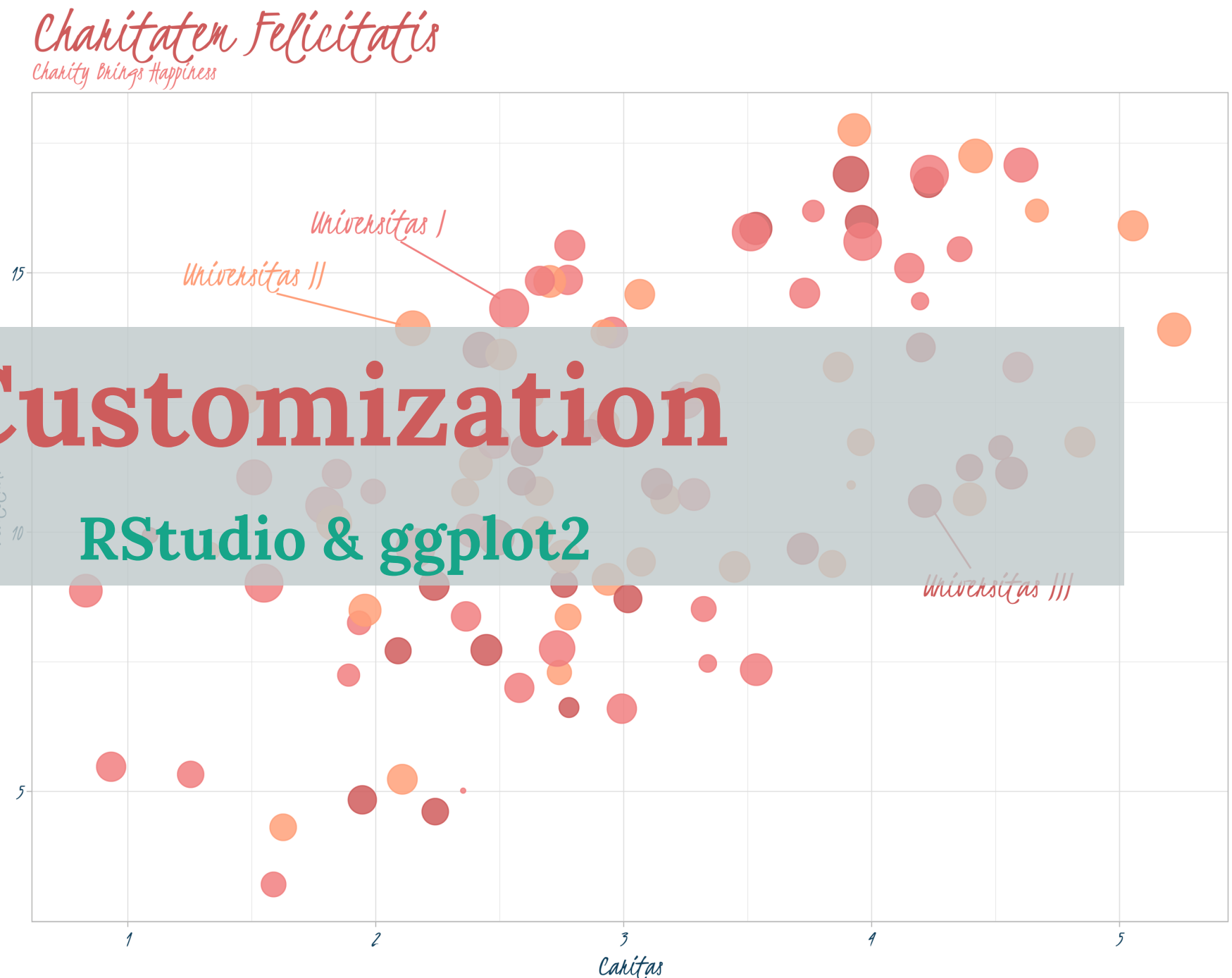
```
## Charitatem Felicitatis
## Charity Brings Happiness

set.seed(9989)

library(tidyverse)
library(extrafont)
font_import()
loadfonts()

df <- data_frame(
  x = rnorm(100) + 3,
  y = 2*x + runif(100, 0, 10),
  g = sample(c(1,2,3), 100, replace = TRUE),
  z = y + rnorm(100, 1, 10)) %>%
  mutate(g = factor(g, labels = c("universitas I",
                                  "universitas II",
                                  "universitas III")))

ggplot(df, aes(x = x,
               y = y,
               color = g,
               fill = g)) +
  geom_point(aes(size = z),
             shape = 21,
             alpha = .85) +
  scale_color_manual(values = c("#F08080", "#FFA07A", "#CD5C5C"),
                     guide = FALSE) +
  scale_fill_manual(values = c("#F08080", "#FFA07A", "#CD5C5C"),
                    guide = FALSE) +
  scale_size_continuous(range = c(1,10),
                        guide = FALSE) +

  labs(x = "Caritas",
       y = "Beatitudo",
       title = "Charitatem Felicitatis",
       subtitle = "Charity Brings Happiness",
       caption = "Made by Tyson S. Barrett",
       for = "CarolAnnie") +
  theme_light() +
  theme(text = element_text(family = "Barrett",
                            size = 18),
        plot.title = element_text(color = "#CD5C5C", size = 38),
        plot.subtitle = element_text(color = "#F08080"),
        axis.text = element_text(color = "#154360"),
        axis.title = element_text(color = "#154360"),
        plot.caption = element_text(color = "#186A3B")) +
  annotate("text",
           label = "Universitas I",
           x = 2, y = 16, color = "#F08080", family = "Barrett",
           size = 8) +
  annotate("segment",
           x = 2.1, xend = 2.5,
           y = 15.6, yend = 14.5,
           color = "#F08080") +
  annotate("text",
           label = "Universitas II",
           x = 1.5, y = 15, color = "#FFA07A", family = "Barrett",
           size = 8) +
  annotate("segment",
           x = 1.6, xend = 2.1,
           y = 14.6, yend = 14,
           color = "#FFA07A") +
  annotate("text",
           label = "Universitas III",
           x = 4.5, y = 9, color = "#CD5C5C", family = "Barrett",
           size = 8) +
  annotate("segment",
           x = 4.4, xend = 4.25,
           y = 9.3, yend = 10.4,
           color = "#CD5C5C")
ggsave("ggplot_art.pdf",
       width=8,
       height=8)
embed_fonts("ggplot_art.pdf",
            outfile = "ggplot_art_embed.pdf")
```



Customization

RStudio & ggplot2

1 Customizing RStudio

Fira Code (with ligatures)

README.md

Fira Code: monospaced font with programming ligatures

Fira Code (with ligatures)

Installation

Windows

Install chocolatey first and then do

```
choco install firacode
```

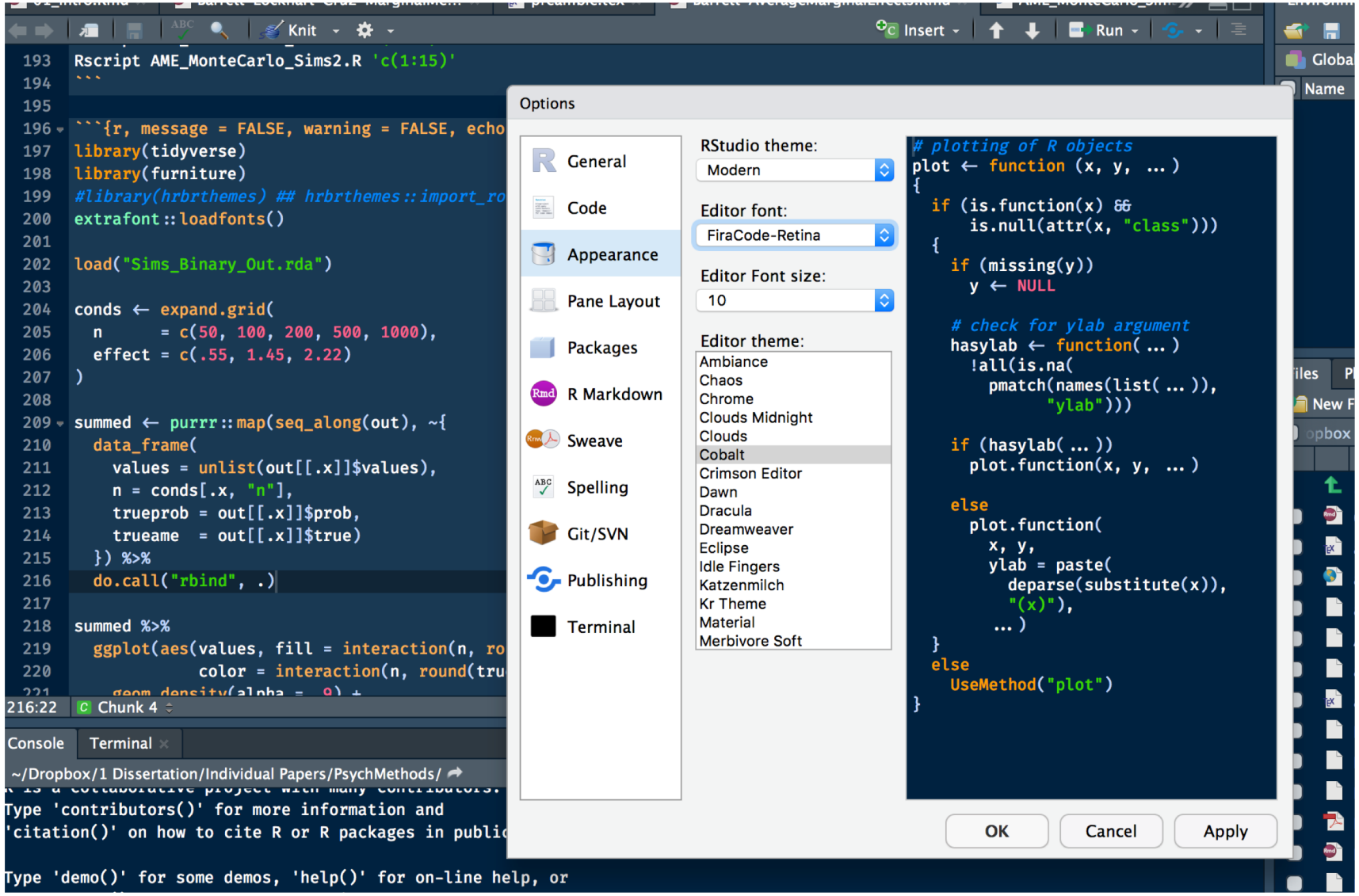
Mac

Install homebrew and then do

```
brew tap caskroom/fonts
brew cask install font-fira-code
```

Fira Code (with ligatures)

Use It



Fira Code (with ligatures)

ligatures

```
204  conds ← expand.grid(
205    n       = c(50, 100, 200, 500, 1000),
206    effect = c(.55, 1.45, 2.22)
207  )
208
209  summed ← purrr::map(seq_along(out), ~{
210    data_frame(
211      values = unlist(out[[.x]]$values),
212      n = conds[.x, "n"],
213      trueprob = out[[.x]]$prob,
214      trueame  = out[[.x]]$true)
215    }) %>%
216    do.call("rbind", .)
217
```

Fonts (with ligatures)

- Fira Code is my favorite but there are other fonts available
- This, with a good color scheme, makes writing code nicer

More options are certainly to come

2 Customizing ggplot2

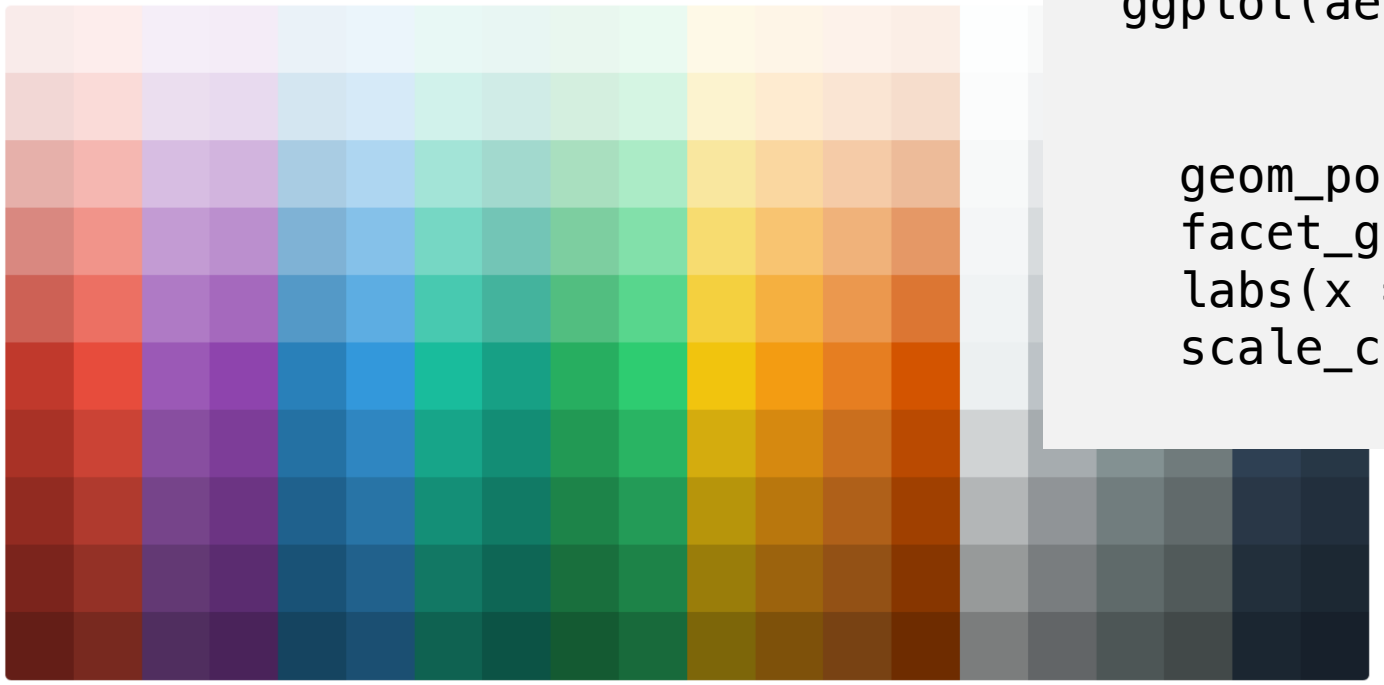
HTML Colors

`ggplot2` can understand HTML color codes

Allows us to use HTML colors

HTML Color Codes

HEX #B03A2E RGB 176, 58, 46 HSL 6, 74%, 44%

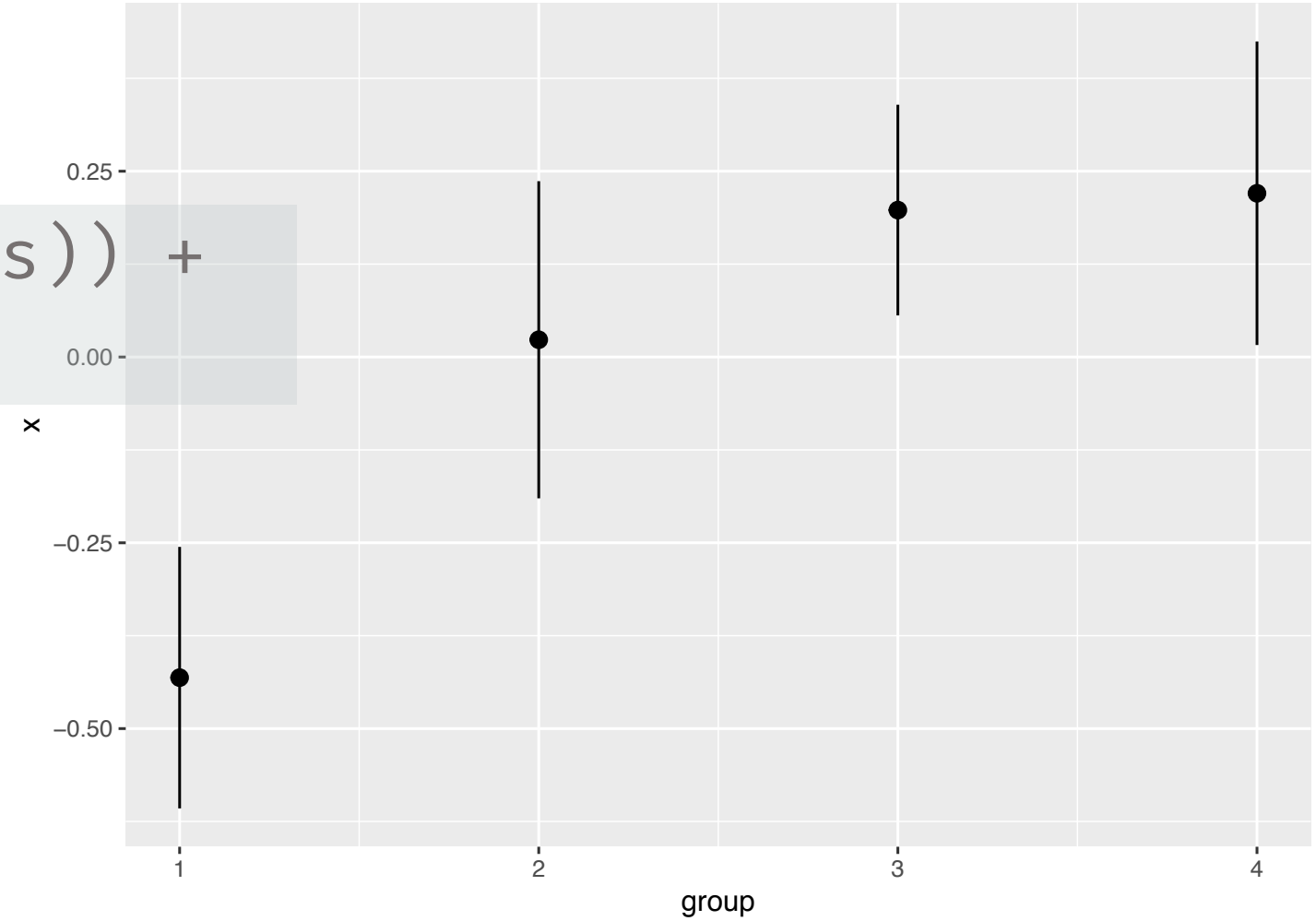


```
summed %>%
  ggplot(aes(x = var,
             y = values,
             color = group)) +
    geom_point() +
    facet_grid(~ third_var) +
    labs(x = "Estimate", y = "Density") +
    scale_color_manual(values = c("#B03A2E",
                                  "#1F618D")
```

Other Nice Tricks

Simple Summaries

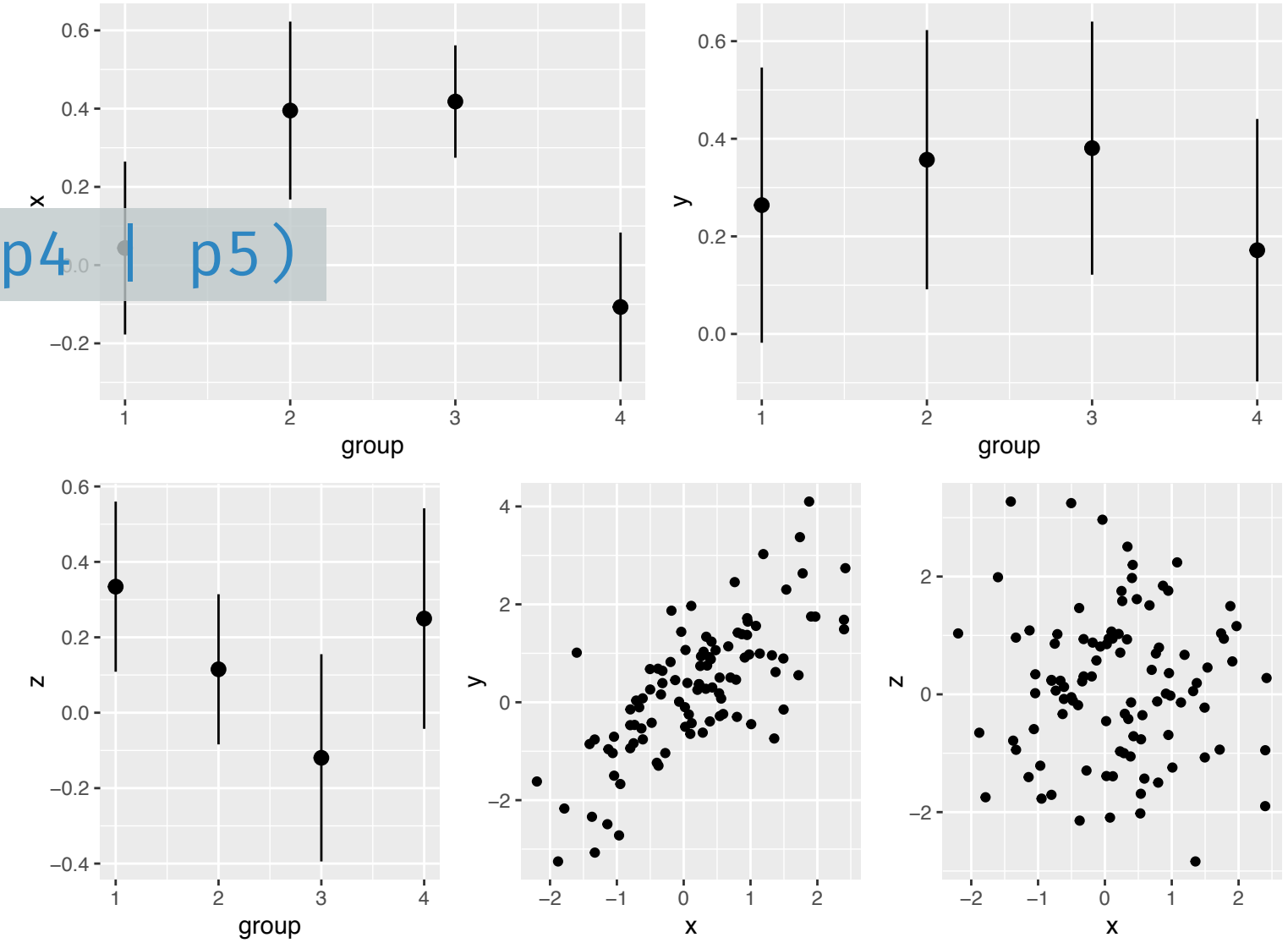
```
ggplot(aes(var, values)) +
  stat_summary()
```



Other Nice Tricks

Patchwork

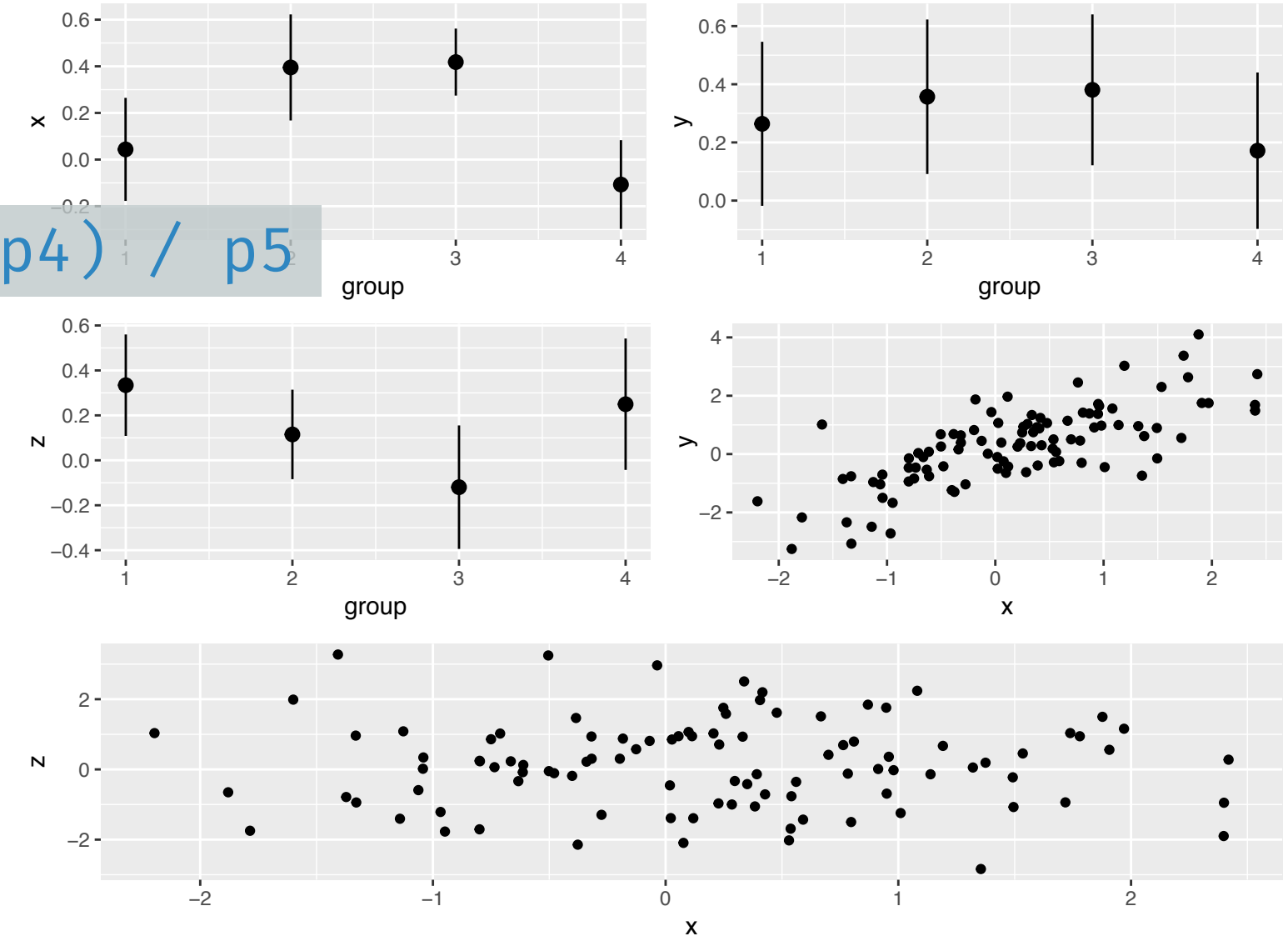
```
(p1 | p2) / (p3 | p4 | p5)
```



Other Nice Tricks

Patchwork

```
(p1 | p2) / (p3 | p4) / p5
```



Cool Animation