Contrast code from last time.

```r
lp <- lm(palettes ~ employee, data = palettes)
summary(lp)

.... some output deleted ..... 

Coefficients:
  Estimate Std. Error t value Pr(>|t|)
(Intercept) 122.20    2.54  48.04 <2e-16 
employeeB  -0.20    3.60  -0.06   0.956
employeeC  -5.00    3.60  -1.39   0.184
employeeD  -8.20    3.60  -2.28   0.037

Residual standard error: 5.69 on 16 degrees of freedom
Multiple R-squared: 0.314, Adjusted R-squared: 0.185
F-statistic: 2.44 on 3 and 16 DF,  p-value: 0.102

palettes <- mutate(palettes, X = ((employee == "A") + (employee == "D")))
palettes <- mutate(palettes, Y = ((employee == "B") + (employee == "D")))
palettes <- mutate(palettes, Z = ((employee == "D") - (employee == "C")))
ls <- lm(palettes ~ X + Y + Z - 1, data = palettes)
ls

Call:
lm(formula = palettes ~ X + Y + Z - 1, data = palettes)

Coefficients:
 X    Y    Z
119 119 -120

anova(ls, lp)

Analysis of Variance Table

Model 1: palettes ~ X + Y + Z - 1
Model 2: palettes ~ employee

     Res.Df RSS Df  Sum of Sq     F Pr(>F)
1       17 729          
2       16 518 1  211.53 6.529 0.021
```
r <- do(10000) * {
  x = rnorm(4)
  (max(x) - min(x))/sd(x)
}
r1 <- do(10000) * {
  x = rnorm(10)
  (max(x) - min(x))/sd(x)
}
d <- densityplot(~result, r, plot.points = F, xlim = c(0, 6))
ladd(panel.densityplot(r1$result, plot.points = F, col = "red"), plot = d)

l <- lm(weight ~ group, data = PlantGrowth)
summary(l)

..... some output deleted ..... 

Coefficients:

              Estimate Std. Error t value Pr(>|t|)
(Intercept)   5.0320     0.1970 25.532  < 2e-16 ***
grouptrt1    -0.3711     0.2792  -1.332  0.1877
 grouptrt2     0.4940     0.2792   1.770  0.0807

Residual standard error: 0.623 on 27 degrees of freedom
Multiple R-squared:  0.264, Adjusted R-squared:  0.21
F-statistic: 4.85 on 2 and 27 DF,  p-value: 0.0159

TukeyHSD(l)

Tukey multiple comparisons of means
95% family-wise confidence level

Fit: aov(formula = x)

$group
   diff lwr  upr p adj
trt1-ctrl -0.371 -1.062  0.320 0.3909
trt2-ctrl  0.494 -0.197  1.185 0.1980
trt2-trt1  0.865  0.174  1.556 0.0120