



R Code for Examples in the book  
*"Statistics: The Art and Science of Learning from Data"*  
 by Agresti, Franklin and Klingenberg, 5<sup>th</sup> edition

## Chapter 14

### Example 10: Estimate and Compare Corn Yield – Regression Modeling

#### Reading in data

```
corn <-
read.csv(file='https://raw.githubusercontent.com/artofstat/data/master/Chapte
r14/corn_yield.csv')
head(data, 3)

## fertilizer manure yield
## 1      high   high 13.7
## 2      high   high 15.8
## 3      high   high 13.9
```

#### Fitting in regression model

```
linReg <- lm(yield ~ fertilizer + manure, data = corn)
```

#### To view the regression coefficients

```
summary(linReg)

##
## Call:
## lm(formula = yield ~ fertilizer + manure, data = corn)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.95  -1.35   0.16   1.18   2.87
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   15.4900     0.6470  23.941 1.55e-14 ***
## fertilizerlow -1.8800     0.7471  -2.516  0.0222 *
## manurelow     -1.9600     0.7471  -2.624  0.0178 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.671 on 17 degrees of freedom
## Multiple R-squared:  0.4374, Adjusted R-squared:  0.3712
## F-statistic: 6.608 on 2 and 17 DF, p-value: 0.007532
```