**R Code for Examples in the book**



***“Statistics: The Art and Science of Learning from Data”***

**by Agresti, Franklin and Klingenberg, 5th edition**

**Chapter 12**

**Example 3: Predicting Max Bench Press – Regression Line**

## Reading in data

data <- read.csv(file='https://raw.githubusercontent.com/artofstat/data/master/Chapter12/highschool\_female\_athletes.csv')  
colnames(data) #check column names

## [1] "Athlete" "BP60" "maxBP..lbs."   
## [4] "LP200" "maxLP..lbs." "Situps..per.minute."  
## [7] "X40YD..sec." "VerticalJump..in." "SitReach..in."   
## [10] "MB..in." "SR..sec." "Age"   
## [13] "Height..in." "Weight..lbs." "Bodyfat...."   
## [16] "BMI" "Sport"

## Fitting regression model

lin.reg <- lm(maxBP..lbs. ~ BP60, data = data)

## To view the coefficients of the regression model

lin.reg$coefficients

## (Intercept) BP60   
## 63.536856 1.491053

## To predict max bench press for highest and lowest levels of number of 60 pound bench presses

new <- data.frame(BP60 = c(2, 35))  
predict(lin.reg, newdata = new)

## 1 2   
## 66.51896 115.72371