



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 12

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

#### Reading in data

```
athletes <-
read.csv(file='https://raw.githubusercontent.com/artofstat/data/master/Chapter12/highschool_female_athletes.csv')
colnames(athletes) #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

```
linReg <- lm(maxBP..lbs. ~ BP60, data = athletes)
```

#### To view the coefficients of the regression model

```
linReg$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(linReg, newdata = new)

##          1          2
## 66.51896 115.72371
```