



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

Chapter 13

Example 2: Predicting House Prices – Multiple Regression

Reading in data

```
houses <-
read.csv(file='https://raw.githubusercontent.com/artofstat/data/master/Chapter13/house_selling_prices_or.csv')
colnames(houses) #check column names

## [1] "House.Price..USD." "HP.in.thousands" "House.Size"
## [4] "Acres"             "Lot.Size"          "Bedrooms"
## [7] "T.Bath"            "Age"               "Garage"
## [10] "Condition"         "Age.Category"
```

Fitting in multiple regression model

```
linReg <- lm(House.Price..USD. ~ House.Size + Bedrooms, data = houses)
linReg

##
## Call:
## lm(formula = House.Price..USD. ~ House.Size + Bedrooms, data = houses)
##
## Coefficients:
## (Intercept)   House.Size   Bedrooms
##    60102.14      62.98    15170.41
```

To predict the selling price of the given home and find its corresponding 95% confidence interval

```
new <- data.frame(House.Size = 1679, Bedrooms = 3)
predict(linReg, newdata = new, interval = 'confidence')

##          fit          lwr          upr
## 1 211361.3 197605.3 225117.3
```