



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 12: Underachieving College Students – Standardized Residuals

Reading in data:

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

## [1] "Height"          "Gender"          "Haircut"         "Job"
## [5] "Studytime"       "Smokecig"       "Dated"           "HSGPA"
## [9] "CGPA"           "HomeDist"       "BrowseInternet"  "WatchTV"
## [13] "Exercise"        "ReadNewsP"      "Vegan"
## [17] "PoliticalDegree"
## [17] "PoliticalAff"
```

Fitting regression model

```
lin.reg <- lm(CGPA ~ HSGPA, data = data)
```

To obtain raw residuals

```
myres <- residuals(lin.reg)
head(myres)

##          1          2          3          4          5          6
## -0.37392451 -0.47386048  0.49932659 -0.17392451  0.01715919  0.52193746
```

To obtain standardized residuals

```
mystdres <- rstandard(lin.reg)
head(mystdres)

##          1          2          3          4          5          6
## -1.1921565 -1.5092691  1.7105551 -0.5545109  0.0548887  1.7297650
```