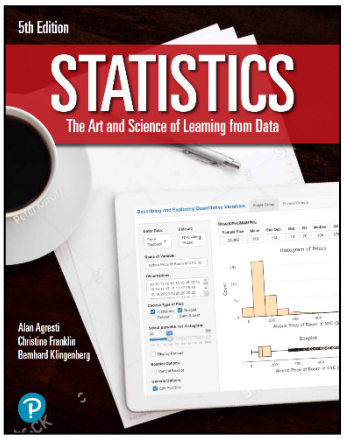

R Code for Examples in the book
"Statistics: The Art and Science of Learning from Data"
by Agresti, Franklin and Klingenberg, 5th edition

Chapter 8

Example 3: Constructing and Interpreting a Confidence Interval

Reading in sample proportion data

```
x <- 637
n <- 1361
phat <- x / n
```

To compute the standard error

```
se <- sqrt(phat * (1 - phat) / n)
se

## [1] 0.01352545
```

To compute the margin of error for a confidence level of 95%

```
zscore <- qnorm(0.975)
me <- zscore * se
me

## [1] 0.0265094
```

To compute the 95% confidence interval for the population proportion

```
phat + c(-1, 1) * me

## [1] 0.4415288 0.4945476
```

Alternatively, you can also use

```
prop.test(637, 1361, conf.level = 0.95, correct = FALSE)

##
##  1-sample proportions test without continuity correction
##
## data:  637 out of 1361, null probability 0.5
## X-squared = 5.5614, df = 1, p-value = 0.01836
## alternative hypothesis: true p is not equal to 0.5
## 95 percent confidence interval:
##  0.4416559 0.4946004
## sample estimates:
##         p
## 0.4680382
```