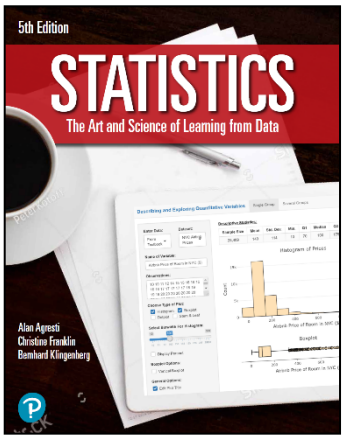

R Code for Examples in the book
"Statistics: The Art and Science of Learning from Data"
by Agresti, Franklin and Klingenberg, 5th edition

Chapter 10

Example 10: Bootstrap Distribution of the Difference Between Two Medians

Reading in the data

```
data <-
read.csv(file='https://raw.githubusercontent.com/artofstat/data/master/Chapter10/bank_loan_amounts_term.csv')
```

To generate 10,000 bootstrap samples and find each sample's difference between two means

```
bootmed_diff <- c() # initializing
for (i in 1:10000) {
  bootsample <- data[sample(seq_len(nrow(data)), replace = TRUE), ]
  years5 <- subset(bootsample, term == 5)
  years3 <- subset(bootsample, term == 3)
  bootmed_diff[i] <- median(years5$loan) - median(years3$loan)
}
```

To obtain the 95% bootstrap percentile confidence interval for the difference in median loan amounts

```
quantile(bootmed_diff, c(0.025, 0.975))
```

```
##  2.5% 97.5%
##   500 15100
```