

Chapter 1: Introduction and R Instructions

Appendix

Basic File Management and Working With Data: Installing the introstats package that accompanies this book

```
install.packages("devtools")
```

```
devtools::install_github("ericnovik/introstats")
```

```
library(introstats)
```

Basic File Management and Working With Data: How to get data into R: entering the data directly in the R Console

```
C1_1 <- c(8.3, 8.3, 8.2, 8.1, 8.2, 8.2, 8.2, 8.1, 7.8, 7.9, 7.8, 7.8)
```

```
mean(C1_1)
```

```
C1_2 <- data.frame(rate = C1_1)
```

```
head(C1_2, 3)
```

```
mean(C1_2$rate)
```

```
gpa <- c(2.7, 3.5, 3.7, 3.3, 3.6, 3.0)
```

```
satm <- c(450, 560, 700, 620, 640, 570)
```

```
satv <- c(540, 650, 700, 720, 540, 750)
```

```
C1_3 <- data.frame(GPA = gpa, SATM = satm, SATV = satv)
```

```
mean(C1_3$GPA)
```

End-of-Chapter 1 Exercises

Exercise 1

```
E1_1 <- c(81, 17, 7, 55, 2, 98, 71, 47, 19, 8, 3, 10, 28, 65, 80)
```

```
length(E1_1)
```

```
mean(E1_1)
```

```
median(E1_1)
```

```
min(E1_1)
```

```
max(E1_1)
```

```
sum(E1_1)
```

Exercise 2

```
sum(E1_1)/length(E1_1)
```

Exercise 3

```
head(LakeHuron, 5)
```

```
length(LakeHuron)
```

```
min(LakeHuron)
```

```
max(LakeHuron)
```

```
mean(LakeHuron)
```

```
median(LakeHuron)
```

```
tail(LakeHuron, 4)
```

Exercise 4

```
age <- c(25, 37, 45, 57, 65)
```

```
income <- c(24000, 42000, 39000, 77000, 84000)
```

```
E1_2 <- data.frame(Age = age, Income = income)
```

Exercise 5

```
summary(E1_2$Age)
```

```
summary(E1_2$Income)
```

R Functions

c() The concatenate function combines elements within the parentheses, called arguments, into a single entity, called a vector.

data.frame() Combines elements within the parentheses into a single entity, called a data frame. The data frame is one of the most important structures used in connection with R statistical methods.

head(, n) Displays the first n lines of a data object.

`mean()` Reports the mean of the data object.

`str()` Displays the internal structure of the data object.

`summary()` Provides the minimum and maximum values plus the 1st, 2nd, and 3rd quartiles as well as the mean.

`tail(, n)` Displays the last n lines of a data object.