RWorksheet_Cabia#4a

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1.

```
sframe <- data.frame(
  Shoe_size = c(6.5, 9.0, 8.5, 8.5, 10.5, 7.0, 9.5, 9.0, 13.0, 7.5, 10.5, 8.5, 12.0, 10.5),
  Height = c(66.0, 68.0, 64.5, 65.0, 70.0, 64.0, 70.0, 71.0, 72.0, 64.0, 74.5, 67.0, 71.0, 71.0),
  Gender = c("F", "F", "F", "F", "M", "F", "F", "F", "M", "F", "M", "F", "M", "M"),
  Shoe_size = c(13.0, 11.5, 8.5, 5.0, 10.0, 6.5, 7.5, 8.5, 10.5, 8.5, 10.5, 11.0, 9.0, 13.0),
  Height = c(77.0, 72.0, 59.0, 62.0, 72.0, 66.0, 64.0, 67.0, 73.0, 69.0, 72.0, 70.0, 69.0, 70.0),
  Gender = c("M", "M", "F", "F", "M", "F", "F", "M", "M", "F", "M", "M", "M", "M"))

sframe
```

```
##    Shoe_size Height Gender Shoe_size.1 Height.1 Gender.1
## 1        6.5   66.0      F        13.0       77        M
## 2        9.0   68.0      F        11.5       72        M
## 3        8.5   64.5      F         8.5       59        F
## 4        8.5   65.0      F         5.0       62        F
## 5       10.5   70.0      M        10.0       72        M
## 6        7.0   64.0      F         6.5       66        F
## 7        9.5   70.0      F         7.5       64        F
## 8        9.0   71.0      F         8.5       67        M
## 9       13.0   72.0      M        10.5       73        M
## 10       7.5   64.0      F         8.5       69        F
## 11      10.5   74.5      M        10.5       72        M
## 12       8.5   67.0      F        11.0       70        M
## 13      12.0   71.0      M         9.0       69        M
## 14      10.5   71.0      M        13.0       70        M
```

a.

The data contains two sets of observations for shoe size, height, and gender labeled as Shoe_size1, Height1, Gender1 and Shoe_size, Height, Gender. Each row represents an individual, with the shoe size, height, and gender listed for that person in two separate sets.

b.

```
males <- sframe[sframe$Gender == "M", c("Shoe_size", "Height")]
females <- sframe[sframe$Gender == "F", c("Shoe_size", "Height")]
```

```
males
```

```
##    Shoe_size Height
## 5       10.5   70.0
## 9       13.0   72.0
## 11      10.5   74.5
## 13      12.0   71.0
## 14      10.5   71.0
```

```
females
```

```
##    Shoe_size Height
## 1        6.5   66.0
## 2        9.0   68.0
## 3        8.5   64.5
## 4        8.5   65.0
## 6        7.0   64.0
## 7        9.5   70.0
## 8        9.0   71.0
## 10       7.5   64.0
## 12       8.5   67.0
```

c.

```
mean_shoe_size <- mean(sframe$Shoe_size)
mean_height <- mean(sframe$Height)

mean_shoe_size
```

```
## [1] 9.321429
```

```
mean_height
```

```
## [1] 68.42857
```

d.

```
correlation <- cor(sframe$Shoe_size, sframe$Height)
correlation
```

```
## [1] 0.7932693
```

2.

```
months_vector <- c(
  "March", "April", "January", "November", "January", "September", "October",
  "September", "November", "August", "January", "November", "November", "February",
  "May", "August", "July", "December", "August", "August", "September", "November",
  "February", "April")
months_vector
```

```
##  [1] "March"     "April"     "January"   "November"  "January"   "September"
##  [7] "October"   "September" "November"  "August"    "January"   "November"
```

```
## [13] "November"  "February"  "May"       "August"    "July"      "December"
## [19] "August"    "August"    "September" "November"  "February"  "April"
```

```
factor_months_vector <- factor(months_vector)

factor_months_vector
```

```
##  [1] March     April     January   November  January   September October
##  [8] September November  August    January   November  November  February
## [15] May       August    July      December  August    August    September
## [22] November  February  April
## 11 Levels: April August December February January July March May ... September
```

3.

```
summary(months_vector)
```

```
##    Length     Class      Mode
##        24 character character
```

```
summary(factor_months_vector)
```

```
##     April    August  December  February   January      July     March       May
##         2         4         1         2         3         1         1         1
##  November   October September
##         5         1         3
```

4.

```
directions_vector <- c("East", "West", "North")
frequencies_vector <- c(1, 4, 3)

factor_data <- factor(directions_vector)

new_order_data <- factor(factor_data, levels = c("East", "West", "North"))

new_order_data
```

```
## [1] East  West  North
## Levels: East West North
```