RWorksheet_Langreo#4a

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```r
#1.
# Data
shoe_size1 <- 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)
height1 <- c(66.0, 68.0, 64.5, 65.0, 70.0, 64.0, 70.0, 71.0, 72.0, 64.0, 74.0, 67.0, 71.0, 71.0)
gender1 <- c("F", "F", "F", "F", "M", "F", "F", "F", "M", "F", "M", "F", "M", "M")

shoe_size2 <- 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)
height2 <- 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)
gender2 <- c("M", "M", "F", "F", "M", "F", "F", "M", "M", "F", "M", "M", "M", "M")

# Create data frame
df <- data.frame(
  ShoeSize = c(shoe_size1, shoe_size2),
  Height = c(height1, height2),
  Gender = c(gender1, gender2)
)

# 1b. Subset by gender
male_data <- subset(df, Gender == "M")
female_data <- subset(df, Gender == "F")
print(male_data)
```

```
##    ShoeSize Height Gender
## 5      10.5     70      M
## 9      13.0     72      M
## 11     10.5     74      M
## 13     12.0     71      M
## 14     10.5     71      M
## 15     13.0     77      M
## 16     11.5     72      M
## 19     10.0     72      M
## 22      8.5     67      M
## 23     10.5     73      M
## 25     10.5     72      M
## 26     11.0     70      M
## 27      9.0     69      M
## 28     13.0     70      M
```

```r
print(female_data)
```

```
##    ShoeSize Height Gender
## 1       6.5   66.0      F
## 2       9.0   68.0      F
```

```
## 3        8.5    64.5       F
## 4        8.5    65.0       F
## 6        7.0    64.0       F
## 7        9.5    70.0       F
## 8        9.0    71.0       F
## 10       7.5    64.0       F
## 12       8.5    67.0       F
## 17       8.5    59.0       F
## 18       5.0    62.0       F
## 20       6.5    66.0       F
## 21       7.5    64.0       F
## 24       8.5    69.0       F
```

```r
# 1c. Calculate mean shoe size and height
mean_ShoeSize <- mean(c(shoe_size1, shoe_size2))
mean_Height <- mean(c(height1, height2))
print(mean_ShoeSize)
```

```
## [1] 9.410714
```

```r
print(mean_Height)
```

```
## [1] 68.55357
```

```r
# 1d. Calculate correlation between shoe size and height
correlation <- cor(df$ShoeSize, df$Height, use = "complete.obs")
print(paste("Correlation between Shoe Size and Height:", correlation))
```

```
## [1] "Correlation between Shoe Size and Height: 0.779186612606297"
```

```r
#2
monthsvec <- c("March", "April", "Januay", "November", "January", "September", "October", "September",
factor_monthsvec <- factor(monthsvec)

factor_monthsvec
```

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

```r
levels(factor_monthsvec)
```

```
##  [1] "April"     "August"    "December"  "February"  "January"   "Januay"
##  [7] "july"      "March"     "May"       "November"  "October"   "September"
```

```r
#3.
summary(monthsvec)
```

```
##    Length     Class      Mode
##        23 character character
```

```r
summary(factor_monthsvec)
```

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

```
#4
direction <- c("East", "West", "North")
frequency <- c(1,4,3)
factor_data <- factor(direction, levels = c("East", "West", "North"))
factor_data
```

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

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

```
#5
write.csv("import_march.csv", row.names = FALSE)
```

```
## "x"
## "import_march.csv"
```

```
data <- read.table("import_march.csv", header = TRUE, sep = ",")
data
```

```
##    Students Strategy.1 Strategy.2 Strategy.3
## 1      Male          8         10          8
## 2      Male          4          8          6
## 3      Male          6          4          4
## 4    Female         14          4         15
## 5    Female         10          2         12
## 6    Female          6          0          9
```