RMarkdown_Somosera#4b

2023-11-08

```r
vecA <- c(1,2,3,4,5)
matA <- matrix(0, nrow = 5, ncol = 5)

for (i in 1:5){
  for (j in 1:5){
    matA[i,j] <- abs(vecA[i]-vecA[j]) #
  }
}

print(matA)
```

```
##      [,1] [,2] [,3] [,4] [,5]
## [1,]    0    1    2    3    4
## [2,]    1    0    1    2    3
## [3,]    2    1    0    1    2
## [4,]    3    2    1    0    1
## [5,]    4    3    2    1    0
```

```r
asterisks <- ""
for(i in 1:5){
asterisks <- paste(asterisks, "*")

cat(asterisks, "\n")
}
```

```
##   *
##   * *
##   * * *
##   * * * *
##   * * * * *
```

```r
n <- as.integer(readline(prompt="Enter the number of terms: "))
```

```
## Enter the number of terms:
```

```r
a <- 0
b <- 1

print(b)
```

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

```r
repeat {
  c <- a + b
  if (c > 500) {
    break
  }
  print(c)
```

```
    a <- b
    b <- c
}
```

```
## [1] 1
## [1] 2
## [1] 3
## [1] 5
## [1] 8
## [1] 13
## [1] 21
## [1] 34
## [1] 55
## [1] 89
## [1] 144
## [1] 233
## [1] 377
```

```
#a
library(readr)
HouseholdData <- read_csv("/cloud/project/Worksheet#4/Worksheet#4b/HouseholdData.csv")
```

```
## Rows: 28 Columns: 3
## -- Column specification -----------------------------------------------------
## Delimiter: ","
## chr (1): Gender
## dbl (2): ShoeSize, Height
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
print(HouseholdData)
```

```
## # A tibble: 28 x 3
##    ShoeSize Height Gender
##       <dbl>  <dbl> <chr>
##  1      6.5   66   F
##  2      9     68   F
##  3      8.5   64.5 F
##  4      8.5   65   F
##  5     10.5   70   M
##  6      7     64   F
##  7      9.5   70   F
##  8      9     71   F
##  9     13     72   M
## 10      7.5   64   F
## # i 18 more rows
```

```
head(HouseholdData)
```

```
## # A tibble: 6 x 3
##   ShoeSize Height Gender
##      <dbl>  <dbl> <chr>
## 1      6.5   66   F
## 2      9     68   F
## 3      8.5   64.5 F
```

```
## 4       8.5   65    F
## 5      10.5   70    M
## 6       7    64    F
```

```r
#b
MaleSub<- subset(HouseholdData, Gender == "Male")
FemSub<- subset(HouseholdData, Gender =="Female")

print("Male Subset:")
```

```
## [1] "Male Subset:"
```

```r
print(MaleSub)
```

```
## # A tibble: 0 x 3
## # i 3 variables: ShoeSize <dbl>, Height <dbl>, Gender <chr>
```

```r
print("Female Subset:")
```

```
## [1] "Female Subset:"
```

```r
print(FemSub)
```

```
## # A tibble: 0 x 3
## # i 3 variables: ShoeSize <dbl>, Height <dbl>, Gender <chr>
```

```r
nrow(MaleSub)
```

```
## [1] 0
```
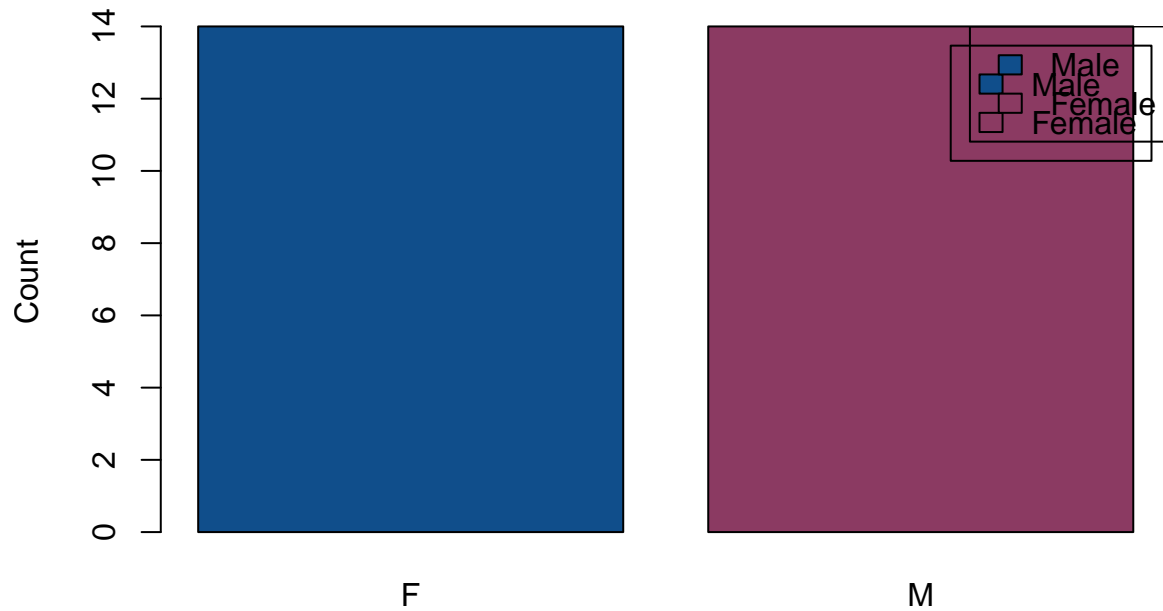
```r
nrow(FemSub)
```

```
## [1] 0
```

```r
#c
GraphMF<- table(HouseholdData$Gender)
barplot(GraphMF,
        main = "Number of Males and Females",
        xlab = "Gender",
        ylab = "Count",
        col = c("dodgerblue4", "hotpink4"),
        legend.text = c("Male", "Female"),
        beside = TRUE
)

legend("topright", legend = c("Male", "Female"), fill = c("dodgerblue4", "hotpink4"))
```
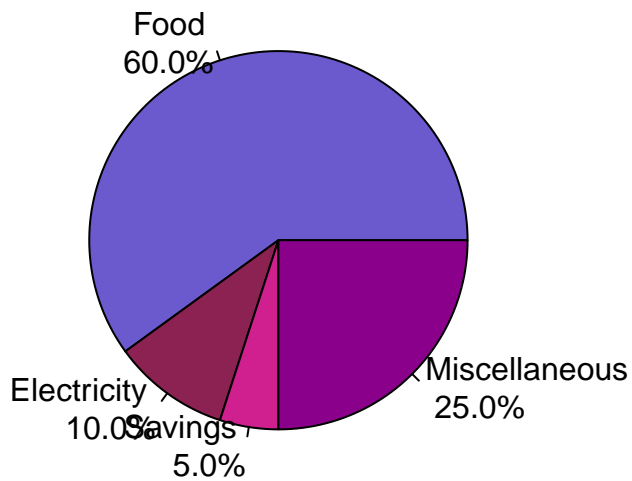
Number of Males and Females


```r
Expenses <- c(Food = 60, Electricity = 10, Savings = 5, Miscellaneous = 25)

pie(Expenses,
    labels = paste(names(Expenses), "\n", sprintf("%.1f%%", prop.table(Expenses) * 100)),
    col = c("slateblue", "violetred4", "violetred", "magenta4"),
    main = "Monthly Expenses of the Dela Cruz Family"
)
```

Monthly Expenses of the Dela Cruz Family


```r
#a
data("iris")
str(iris)
```

```
## 'data.frame':    150 obs. of  5 variables:
##  $ Sepal.Length: num  5.1 4.9 4.7 4.6 5 5.4 4.6 5 4.4 4.9 ...
##  $ Sepal.Width : num  3.5 3 3.2 3.1 3.6 3.9 3.4 3.4 2.9 3.1 ...
##  $ Petal.Length: num  1.4 1.4 1.3 1.5 1.4 1.7 1.4 1.5 1.4 1.5 ...
##  $ Petal.Width : num  0.2 0.2 0.2 0.2 0.2 0.4 0.3 0.2 0.2 0.1 ...
##  $ Species     : Factor w/ 3 levels "setosa","versicolor",..: 1 1 1 1 1 1 1 1 1 1 ...
#The iris dataset has 150 observations and 5 variables.
#These variables are the Sepal.Length, Sepal.Width, Petal.Length, Petal.Width, and Species.

#b
MeanIris<- colMeans(iris[, c("Sepal.Length", "Sepal.Width", "Petal.Length", "Petal.Width")])
print(MeanIris)

## Sepal.Length  Sepal.Width Petal.Length  Petal.Width
##     5.843333     3.057333     3.758000     1.199333
#c
Spec <- table(iris$Species)

clors <- c("midnightblue", "mediumvioletred", "mediumblue")

pie(Spec,
    labels = paste(names(Spec), "\n", sprintf("%.1f%%", prop.table(Spec) * 100)),
    col = clors,
    main = "Species Distribution",
    cex.main = 1.5,
    cex = 0.8
)
```
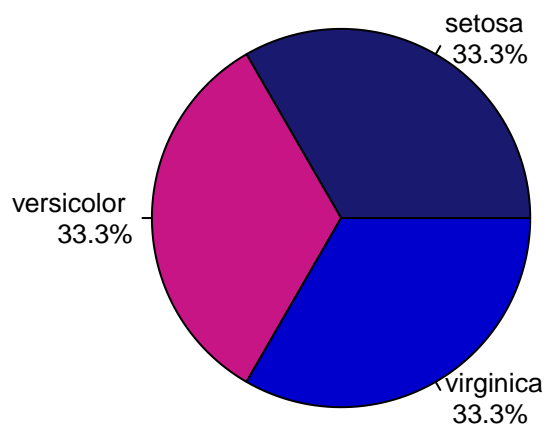
Species Distribution


```
#d
SetosaSub <- subset(iris, Species == "setosa")
VersiSub <- subset(iris, Species == "versicolor")
VirgiSub <- subset(iris, Species == "virginica")

# Display the last six rows of each species
cat("Last six rows of Setosa:")
```

```r
## Last six rows of Setosa:
print(tail(SetosaSub))
```

```
##    Sepal.Length Sepal.Width Petal.Length Petal.Width Species
## 45          5.1         3.8          1.9         0.4  setosa
## 46          4.8         3.0          1.4         0.3  setosa
## 47          5.1         3.8          1.6         0.2  setosa
## 48          4.6         3.2          1.4         0.2  setosa
## 49          5.3         3.7          1.5         0.2  setosa
## 50          5.0         3.3          1.4         0.2  setosa
```

```r
cat("Last six rows of Versicolor:")
```

```
## Last six rows of Versicolor:
```

```r
print(tail(VersiSub))
```

```
##     Sepal.Length Sepal.Width Petal.Length Petal.Width    Species
## 95           5.6         2.7          4.2         1.3 versicolor
## 96           5.7         3.0          4.2         1.2 versicolor
## 97           5.7         2.9          4.2         1.3 versicolor
## 98           6.2         2.9          4.3         1.3 versicolor
## 99           5.1         2.5          3.0         1.1 versicolor
## 100          5.7         2.8          4.1         1.3 versicolor
```

```r
cat("Last six rows of Virginica:")
```

```
## Last six rows of Virginica:
```

```r
print(tail(VirgiSub))
```

```
##     Sepal.Length Sepal.Width Petal.Length Petal.Width   Species
## 145          6.7         3.3          5.7         2.5 virginica
## 146          6.7         3.0          5.2         2.3 virginica
## 147          6.3         2.5          5.0         1.9 virginica
## 148          6.5         3.0          5.2         2.0 virginica
## 149          6.2         3.4          5.4         2.3 virginica
## 150          5.9         3.0          5.1         1.8 virginica
```
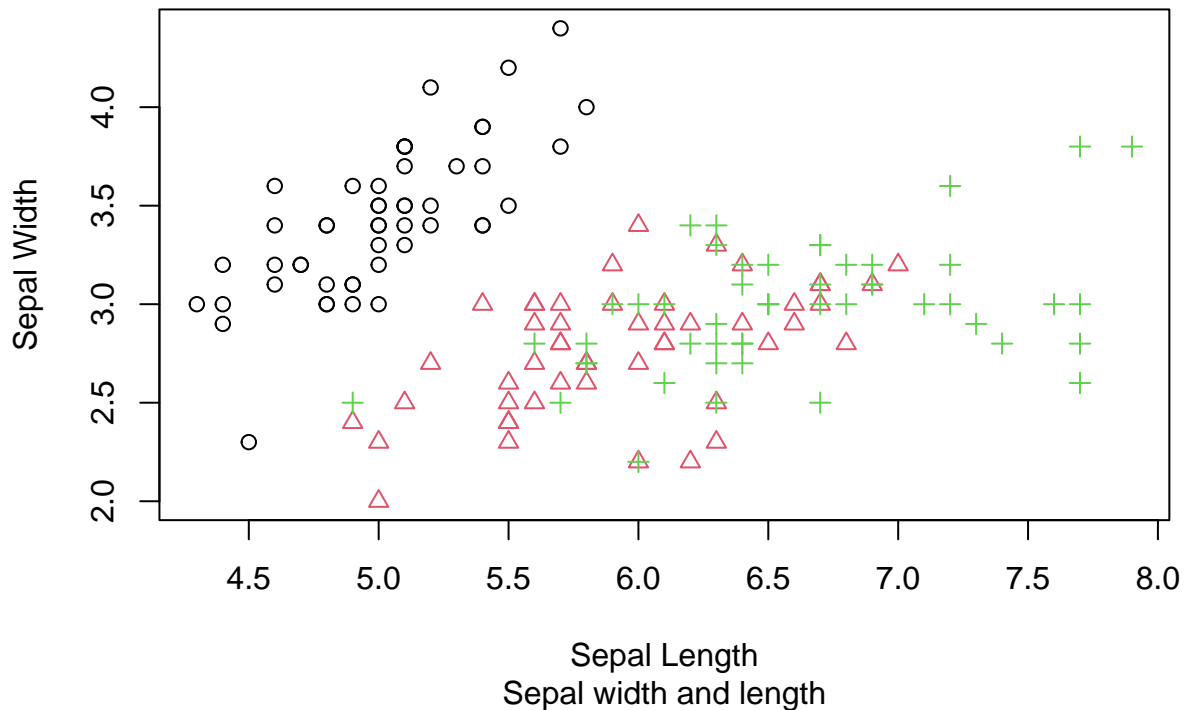
```r
#e

data(iris)

iris$Species <- as.factor(iris$Species)

plot(iris$Sepal.Length, iris$Sepal.Width,
     pch = as.integer(iris$Species),
     col = iris$Species,
     main = "Iris Dataset",
     sub = "Sepal width and length",
     xlab = "Sepal Length",
     ylab = "Sepal Width"
)
```

Iris Dataset

Sepal width and length

```
#f
#The scatterplot shows similarities between the sepal width and length ranging from 5.5 to 7.0
```

```
library(readxl)
alexa_file <- read_excel("/cloud/project/Worksheet#4/Worksheet#4b/alexa_file.xlsx")
alexa_file
```

```
## # A tibble: 3,150 x 5
##     rating date                variation           verified_reviews      feedback
##      <dbl> <dttm>              <chr>               <chr>                    <dbl>
## 1        5 2018-07-31 00:00:00 Charcoal Fabric     Love my Echo!                1
## 2        5 2018-07-31 00:00:00 Charcoal Fabric     Loved it!                    1
## 3        4 2018-07-31 00:00:00 Walnut Finish       Sometimes while play~        1
## 4        5 2018-07-31 00:00:00 Charcoal Fabric     I have had a lot of ~        1
## 5        5 2018-07-31 00:00:00 Charcoal Fabric     Music                        1
## 6        5 2018-07-31 00:00:00 Heather Gray Fabric I received the echo ~        1
## 7        3 2018-07-31 00:00:00 Sandstone Fabric    Without having a cel~        1
## 8        5 2018-07-31 00:00:00 Charcoal Fabric     I think this is the ~        1
## 9        5 2018-07-30 00:00:00 Heather Gray Fabric looks great                  1
## 10       5 2018-07-30 00:00:00 Heather Gray Fabric Love it! I've listen~        1
## # i 3,140 more rows
```

```
#a. Rename the white and black variants by using gsub() function.
alexa_file$variation <- gsub("Black", "Black Dot", alexa_file$variation)
alexa_file$variation <- gsub("Black", "Black Plus", alexa_file$variation)
alexa_file$variation <- gsub("Black", "Black Snow", alexa_file$variation)
alexa_file$variation <- gsub("Black", "Black Spot", alexa_file$variation)
alexa_file$variation <- gsub("White", "White Dot", alexa_file$variation)
alexa_file$variation <- gsub("White", "White Plus", alexa_file$variation)
```

```r
alexa_file$variation <- gsub("White", "White Snow", alexa_file$variation)
alexa_file$variation <- gsub("White", "White Spot", alexa_file$variation)
alexa_file
```

```
## # A tibble: 3,150 x 5
##    rating date                variation          verified_reviews     feedback
##     <dbl> <dttm>              <chr>              <chr>                   <dbl>
##  1      5 2018-07-31 00:00:00 Charcoal Fabric    Love my Echo!               1
##  2      5 2018-07-31 00:00:00 Charcoal Fabric    Loved it!                   1
##  3      4 2018-07-31 00:00:00 Walnut Finish      Sometimes while play~       1
##  4      5 2018-07-31 00:00:00 Charcoal Fabric    I have had a lot of ~       1
##  5      5 2018-07-31 00:00:00 Charcoal Fabric    Music                       1
##  6      5 2018-07-31 00:00:00 Heather Gray Fabric I received the echo ~      1
##  7      3 2018-07-31 00:00:00 Sandstone Fabric   Without having a cel~       1
##  8      5 2018-07-31 00:00:00 Charcoal Fabric    I think this is the ~       1
##  9      5 2018-07-30 00:00:00 Heather Gray Fabric looks great                1
## 10      5 2018-07-30 00:00:00 Heather Gray Fabric Love it! I've listen~      1
## # i 3,140 more rows
```