

RWorksheet_Soldevilla#4b.Rmd

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#1

```
vectorA <- c(1, 2, 3, 4, 5)
matrixA <- matrix(0, nrow = 5, ncol = 5)

for (i in 1:5) {
  for (j in 1:5) {
    matrixA[i, j] <- abs(vectorA[i] - vectorA[j])
  }
}
```

matrixA

```
##      [,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
```

#2

```
num_rows <- 5

for(i in 1:num_rows){
  for(j in 1:i){
    cat("*")
  }
  cat("\n")
}
```

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

#3

```
input.number <- as.numeric(readline("Enter a number to start the Fibonacci sequence: "))
```

```
## Enter a number to start the Fibonacci sequence:
```

```
assume.number <- 0
x <- 0
y <- 1
```

```
repeat {
  if (x > 500) {
    break
  }
  if (x >= assume.number) {
    cat(x, " ")
  }
  temp <- x + y
  x <- y
  y <- temp
}
```

```
## 0 1 1 2 3 5 8 13 21 34 55 89 144 233 377
```

```
cat("\n")
```

```
#4
```

```
library(readr)
shoes <- read_csv("/cloud/project/RWorksheet_Soldevilla#4/shoes.csv",
                  show_col_types = FALSE)
shoes
```

```
## # A tibble: 28 x 3
##   `Shoe Size` 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
```

```
shoes <- read_csv("shoes.csv")
shoes
```

```
##   Shoe.Size 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
## 5     10.5    70.0    M
## 6      7.0    64.0    F
## 7      9.5    70.0    F
## 8      9.0    71.0    F
## 9     13.0    72.0    M
## 10     7.5    64.0    F
## 11     10.5    74.5    M
## 12      8.5    67.0    F
## 13     12.0    71.0    M
## 14     10.5    71.0    M
```

```
## 15      13.0    77.0      M
## 16      11.5    72.0      M
## 17       8.5    59.0      F
## 18       5.0    62.0      F
## 19      10.0    72.0      M
## 20       6.5    66.0      F
## 21       7.5    64.0      F
## 22       8.5    67.0      M
## 23      10.5    73.0      M
## 24       8.5    69.0      F
## 25      10.5    72.0      M
## 26      11.0    70.0      M
## 27       9.0    69.0      M
## 28      13.0    70.0      M
```

```
ssize <- shoes[c(1:6),]
ssize
```

```
##   Shoe.Size 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
## 5     10.5   70.0      M
## 6      7.0   64.0      F
```

```
male_subset <- shoes[shoes$Gender == "M", c("Shoe.Size", "Height")]
female_subset <- shoes[shoes$Gender == "F", c("Shoe.Size", "Height")]
male_subset
```

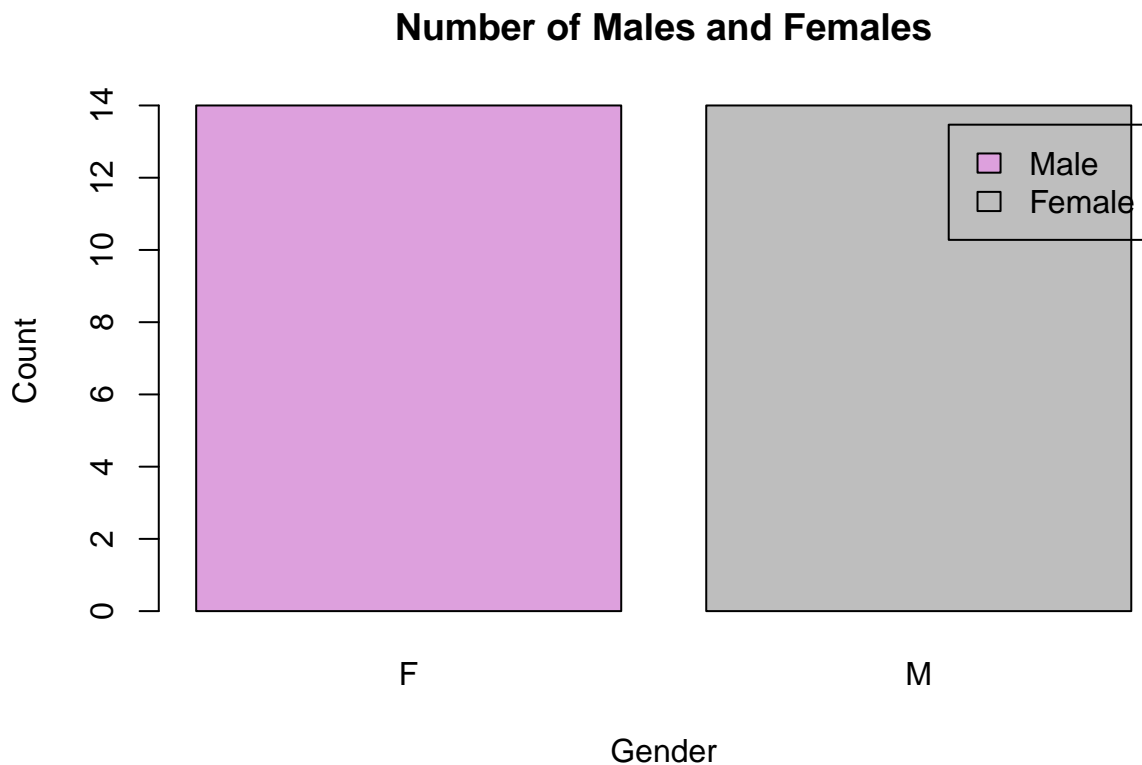
```
##   Shoe.Size Height
## 5      10.5   70.0
## 9      13.0   72.0
## 11     10.5   74.5
## 13     12.0   71.0
## 14     10.5   71.0
## 15     13.0   77.0
## 16     11.5   72.0
## 19     10.0   72.0
## 22      8.5   67.0
## 23     10.5   73.0
## 25     10.5   72.0
## 26     11.0   70.0
## 27      9.0   69.0
## 28     13.0   70.0
```

```
female_subset
```

```
##   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
## 17      8.5    59.0
## 18      5.0    62.0
## 20      6.5    66.0
## 21      7.5    64.0
## 24      8.5    69.0
```

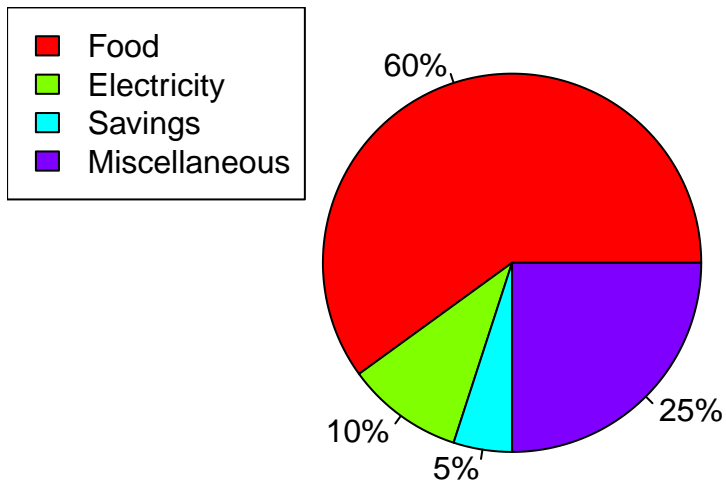
```
GraphMF<- table(shoes$Gender)
barplot(GraphMF,
  main = "Number of Males and Females",
  xlab = "Gender",
  ylab = "Count",
  col = c("plum", "gray"),
  legend.text = c("Male", "Female"),
  beside = TRUE
)
```



```
#5
pie_chart <- c(60, 10, 5, 25)
pie(pie_chart, labels = paste0(pie_chart, "%"),
  main = "Monthly Income of Dela Cruz family ", col = rainbow(length(pie_chart)))

legend("topleft", legend = c("Food", "Electricity", "Savings", "Miscellaneous"),
  fill = rainbow(length(pie_chart)))
```

Monthly Income of Dela Cruz family



#6

```
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 ...
#It has 150 observations and 5 variables.

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

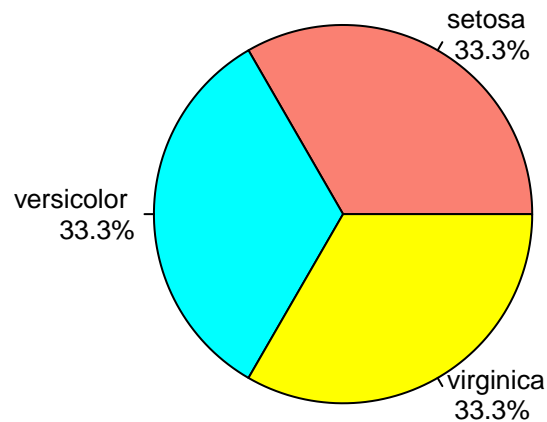
## Sepal.Length Sepal.Width Petal.Length Petal.Width
## 5.843333 3.057333 3.758000 1.199333

specs <- table(iris$Species)

clors <- c("salmon", "cyan", "yellow")

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

Species Distribution



```
SetSub <- 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:")
```

```
## Last six rows of Setosa:
```

```
print(tail(SetSub))
```

```
##      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
```

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

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

```
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
```

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

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

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

```
##      Sepal.Length Sepal.Width Petal.Length Petal.Width   Species
```

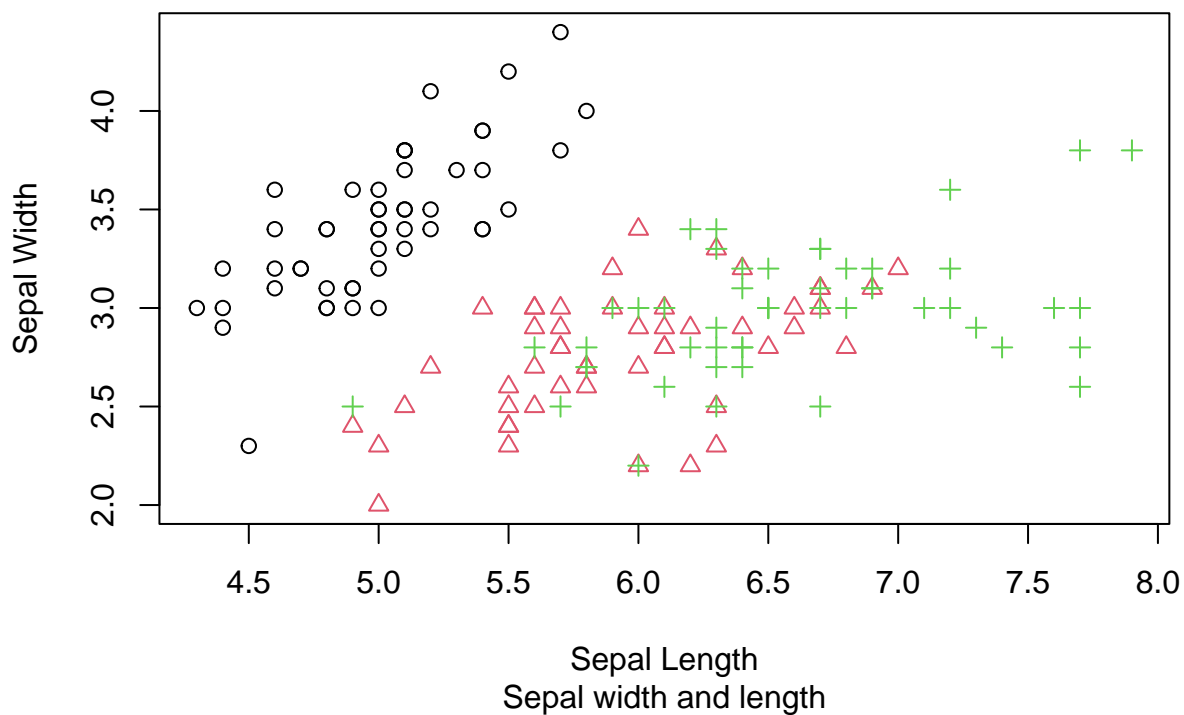
```
## 145      6.7      3.3      5.7      2.5 virginica
## 146      6.7      3.0      5.2      2.3 virginica
## 147      6.3      2.5      5.0      1.9 virginica
## 148      6.5      3.0      5.2      2.0 virginica
## 149      6.2      3.4      5.4      2.3 virginica
## 150      5.9      3.0      5.1      1.8 virginica
```

```
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



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

```
library(readxl)
alexa_file <- read_excel("alexa_file.xlsx")
alexa_file
```

```
## # A tibble: 3,150 x 5
##   rating date          variation verified_reviews feedback
##   <dbl> <dtm>          <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					