RWorksheet_Sante#4b.Rmd

Sharrene Sante

2023-11-08

#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)
Shoesize <- read_csv("/cloud/project/Rworksheet4/Shoesize.csv", show_col_types = FALSE)
Shoesize
```

```
## # A tibble: 29 x 3
##    `Shoes 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 19 more rows
```

```
Shoesize <- read.csv("Shoesize.csv")
Shoesize
```

```
##    Shoes.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
## 29         NA     NA
```

```r
size <- Shoesize[c(1:6),]
size
```

```
##   Shoes.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
```

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

```
##    Shoes.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
```

```r
female_subset
```

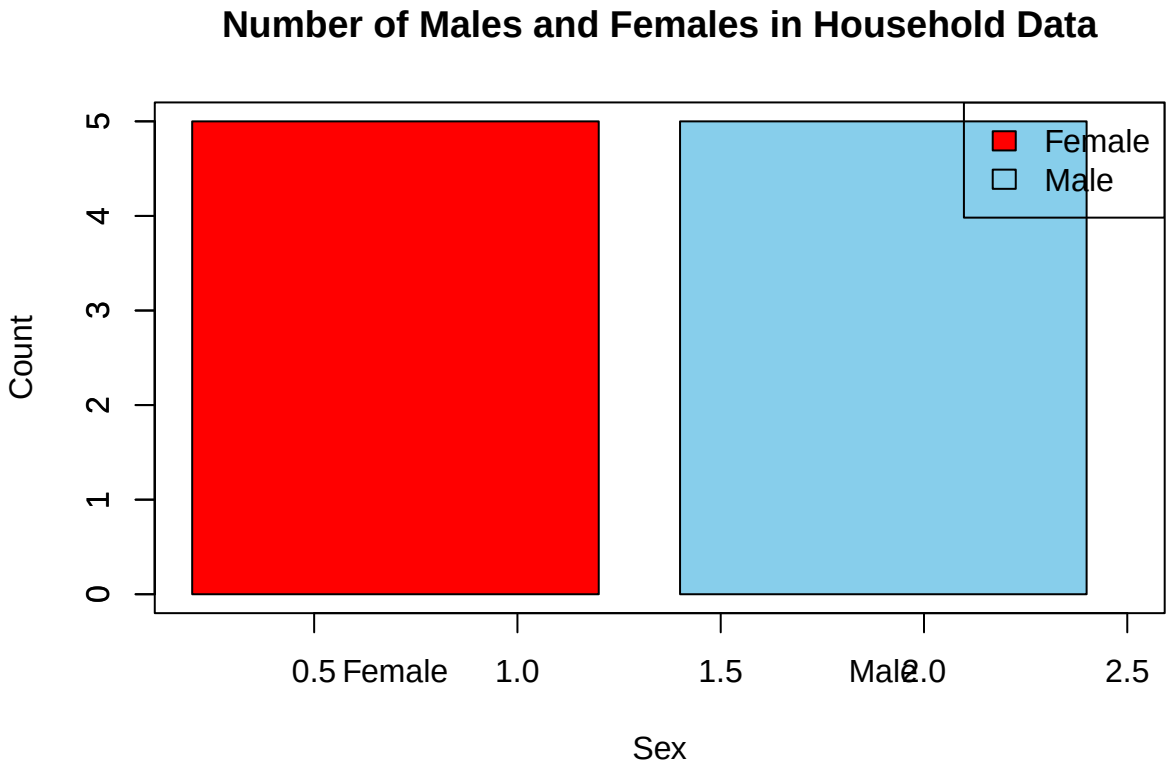
```
##    Shoes.Size Height
## 1         6.5   66.0
## 2         9.0   68.0
## 3         8.5   64.5
## 4         8.5   65.0
## 6         7.0   64.0
## 7         9.5   70.0
## 8         9.0   71.0
## 10        7.5   64.0
## 12        8.5   67.0
```

```
## 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
```

```
household <- read.csv("HouseholdData.csv")
household
```

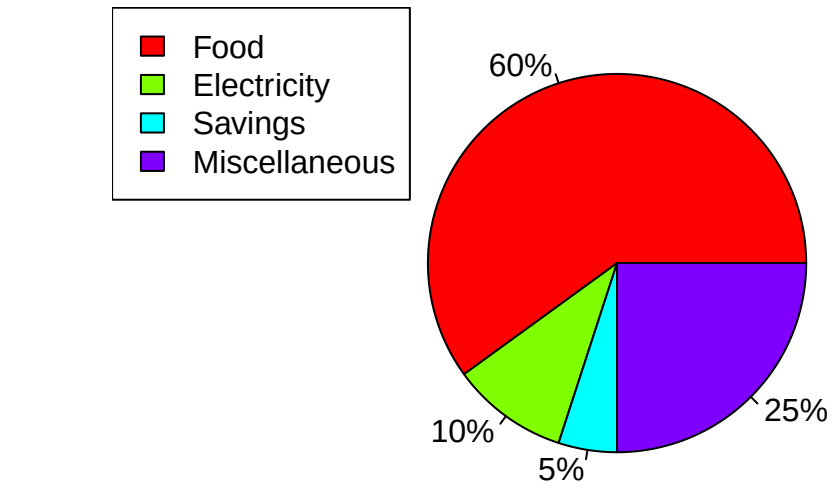
```
##    Respondents    Sex Fathers_Occupation Person_at_Home Siblings_at_school
## 1            1   Male                  1              5                  2
## 2            2 Female                  2              7                  3
## 3            3 Female                  3              3                  0
## 4            4   Male                  3              8                  5
## 5            5   Male                  1              6                  2
## 6            6 Female                  2              4                  3
## 7            7 Female                  2              4                  1
## 8            8   Male                  3              2                  2
## 9            9 Female                  1             11                  6
## 10          10   Male                  3              6                  2
##    Types_of_houses
## 1             Wood
## 2         Congrete
## 3         Congrete
## 4             Wood
## 5    Semi-Congrete
## 6    Semi-Congrete
## 7             Wood
## 8    Semi-Congrete
## 9    Semi-Congrete
## 10        Congrete
```

```
gender_counts <- table(household$Sex)

plot(1, type = "n", main = "Number of Males and Females in Household Data",
     xlab = "Sex", ylab = "Count", xlim = c(0.2, 2.5), ylim = c(0, max(gender_counts)))

barplot(gender_counts, col = c("red", "skyblue"), add = TRUE)
legend("topright", legend = levels(as.factor(household$Sex)), fill = c("red", "skyblue"))
```



#5

```
pie_chart <- c(60, 10, 5, 25)
pie(pie_chart, labels = paste0(pie_chart, "%"),
    main = "The Monthly Income of Dela Cruz family was spent on the following: ", col = rainbow(length(
legend("topleft", legend = c("Food", "Electricity", "Savings", "Miscellaneous"), fill = rainbow(length(
```



#6

```
data<-(iris)
str(iris)
```

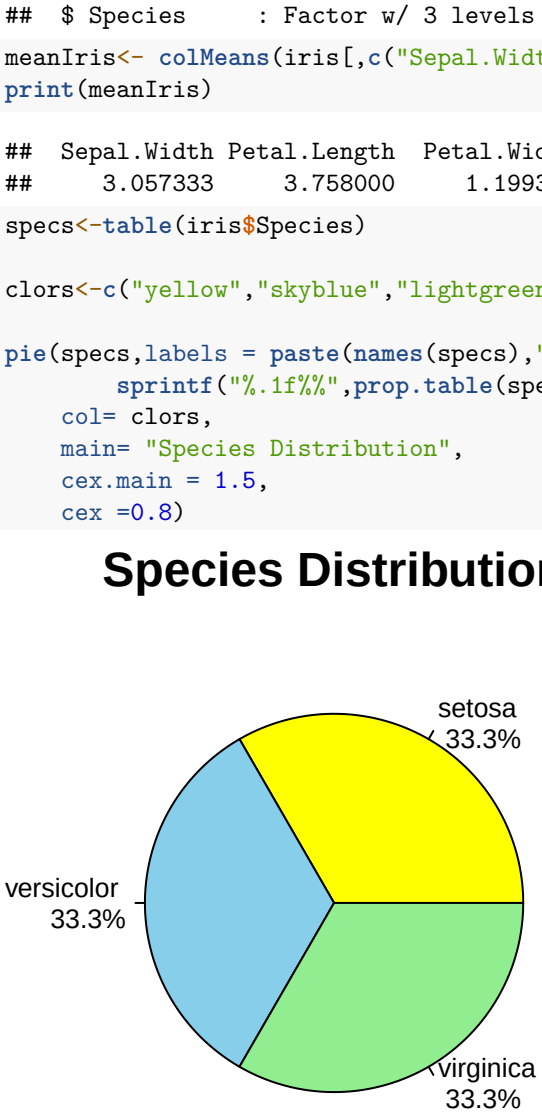
```
## 'data.frame':    150 obs. of  5 variables:
```

```
##  $ 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 ...
```

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

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

```
specs<-table(iris$Species)

clors<-c("yellow","skyblue","lightgreen")

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)
```




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

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
```

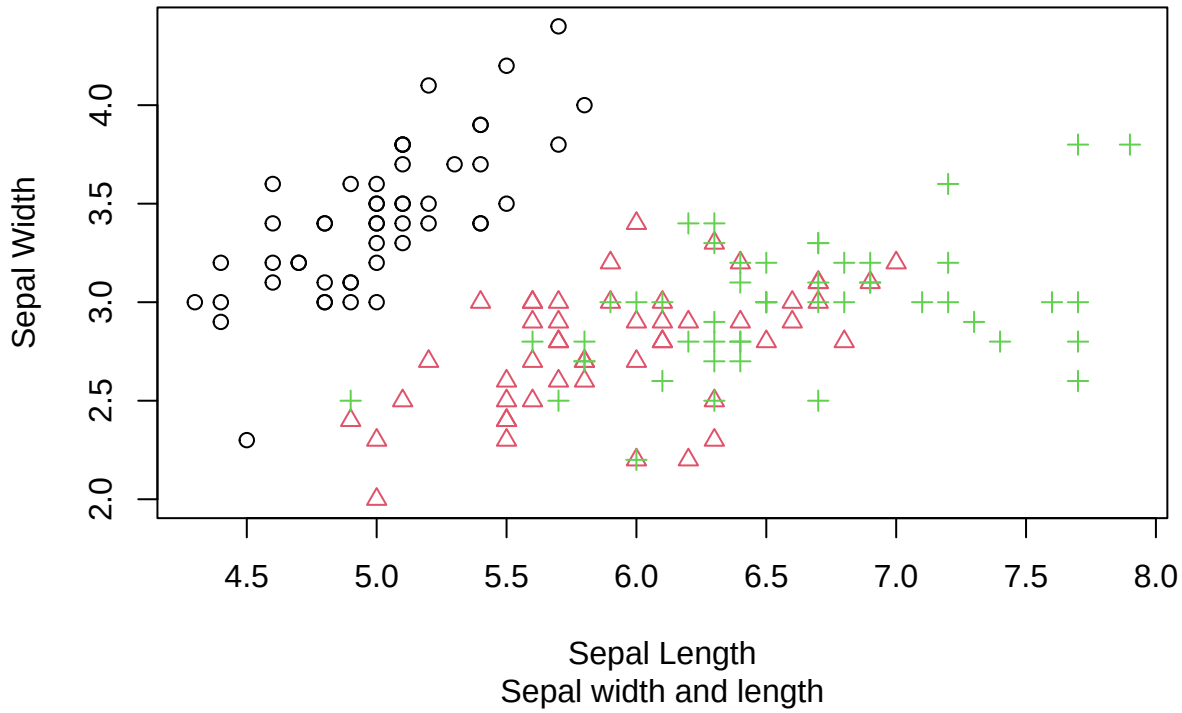
```
cat("Last six rows of Virginica:")
```

```
## 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"
)
```




```
#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/Rworksheet4/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
```

‘‘‘