RWorksheet_Leysa#4b

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1. for loop

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

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

Amatrix
```

```
##      [,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. Print "*" using for() function

```
for (i in 1:5){
  cat(rep("*",i),"\n")
}
```

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

3. Get an Input from user to print Fibonacci Sequence from 1st input to 500

```
#start_num <- as.numeric(readline(prompt = "Enter a number from 1-500: "))
#  a <- start_num
#  b <- start_num + 1

#  while (b <500) {
#    cat(a," ")
```

```r
#    next_numb <- a+b
#    a <- b
#    b<- next_numb
#  }

#  cat("\n")

#I make this chunk to a comment because this actually runs, however,when I knit it,
#it stops from knitting to pdf because it says that the while loop needs a true or false.
```

4. Import the dataset of Sizes,Height,Gender.csv

```r
data_list <- read.table("Sizes,Height,Gender.csv", sep = ",", header = TRUE)
data_list
```

```
##    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
```

4a. Display the first 6 rows

```r
head(data_list,6)
```

```
##   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
```

4b. Subset for male and female

```
data_of_male <- subset(data_list,Gender == "M")
data_of_female <- subset(data_list, Gender == "F")
cat("Male:", nrow(data_of_male), "\nFemale:", nrow(data_of_female), "\n")
```

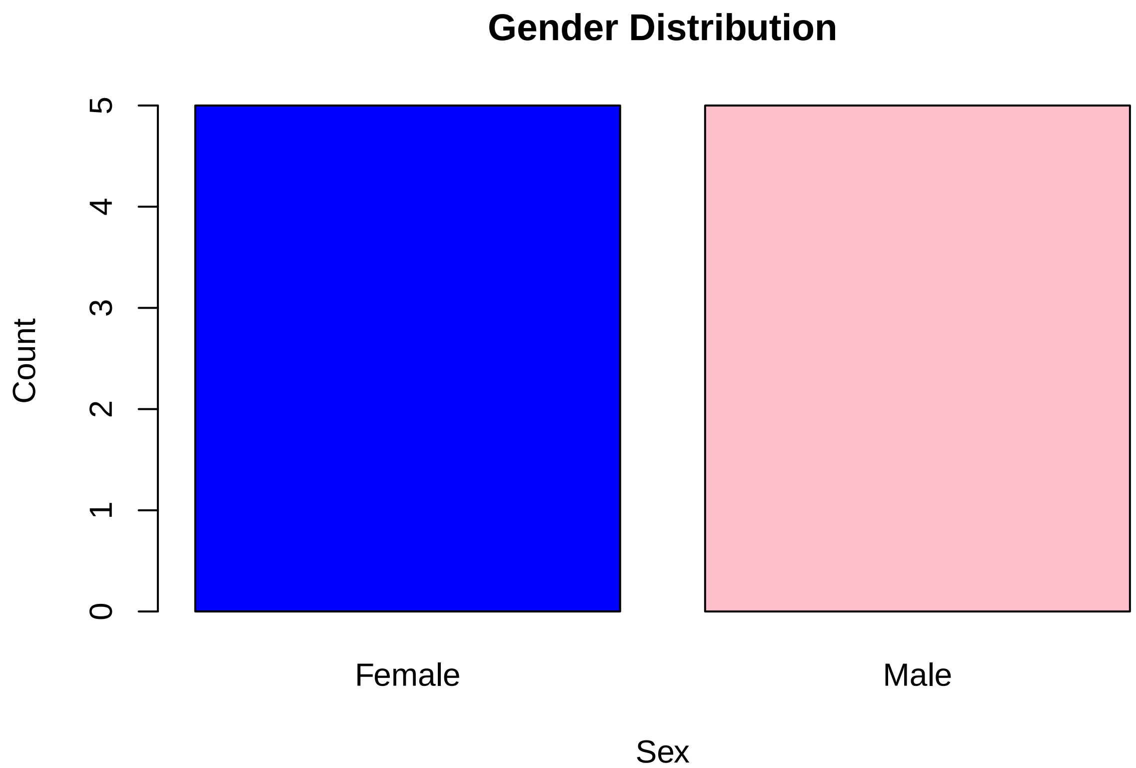
```
## Male: 14
## Female: 14
```

4c.Graph of numbers of males and females in household data

```
hdata <- read.table("HouseholdData.csv", sep = ",", header = TRUE)
hdata
```

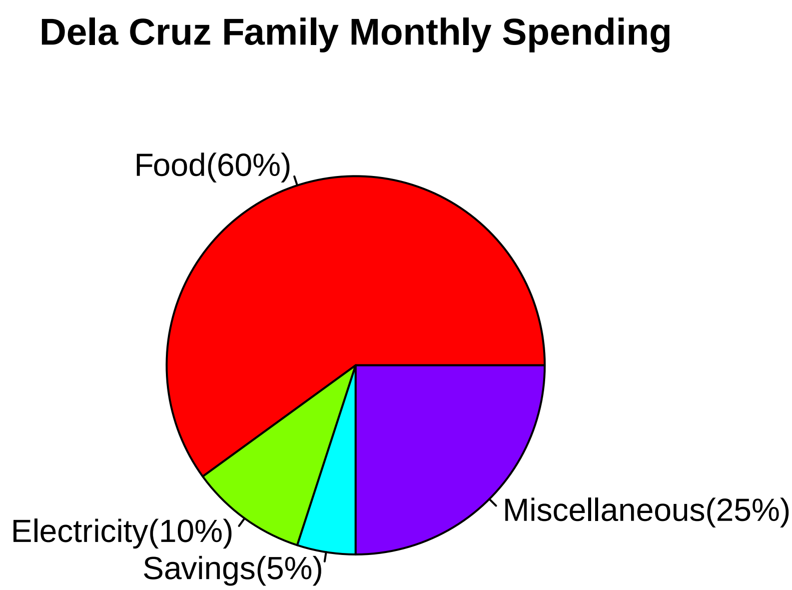
```
##    Respondents    Sex Fathers.Occupation Persons.at.Home Siblings.at.School
## 1            1   Male             Farmer               5                  2
## 2            2 Female             Driver               7                  3
## 3            3 Female             Others               3                  0
## 4            4   Male             Others               8                  5
## 5            5   Male             Farmer               6                  2
## 6            6 Female             Driver               4                  3
## 7            7 Female             Driver               4                  1
## 8            8   Male             Others               2                  2
## 9            9 Female             Farmer              11                  6
## 10          10   Male             Others               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
```

```
barplot(table(hdata$Sex), col = c("blue","pink"), main = "Gender Distribution",xlab = "Sex", ylab = "Co
```



5a. Pie Chart for Dela Cruz Family

```
expenses <- c(Food=60, Electricity=10,Savings=5,Miscellaneous=25)
percentage <- paste0(names(expenses),"(", round(expenses/sum(expenses)*100,1),"%)")
pie(expenses, labels= percentage, main = "Dela Cruz Family Monthly Spending", col=rainbow(length(expens
```



6a.Dataset of Iris

```
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 ...
```

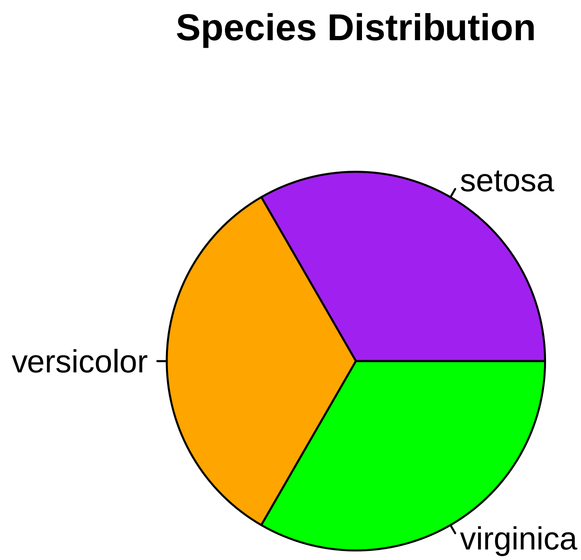
6b. Mean ofsepals and petals (length & width)

```
means <- colMeans(iris[,1:4])
means
```

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

6c. Pie Chart of Species Distribution

```
pie(table(iris$Species), main = "Species Distribution", col=c("purple","orange","green"))
```



6d. Subsets of Species

```
Setosa <- tail(subset(iris, Species == "setosa"),6)
VersiColor <- tail(subset(iris, Species == "versicolor"),6)
Virginica <- tail(subset(iris, Species == "virginica"),6)

Setosa
```

```
##    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
```

```
VersiColor
```

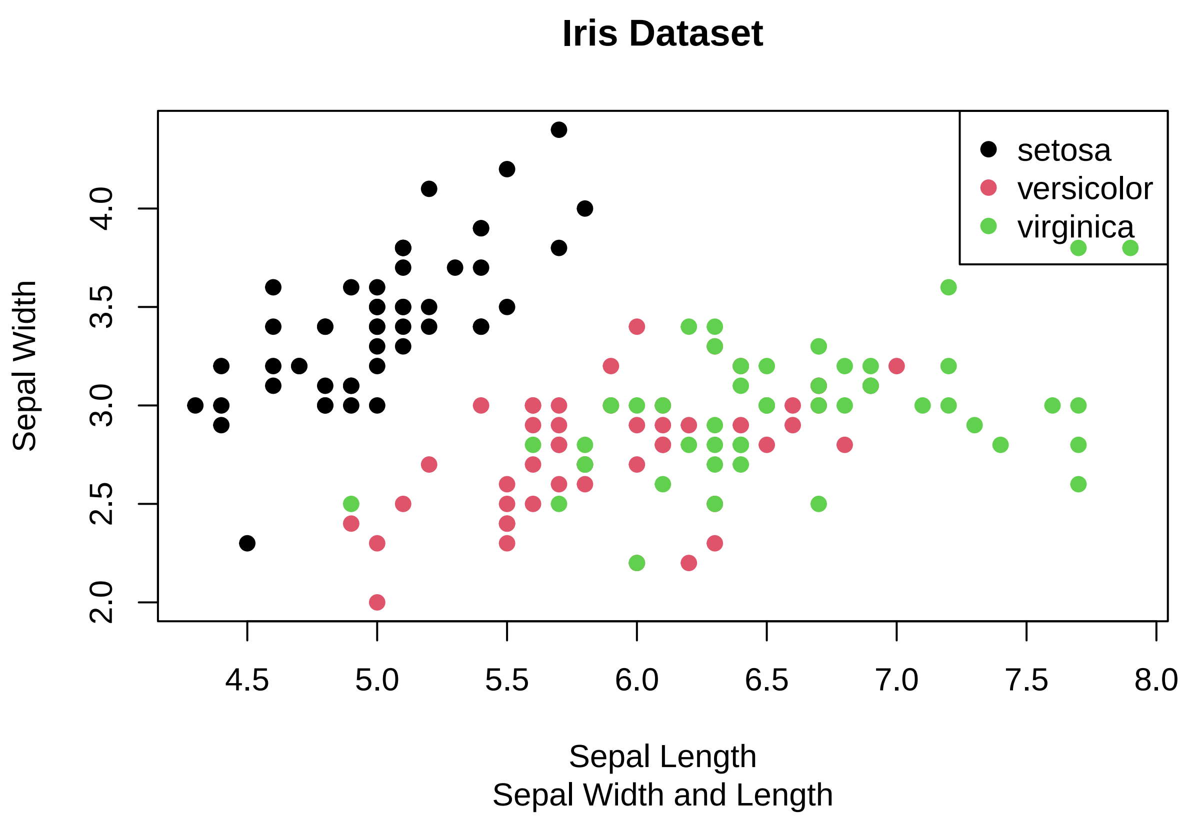
```
##     Sepal.Length Sepal.Width Petal.Length Petal.Width    Species
## 95           5.6         2.7          4.2         1.3 versicolor
## 96           5.7         3.0          4.2         1.2 versicolor
## 97           5.7         2.9          4.2         1.3 versicolor
## 98           6.2         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
```

```
Virginica
```

```
##     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
```

6e. Scatterplot

```
plot(iris$Sepal.Length, iris$Sepal.Width, col=iris$Species, pch=19, main = "Iris Dataset", xlab="Sepal I
legend("topright", legend=levels(iris$Species), col = 1:3, pch=19)
```



6f.

```
#Based on the scatter plot show, the Setosa is the most distinct species, and it can also
#be identified by its shorter sepal length and greater sepal width. On the other hand, the
#Versicolor and Virginica have more similar sepal dimensions because they have at least
#similar length and width of sepal, and in order to distinguish their difference, they need
# additional features, like petal measurements, in order to give us an accurate classification
# of these two species.
```

7.

```r
library(readxl)
alexadata <- read.table("alexa_file.xlsx", sep = ",", header = TRUE)
```

```
## Warning in read.table("alexa_file.xlsx", sep = ",", header = TRUE): line 1
## appears to contain embedded nulls
```

```
## Warning in read.table("alexa_file.xlsx", sep = ",", header = TRUE): incomplete
## final line found by readTableHeader on 'alexa_file.xlsx'
```

```r
alexadata
```

```
## [1] PK...
## <0 rows> (or 0-length row.names)
```