RWorksheet_Cautivar#4b.Rmd

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1. Using the for loop, create an R script that will display a 5x5 matrix as shown in Figure 1. It must contain vectorA = [1,2,3,4,5] and a 5 x 5 zero matrix.

```
vectorA <- c(1, 2, 3, 4, 5)

mat <- matrix(nrow = 5, ncol = 5)

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

for (i in 1:5) {
  for (j in 1:5) {
    cat(mat[i, j], " ")
  }
  cat("\n")
}
```

```
## 1  2  3  4  5
## 2  1  2  3  4
## 3  2  1  2  3
## 4  3  2  1  2
## 5  4  3  2  1
```

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

```
matrixz <- matrix(0, nrow = 5, ncol = 5)


for (i in 1:5) {
  for (j in 1:5) {
    cat(matrixz[i, j], " ")
  }
  cat("\n")
}
```

```
## 0  0  0  0  0
## 0  0  0  0  0
## 0  0  0  0  0
## 0  0  0  0  0
## 0  0  0  0  0
```

2. Print the string "*" using for() function. The output should be the same as shown in Figure

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

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

3. Get an input from the user to print the Fibonacci sequence starting from the 1st input up to 500. Use repeat and break statements. Write the R Scripts and its output.

```
inp <- as.integer(readline(prompt = "Input a number: "))
```

```
## Input a number:
```

```
inp <- 0 #example value of input because i cant knit it if it has a value of NA

a <- 0
b <- 1
term <- 1

repeat {

  if (a >= inp) {
    cat(a, " ")
  }


  fib <- a + b
  a <- b
  b <- fib
  term <- term + 1

  if (a > 500) {
    break
  }
}
```

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

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

4. Import the dataset as shown in Figure 1 you have created previously.

a. What is the R script for importing an excel or a csv file? Display the first 6 rows of the dataset? Show your codes and its result

```
file <- read.table("RespondentsData.csv", header = TRUE, sep = ",")
file
```

```
##    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
```

```
head(file)
```

```
##   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
```

b. Create a subset for gender(female and male). How many observations are there in Male? How about in Female? Write the R scripts and its output.

```
females <- subset(file, Gender == "F")
males <- subset(file, Gender == "M")
females
```

```
##    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
## 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
```

```
males
```

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

```
#Number of Observations
femalesObs <- nrow(females)
malesObs <- nrow(males)
femalesObs
```

```
## [1] 14
```

```
malesObs
```

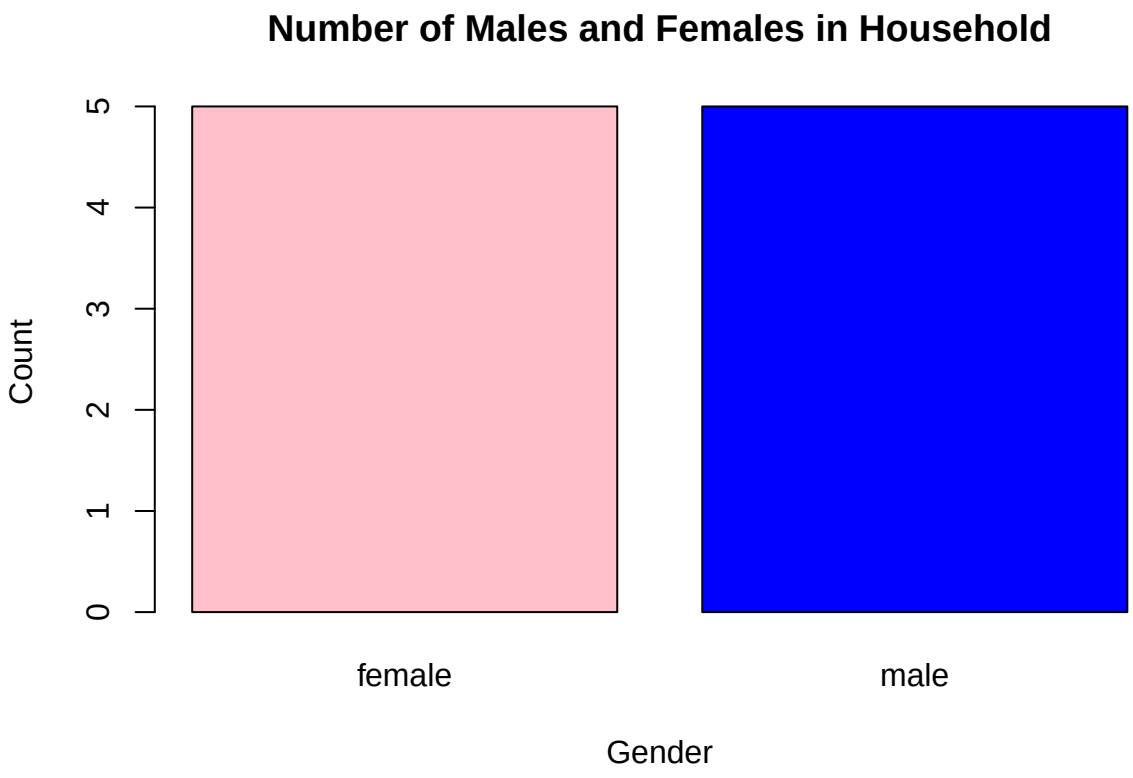
```
## [1] 14
```

c. Create a graph for the number of males and females for Household Data. Use plot(), chart type = barplot. Make sure to place title, legends, and colors. Write the R scripts and its result.

```
load("householdData.RData")

#i searched and used this function because the orginal householdData dataframe has extra spaces and it
householdData[["Sex"]] <- gsub(" ", "", householdData[["Sex"]])

#i also searched the table function to easily count the frequency of each gender. This is where i encou
genderCounts <- table(householdData$Sex)
barplot(
  genderCounts,
  col = c("pink", "blue"),
  main = "Number of Males and Females in Household",
  xlab = "Gender",
  ylab = "Count"
)
```



5. The monthly income of Dela Cruz family was spent on the following: a. Create a piechart that will include labels in percentage.Add some colors and title of the chart. Write the R scripts and show its output.

```r
amounts <- c(60, 10, 5, 25)
categories <- c("Food", "Electricity", "Savings", "Miscellaneous")
labels <- paste(categories, amounts, "%")

pie(
  amounts,
  labels = labels,
  col = c("yellow", "green", "pink", "orange"),
  main = "Expenses of Dela Cruz Family"
)
```

Expenses of Dela Cruz Family