RWorksheet_Subosa#4b.Rmd

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#1. Using the for loop, create an R script that will display a 5x5 matrix

```
vectorA <- c(1, 2, 3, 4, 5)
matrix5x5 <- matrix(0, nrow = 5, ncol = 5)

for (i in 1:5) {
  for (j in 1:5) {
    matrix5x5[i, j] <- abs(vectorA[i] - vectorA[j])
  }
}

print(matrix5x5)
```

```
##      [,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 the string "*" using for() function

```
asteris <- 5

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

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

#3. Fibonacci Sequence

```
val <- 25

a <- 0
b <- 1

if (val <= a) {
  cat(a, " ")
}
if (val <= b) {
  cat(b, " ")
```

```
}

repeat {
  next_number <- a + b
  if (next_number > 500) {
    break
  }
  if (next_number >= val) {
    cat(next_number, " ")
  }

  a <- b
  b <- next_number
}
```

```
## 34  55  89  144  233  377
```

#4. Import the dataset

```
#a.) Import the file. Display the first 6 rows of the dataset
my_data <- read.csv("shoe_height_gender_data.csv")
head(my_data)
```

```
##   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)
m_sub <- subset(my_data, Gender == "M")
f_sub <- subset(my_data, Gender == "F")

num_Male <- nrow(m_sub)
num_Female <- nrow(f_sub)

cat("Number of Male observations: ",num_Male, "\n")
```

```
## Number of Male observations:  13
```

```
cat("Number of Female observations: ",num_Female, "\n")
```

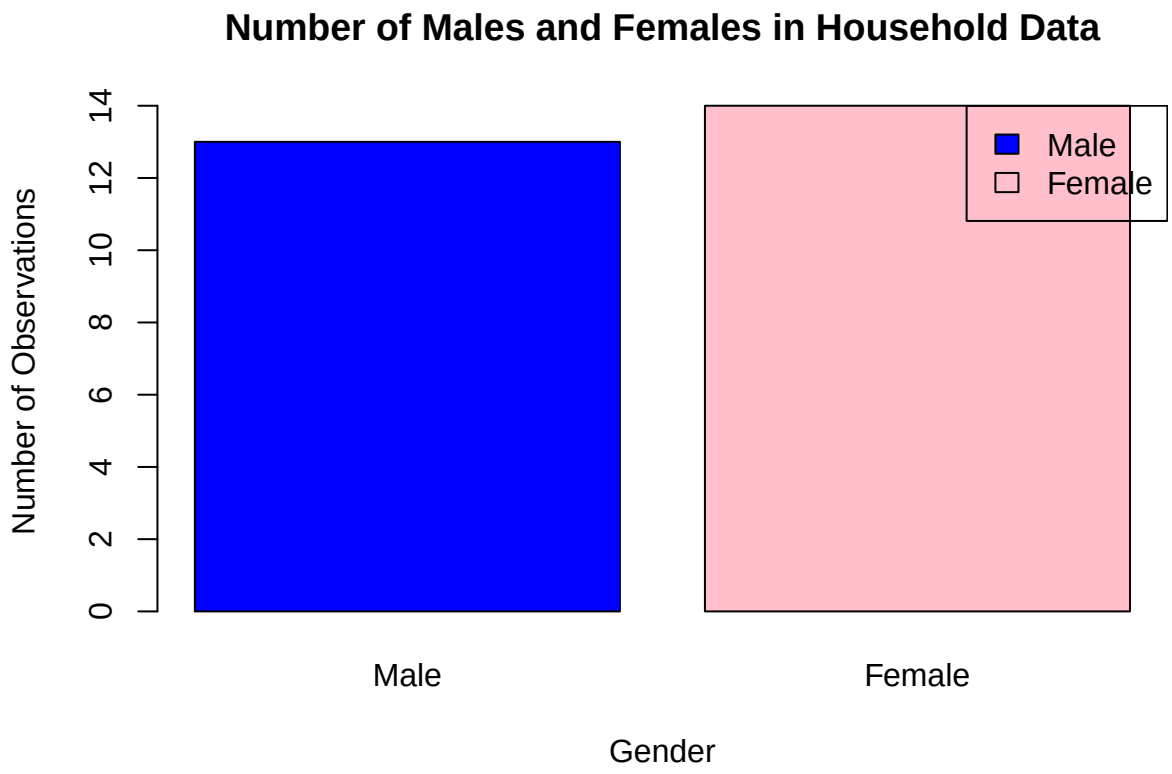
```
## Number of Female observations:  14
```

```
#c.) Create a graph for the number of males and females for Household Data
male_count <- nrow(subset(my_data, Gender == "M"))
female_count <- nrow(subset(my_data, Gender == "F"))

gender_count <- data.frame(
  Gender = c("Male", "Female"),
  Count = c(num_Male, num_Female)
)

barplot(
  height = gender_count$Count,
```

```
  names.arg = gender_count$Gender,
  col = c("blue", "pink"),
  main = "Number of Males and Females in Household Data",
  xlab = "Gender",
  ylab = "Number of Observations",
  legend.text = TRUE,
  beside = TRUE
)
legend("topright", legend = gender_count$Gender, fill = c("blue", "pink"))
```



#5. Monthly income of DeLaCruz family

```
# Data for Dela Cruz family's monthly income distribution
expenses <- c(60, 10, 5, 25)
labels <- c("Food", "Electricity", "Savings", "Miscellaneous")

#a.) Create a pie chart that will include labels in percentage
percentages <- round(expenses / sum(expenses) * 100, 1)
labels_with_percentages <- paste(labels, percentages, "%", sep = " ")
colors <- c("lightblue", "lightgreen", "red", "yellow")

pie(
  expenses,
  labels = labels_with_percentages,
  col = colors,
  main = "Monthly Income Distribution of Dela Cruz Family"
)
legend("topright", legend = labels, fill = colors)
```

Monthly Income Distribution of Dela Cruz Family