

RWork- sheet _ Redosendo#4b

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```
#1. Using the for loop, create an R script that will display a 5x5 matrix as shown inFigure 1. It must
vectorA <- 1:5
mat <- matrix(0, nrow = 5, ncol = 5)

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

##      [,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. 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. U
n <- 5
a <- 0
b <- 1
cat("Fibonacci numbers starting from", n, "up to 500:\n")

## Fibonacci numbers starting from 5 up to 500:
repeat {
  fib <- a + b
  if (fib > 500) break
  if (fib >= n) cat(fib, " ")
  a <- b
```

```

b <- fib
}

## 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.
fig1 <- matrix(c(0,1,2,3,4,
1,0,1,2,3,
2,1,0,1,2,
3,2,1,0,1,
4,3,2,1,0), nrow=5, byrow=TRUE)
write.csv(fig1, "figure1.csv", row.names=FALSE)
figure1 <- read.csv("figure1.csv", header=FALSE)
print(figure1)

##      V1 V2 V3 V4 V5
## 1  V1 V2 V3 V4 V5
## 2  0  1  2  3  4
## 3  1  0  1  2  3
## 4  2  1  0  1  2
## 5  3  2  1  0  1
## 6  4  3  2  1  0

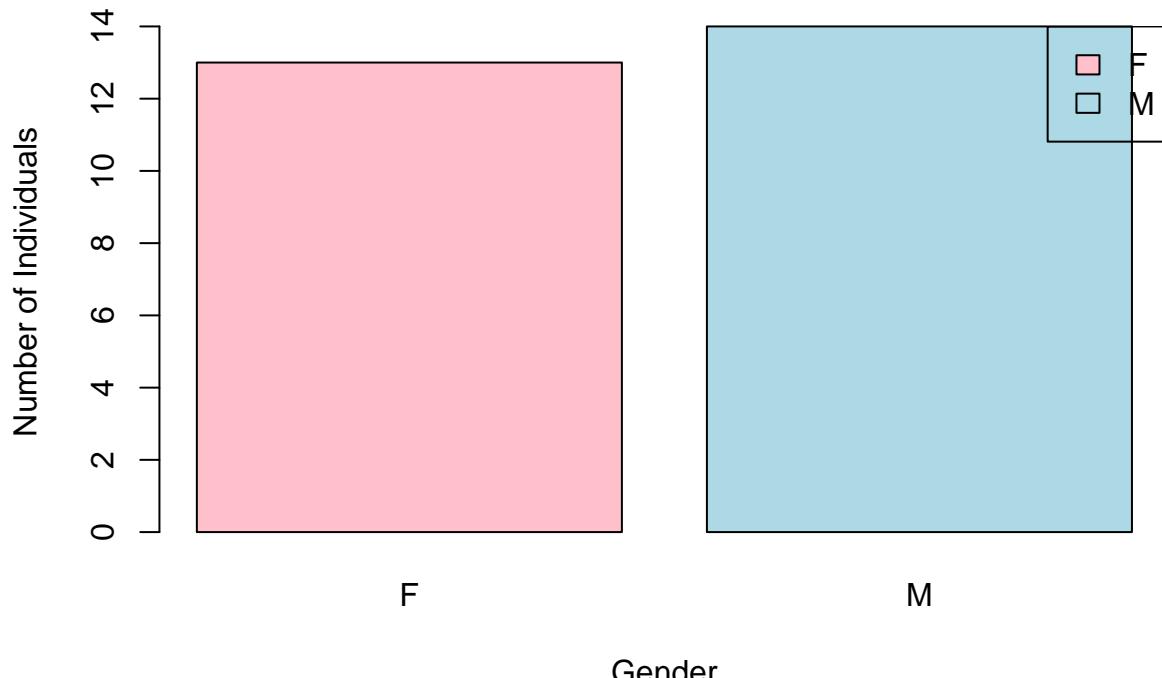
shoe_size <- c(6.5, 9.0, 8.5, 8.5, 10.5, 7.0, 9.5, 9.0, 13.0, 7.5, 10.5, 8.5, 12.0, 10.5,
13.0, 11.5, 8.5, 5.0, 10.0, 6.5, 7.5, 8.5, 10.5, 10.5, 11.0, 9.0, 13.0)
height <- c(66.0, 68.0, 64.5, 65.0, 70.0, 64.0, 70.0, 71.0, 72.0, 64.0, 74.5, 67.0, 71.0, 71.0,
77.0, 72.0, 59.0, 62.0, 72.0, 66.0, 64.0, 67.0, 73.0, 72.0, 69.0, 69.0, 70.0)
gender <- c("F", "F", "F", "F", "M", "F", "F", "F", "M", "F", "M", "F", "M", "M",
"M", "M", "F", "F", "M", "F", "F", "M", "M", "M", "M", "M", "M", "M")

df <- data.frame(Shoe_size = shoe_size, Height = height, Gender = gender)
write.csv(df, "figure3.csv", row.names = FALSE)

gender_count <- table(df$Gender)
barplot(gender_count, col=c("pink","lightblue"), main="Number of Males and Females in Household Data",
legend("topright", legend=names(gender_count), fill=c("pink","lightblue")))

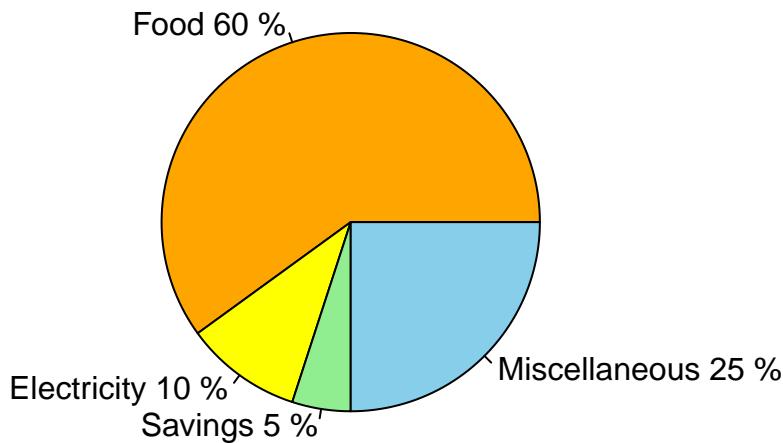
```

Number of Males and Females in Household Data



```
#5. The monthly income of Dela Cruz family was spent on the following:  
expenses <- c(60, 10, 5, 25)  
categories <- c("Food", "Electricity", "Savings", "Miscellaneous")  
percent <- round(expenses / sum(expenses) * 100)  
labels <- paste(categories, percent, "%")  
pie(expenses,  
    labels = labels,  
    col = c("orange", "yellow", "lightgreen", "skyblue"),  
    main = "Monthly Income Distribution of Dela Cruz Family")
```

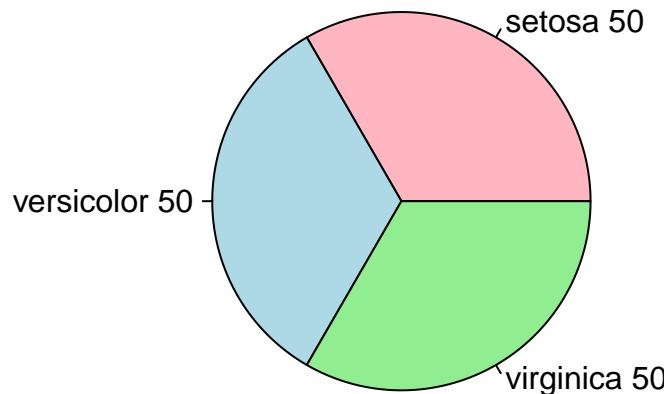
Monthly Income Distribution of Dela Cruz Family



```
#6. Use the iris dataset.
data(iris)
mean_values <- colMeans(iris[, 1:4])

species_count <- table(iris$Species)
pie(species_count, col = c("lightpink", "lightblue", "lightgreen"), main = "Species Distribution in Iris Dataset")
```

Species Distribution in Iris Dataset



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

colors <- c("red", "blue", "green")
species_colors <- colors[as.numeric(iris$Species)]
plot(iris$Sepal.Length, iris$Sepal.Width, col = species_colors, pch = 19, main = "Iris Dataset", sub =
legend("topright", legend = levels(iris$Species), col = colors, pch = 19)
```

Iris Dataset

