

RWorksheet_DelaCruz#4b

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```
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
```

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

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

```
calculate_fibonacci <- function(limit) {

  a <- 0
  b <- 1

  cat(a, " ")
  cat(b, " ")

  repeat {

    next_number <- a + b
```

```

    if (next_number > limit) {
      break
    }

    cat(next_number, " ")

    a <- b
    b <- next_number
  }
}

user_input <- 1

if (!is.na(user_input) && user_input > 0) {
  calculate_fibonacci(500)
} else {
  cat("Invalid input. Please enter a valid positive number.\n")
}

```

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

#user_input value should've been as.numeric(readline("Enter the starting number for the Fibonacci sequence"))

```

library(readxl)
HouseholdData <- read_excel("C:\\Users\\ASUS\\Documents\\Worksheet#4\\Worksheet#4\\HouseholdData.xlsx")
#View(HouseholdData)

```

```

Femsubset <- subset(HouseholdData, Gender == "F")
Malesubset <- subset(HouseholdData, Gender == "M")

fRow <- nrow(Femsubset)
mRow <- nrow(Malesubset)

cat("Number of observations for Female:", fRow, "\n")

```

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

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

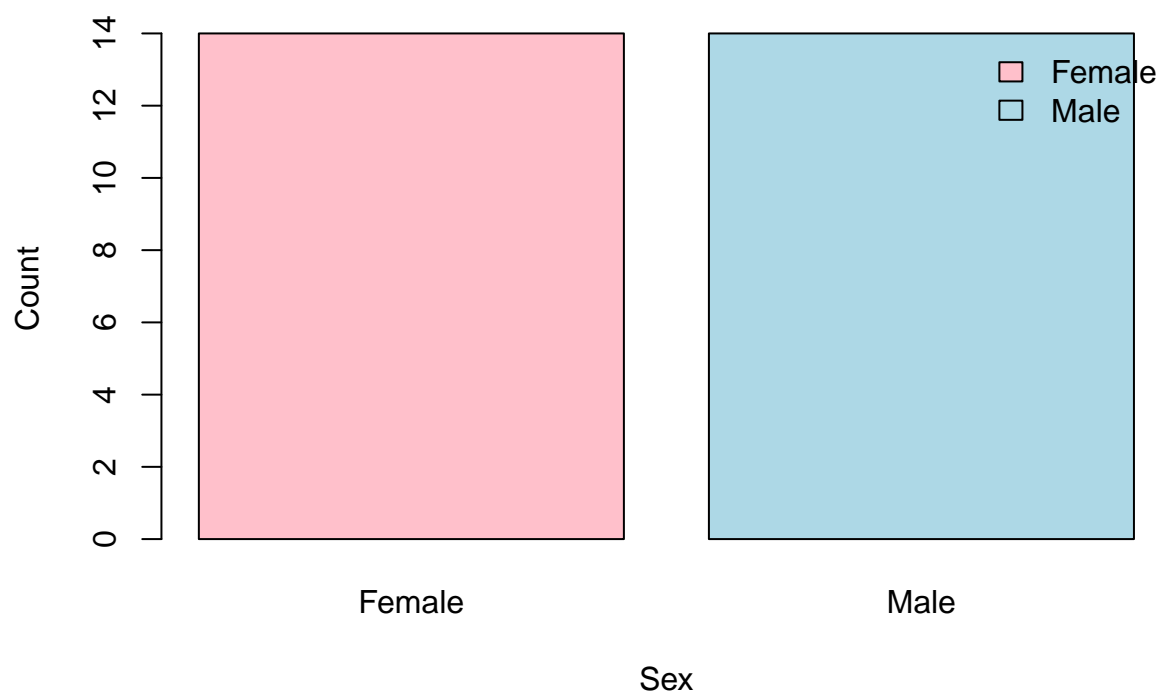
```
## Number of observations for Male: 14
```

```

sexCounts <- c(fRow, mRow)
sexLabels <- c("Female", "Male")
plot <- barplot(sexCounts, names.arg = sexLabels,
  main = "Number of Males and Females in Household Data",
  xlab = "Sex", ylab = "Count",
  col = c("pink", "lightblue"),
  legend.text = sexLabels,
  args.legend = list(x = "topright", bty = "n")
)

```

Number of Males and Females in Household Data



```
plot
```

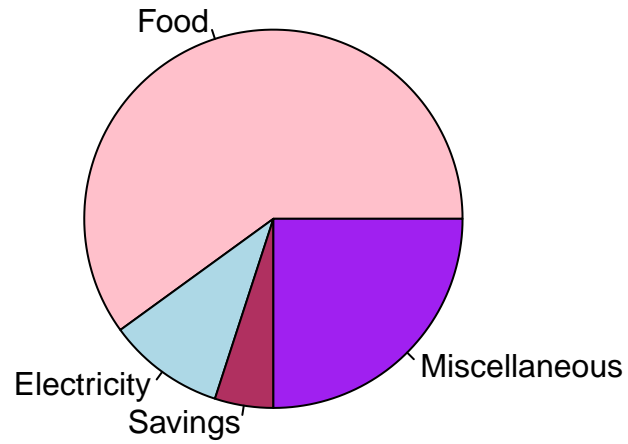
```
##      [,1]
## [1,]  0.7
## [2,]  1.9
```

```
incomeDF <- data.frame(
  Expenses = c("Food", "Electricity", "Savings", "Miscellaneous"),
  Amount = c(60, 10, 5, 25)
)
incomeDF
```

```
##      Expenses Amount
## 1      Food      60
## 2 Electricity     10
## 3     Savings      5
## 4 Miscellaneous    25
```

```
pie(incomeDF$Amount, labels = incomeDF$Expenses, col = c("pink", "lightblue", "maroon", "purple"),
    main = "Distribution of Income")
```

Distribution of Income



```
data("iris")
```

```
str("iris")
```

```
## chr "iris"
```

```
cat("The dataset iris is in character structure")
```

```
## The dataset iris is in character structure
```

```
mean_sep_length <- mean(iris$Sepal.Length)
```

```
mean_sep_width <- mean(iris$Sepal.Width)
```

```
mean_pet_length <- mean(iris$Petal.Length)
```

```
mean_pet_width <- mean(iris$Petal.Width)
```

```
mean_sep_length
```

```
## [1] 5.843333
```

```
mean_sep_width
```

```
## [1] 3.057333
```

```
mean_pet_length
```

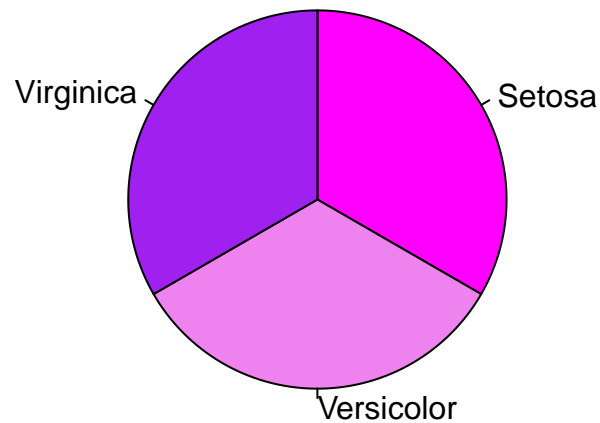
```
## [1] 3.758
```

```
mean_pet_width
```

```
## [1] 1.199333
```

```
species_chart <- table(iris$Species)
pie(species_chart, main = "Species Distribution in Iris Dataset",
    labels = c("Setosa", "Versicolor", "Virginica"),
    col = c("magenta", "violet", "purple"),
    clockwise = TRUE)
```

Species Distribution in Iris Dataset



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

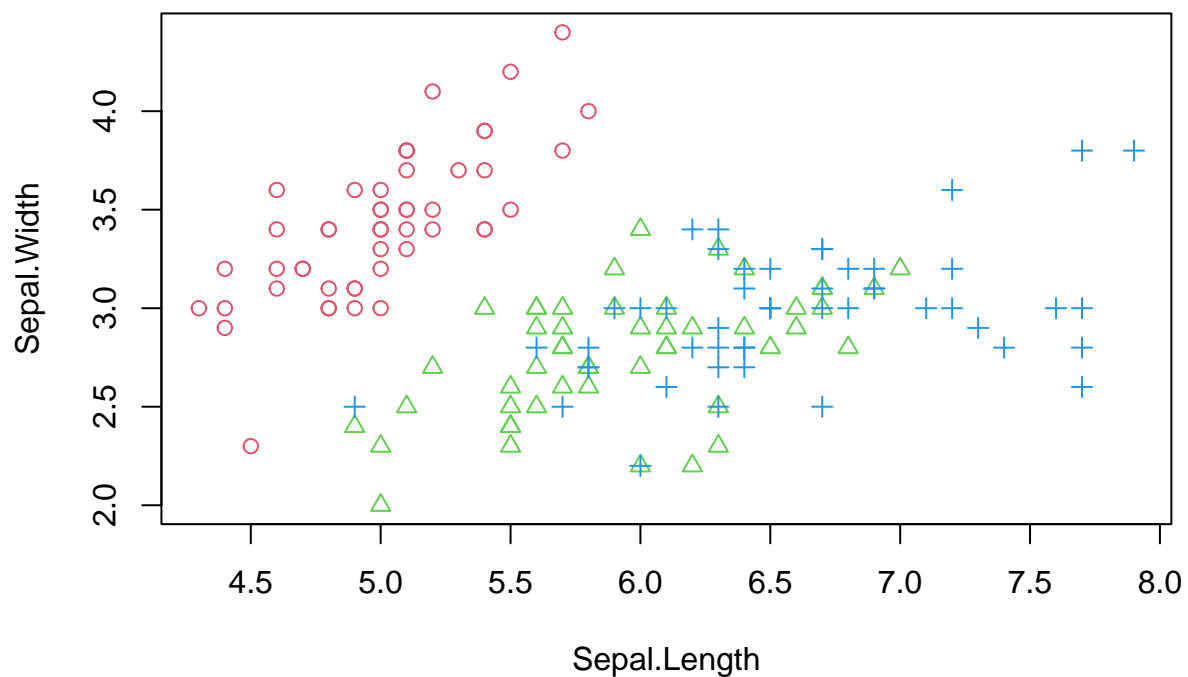
last6_setosa <- tail(subset(iris, Species == "setosa"))
last6_Versicolor <- tail(subset(iris, Species == "versicolor"))
last6_virginica <- tail(subset(iris, Species == "virginica"))

last6subsetSpeciesDF <- rbind(last6_setosa, last6_Versicolor, last6_virginica)
last6subsetSpeciesDF
```

##	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
## 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
## 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)
subiris <- iris[,1:2]

plot(subiris,
     pch = as.integer(iris$Species),
     col = as.integer(iris$Species)+9)
```



```
library(readxl)
alexa_file <- read_excel("C:\\Users\\ASUS\\Documents\\Worksheet#4\\Worksheet#4\\alexa_file.xlsx")
#View(alexa_file)
```

```
IrisFactor <- factor(iris$Species)
IrisFactor
```

```
## [1] setosa      setosa      setosa      setosa      setosa      setosa
## [7] setosa      setosa      setosa      setosa      setosa      setosa
## [13] setosa      setosa      setosa      setosa      setosa      setosa
## [19] setosa      setosa      setosa      setosa      setosa      setosa
## [25] setosa      setosa      setosa      setosa      setosa      setosa
## [31] setosa      setosa      setosa      setosa      setosa      setosa
## [37] setosa      setosa      setosa      setosa      setosa      setosa
## [43] setosa      setosa      setosa      setosa      setosa      setosa
## [49] setosa      setosa      versicolor  versicolor  versicolor  versicolor
## [55] versicolor  versicolor  versicolor  versicolor  versicolor  versicolor
## [61] versicolor  versicolor  versicolor  versicolor  versicolor  versicolor
## [67] versicolor  versicolor  versicolor  versicolor  versicolor  versicolor
## [73] versicolor  versicolor  versicolor  versicolor  versicolor  versicolor
## [79] versicolor  versicolor  versicolor  versicolor  versicolor  versicolor
## [85] versicolor  versicolor  versicolor  versicolor  versicolor  versicolor
## [91] versicolor  versicolor  versicolor  versicolor  versicolor  versicolor
## [97] versicolor  versicolor  versicolor  versicolor  virginica   virginica
## [103] virginica   virginica   virginica   virginica   virginica   virginica
## [109] virginica   virginica   virginica   virginica   virginica   virginica
## [115] virginica   virginica   virginica   virginica   virginica   virginica
## [121] virginica   virginica   virginica   virginica   virginica   virginica
## [127] virginica   virginica   virginica   virginica   virginica   virginica
## [133] virginica   virginica   virginica   virginica   virginica   virginica
## [139] virginica   virginica   virginica   virginica   virginica   virginica
## [145] virginica   virginica   virginica   virginica   virginica   virginica
## Levels: setosa versicolor virginica
```

```
cat("This will display the character values of the species column and the levels")
```

```
## This will display the character values of the species column and the levels
```

```
oldName = c("Black Dot","Black Plus","Black Show","Black Spot","White Dot", "White Plus", "White Show")
newName = c("Black Dot","Black Plus","Black Show","Black Spot","White Dot", "White Plus", "White Show",
```

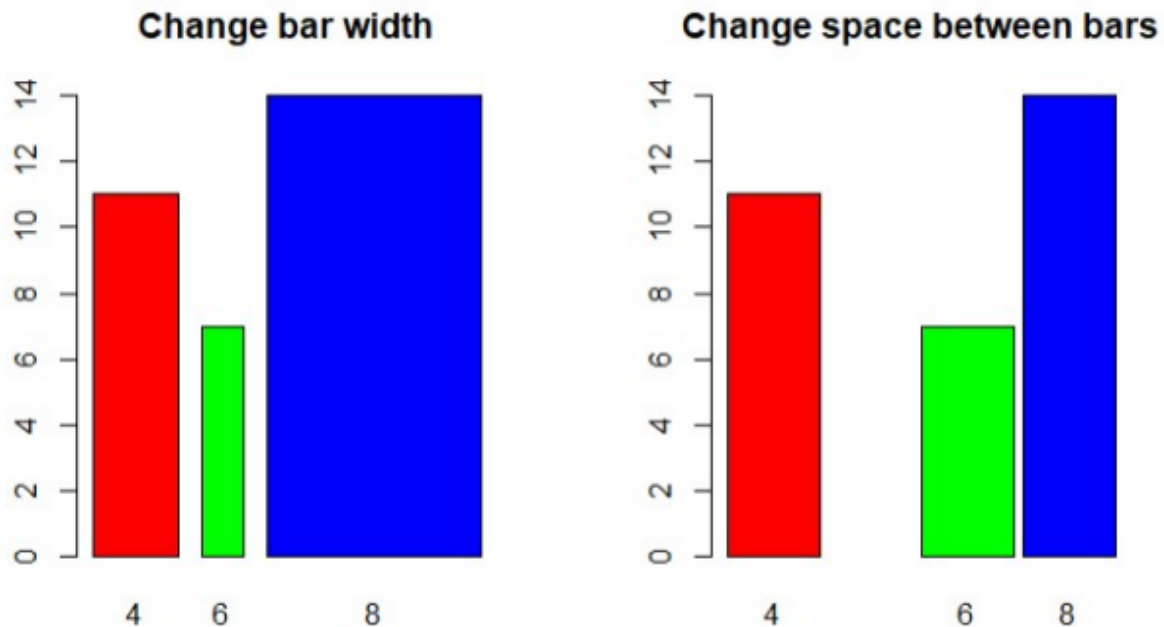
```
alexa_file$variation <- gsub("Black Dot","Black Dot",alexa_file$variation)
alexa_file$variation <- gsub("Black Plus","Black Plus",alexa_file$variation)
alexa_file$variation <- gsub("Black Show","Black Show",alexa_file$variation)
alexa_file$variation <- gsub("Black Spot","Black Spot",alexa_file$variation)
alexa_file$variation <- gsub("White Dot","White Dot",alexa_file$variation)
alexa_file$variation <- gsub("White Show","White Show",alexa_file$variation)
alexa_file$variation <- gsub("White Spot","White Spot",alexa_file$variation)
```

```
alexa_file
```

```
## # A tibble: 3,150 x 5
```

```
##      rating date          variation      verified_reviews      feedback
##      <dbl> <dtm>          <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
```

```
knitr::include_graphics("screenshot.png")
```



```
library("dplyr")
```

```
## Warning: package 'dplyr' was built under R version 4.3.2
```

```
##
```

```
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
```

```
##
```

```
## filter, lag
```

```
## The following objects are masked from 'package:base':
```

```
##
```

```
## intersect, setdiff, setequal, union
```



```
variationCount <- alexa_file %>%
count(variation)
variationCount
```

```
## # A tibble: 16 x 2
##   variation      n
##   <chr>      <int>
## 1 Black      261
## 2 Black Dot  516
## 3 Black Plus 270
## 4 Black Show 265
## 5 Black Spot 241
## 6 Charcoal Fabric 430
## 7 Configuration: Fire TV Stick 350
## 8 Heather Gray Fabric 157
## 9 Oak Finish 14
## 10 Sandstone Fabric 90
## 11 Walnut Finish 9
## 12 White      91
## 13 White Plus 78
## 14 White Dot 184
## 15 White Show 85
## 16 White Spot 109
```

```
save(variationCount, file = "Variations.RData")
```

```
load("Variations.RData")
```

```
blackVar <- variationCount[1:5,]
whiteVar <- variationCount[12:16,]
```

```
par(mfrow = c(1, 2))
```

```
barplot(blackVar$n, main = "Black Variants",
        xlab = "Variants",
        ylab = "Total Numbers",
        col = c("red", "orange", "yellow", "green", "navyblue"),
        names.arg = blackVar$variation,
        cex.names = 0.35)
```

```
barplot(whiteVar$n, main = "White Variants",
        xlab = "Variants",
        ylab = "Total Numbers",
        col = c("red", "orange", "yellow", "green", "navyblue"),
        names.arg = whiteVar$variation,
        cex.names = 0.35)
```

