

RWorksheet__Bajacan#4b

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#1

```
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
```

#2

```
n <- 5 # The number of rows

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

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

#3

```
input_number <- as.numeric(readline("Enter a number to start the Fibonacci sequence: "))
```

```
## Enter a number to start the Fibonacci sequence:
```

```
assume_number <- 0
a <- 0
b <- 1
```

```
repeat {

  if (a > 500) {
    break
  }

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

  temp <- a + b
  a <- b
  b <- temp
}
```

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

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

```
#4A
```

```
shoesize <- read.csv("Shoe_sizes.csv")
shoesize
```

```
##      Shoe.Size Height Gender
## 1          6.5   66.0      F
## 2          9.5   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
```

```
shoes <- shoesize[c(1:6),]  
shoes
```

```
##      Shoe.Size Height Gender  
## 1         6.5   66.0      F  
## 2         9.5   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
```

```
female_data <- subset(shoesize, Gender == "F")  
female_data
```

```
##      Shoe.Size Height Gender  
## 1         6.5   66.0      F  
## 2         9.5   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
```

```
male_data <- subset(shoesize, Gender == "M")  
male_data
```

```
##      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
```

```
nrow(female_data)
```

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

```
nrow(male_data)
```

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

```
#They have both 14 observations
```

```
#4C
```

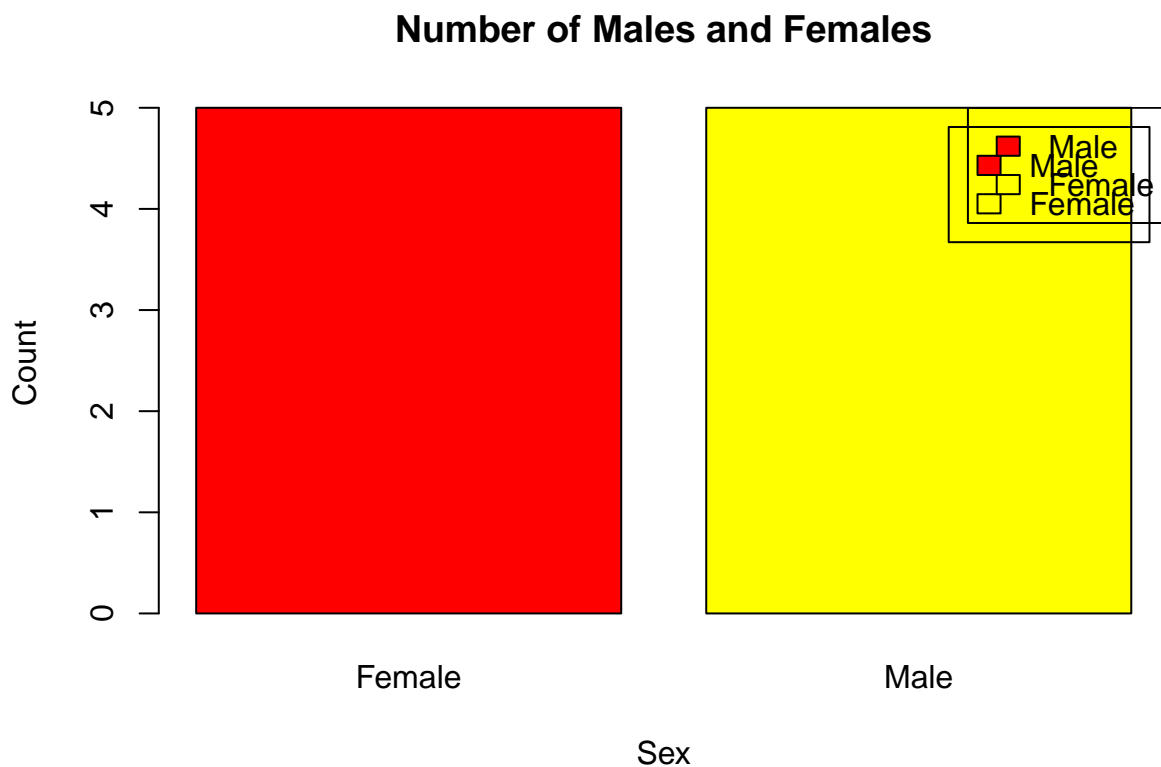
```
# Create a data frame with the provided data
```

```
data <- data.frame(  
  Respondents = 1:10,  
  Sex = c("Male", "Female", "Female", "Male", "Male", "Female", "Female", "Male", "Female", "Male"),  
  Fathers_Occupation = c(1, 2, 3, 3, 1, 2, 2, 3, 1, 3),  
  Person_at_Home = c(5, 7, 3, 8, 6, 4, 4, 2, 11, 6),  
  Siblings_at_school = c(2, 3, 0, 5, 2, 3, 1, 2, 6, 2),  
  Types_of_houses = c("Wood", "Concrete", "Concrete", "Wood", "Semi-Concrete", "Semi-Concrete", "Wood",  
)
```

```
gender_counts <- table(data$Sex)
```

```
bar_colors <- c("red", "yellow")
```

```
barplot(gender_counts, main="Number of Males and Females", xlab="Sex", ylab="Count", col=bar_colors,  
  legend.text=c("Male", "Female"), beside=TRUE)  
legend("topright", legend=c("Male", "Female"), fill=bar_colors)
```



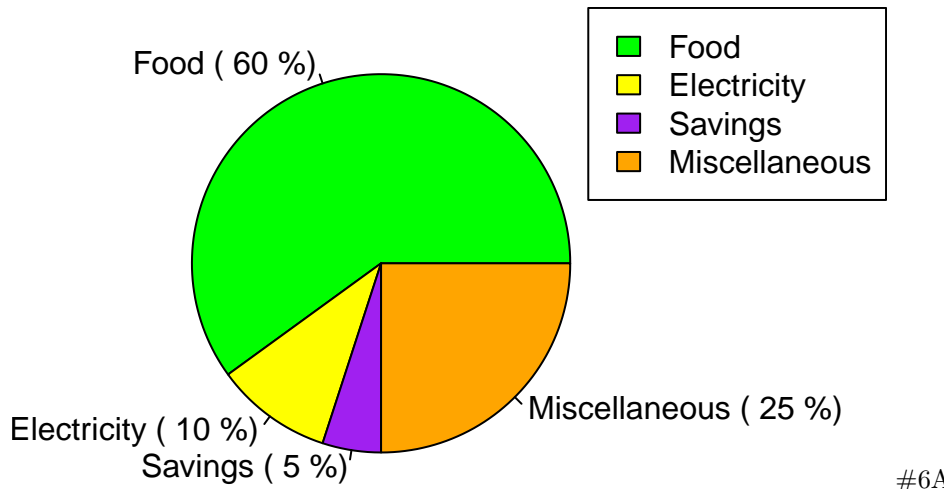
```
#5
```

```
expenses <- c(Food = 60, Electricity = 10, Savings = 5, Miscellaneous = 25)
```

```
pie(expenses, labels = paste(names(expenses), "(", round((expenses/sum(expenses))*100), "%"),  
  col = c("green", "yellow", "purple", "orange"),  
  main = "Monthly Expenses of Dela Cruz Family")
```

```
legend("topright", legend = names(expenses), fill = c("green", "yellow", "purple", "orange"))
```

Monthly Expenses of Dela Cruz Family



```
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

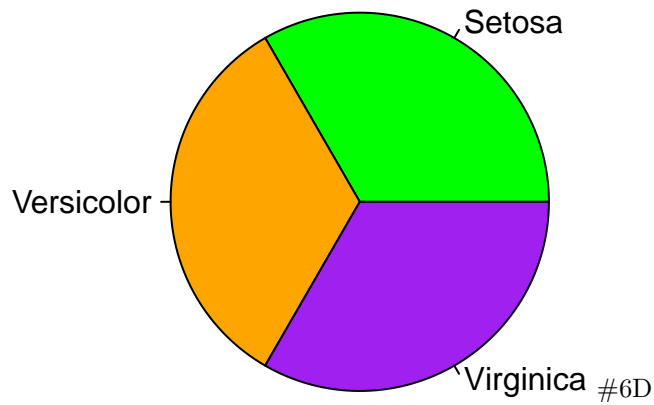
```
MeanIris<- colMeans(iris[, c("Sepal.Length", "Sepal.Width", "Petal.Length", "Petal.Width")])
print(MeanIris)
```

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

#6C

```
pie(table(iris$Species), labels = c("Setosa", "Versicolor", "Virginica"), col = c("green", "orange", "purple"))
```

Species Distribution



```
setosa_data <- iris[iris$Species == "setosa", ]
versicolor_data <- iris[iris$Species == "versicolor", ]
virginica_data <- iris[iris$Species == "virginica", ]
```

```
head(setosa_data, 6)
```

```
##      Sepal.Length Sepal.Width Petal.Length Petal.Width Species
## 1           5.1         3.5         1.4         0.2  setosa
## 2           4.9         3.0         1.4         0.2  setosa
## 3           4.7         3.2         1.3         0.2  setosa
## 4           4.6         3.1         1.5         0.2  setosa
## 5           5.0         3.6         1.4         0.2  setosa
## 6           5.4         3.9         1.7         0.4  setosa
```

```
head(versicolor_data, 6)
```

```
##      Sepal.Length Sepal.Width Petal.Length Petal.Width Species
## 51           7.0         3.2         4.7         1.4 versicolor
## 52           6.4         3.2         4.5         1.5 versicolor
## 53           6.9         3.1         4.9         1.5 versicolor
## 54           5.5         2.3         4.0         1.3 versicolor
## 55           6.5         2.8         4.6         1.5 versicolor
## 56           5.7         2.8         4.5         1.3 versicolor
```

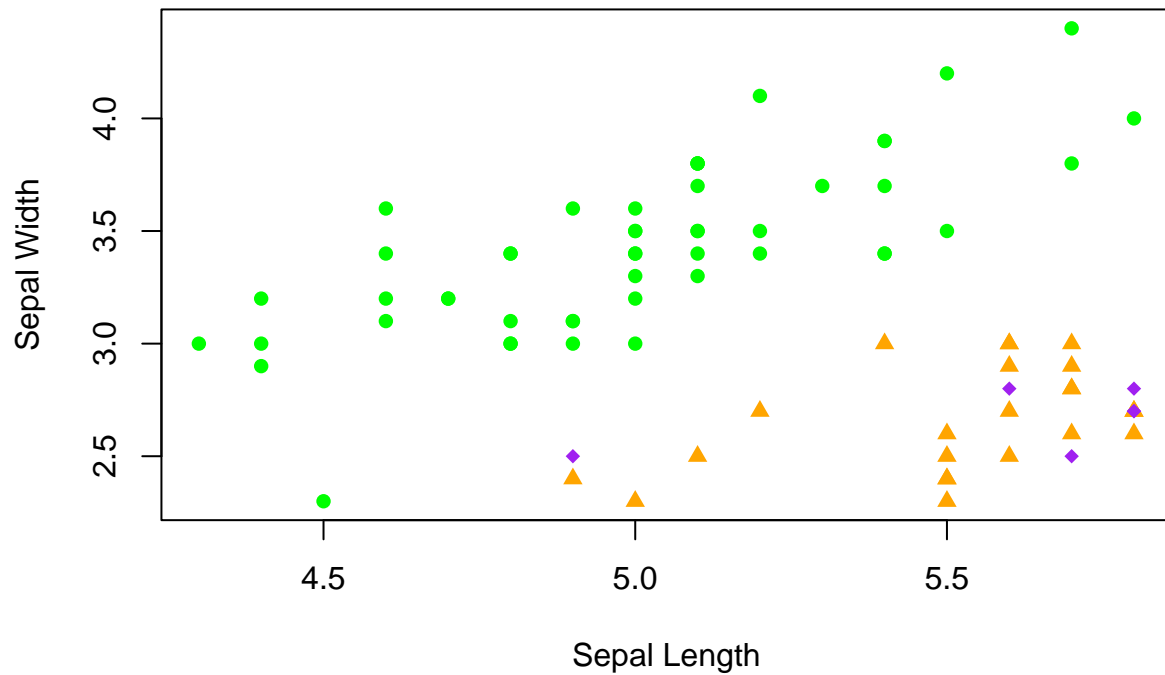
```
head(virginica_data, 6)
```

```
##      Sepal.Length Sepal.Width Petal.Length Petal.Width Species
## 101           6.3         3.3         6.0         2.5 virginica
## 102           5.8         2.7         5.1         1.9 virginica
## 103           7.1         3.0         5.9         2.1 virginica
## 104           6.3         2.9         5.6         1.8 virginica
## 105           6.5         3.0         5.8         2.2 virginica
## 106           7.6         3.0         6.6         2.1 virginica
```

```
#6E
```

```
plot(x = iris$Sepal.Length[iris$Species == "setosa"], y = iris$Sepal.Width[iris$Species == "setosa"], p
points(x = iris$Sepal.Length[iris$Species == "versicolor"], y = iris$Sepal.Width[iris$Species == "versi
points(x = iris$Sepal.Length[iris$Species == "virginica"], y = iris$Sepal.Width[iris$Species == "virgin
```

Iris Dataset



#6F

The color green has the longest length and width which is the Setosa.

#7A

```
library(readxl)
alexa_file <- read_excel("alexa_file.xlsx")
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
```