RWORKSHEET_CATEDRAL4#B

RcCatedral

2023-11-08

#1.

```
vectorA <- c(1, 2, 3, 4, 5)
zero_matrix <- matrix(0, nrow = 5, ncol = 5)
result_matrix <- zero_matrix + vectorA
print(result_matrix)
```

```
##      [,1] [,2] [,3] [,4] [,5]
## [1,]    1    1    1    1    1
## [2,]    2    2    2    2    2
## [3,]    3    3    3    3    3
## [4,]    4    4    4    4    4
## [5,]    5    5    5    5    5
```

#2

```
rows <- 5
cols <- 5

for (i in 1:rows) {
  for (j in 1:cols) {
    if (j <= i) {
      cat("* ")
    } else {
      cat("  ")
    }
  }
  cat("\n")
}
```

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

#3

```
n <- as.integer(readline(prompt = "Enter a number to start the Fibonacci sequence: "))
```

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

```
a <- 0
b <- 1

cat(a, " ")
```

```
## 0
```

```
repeat {

  next_term <- a + b


  if (next_term > 500) {
    break
  }

  cat(next_term, " ")

  a <- b
  b <- next_term
}
```

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

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

#4

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

```
##    Shoe.size Height Gender Shoe.size.1 Height.1 Gender.1
## 1        6.5   66.0      F        13.0       77        M
## 2        9.0   68.0      F        11.5       72        M
## 3        8.5   64.5      F         8.5       59        F
## 4        8.5   65.0      F         5.0       62        F
## 5       10.5   70.0      M        10.0       72        M
## 6        7.0   64.0      F         6.5       66        F
## 7        9.5   70.0      F         7.5       64        F
## 8        9.0   71.0      F         8.5       67        M
## 9       13.0   72.0      M        10.5       73        M
## 10       7.5   64.0      F         8.5       69        F
## 11      10.5   74.5      M        10.5       72        M
## 12       8.5   67.0      F        11.0       70        M
## 13      12.0   71.0      M         9.0       69        M
## 14      10.5   71.0      M        13.0       70        M
```

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

```
##   Shoe.size Height Gender Shoe.size.1 Height.1 Gender.1
## 1       6.5   66.0      F        13.0       77        M
## 2       9.0   68.0      F        11.5       72        M
## 3       8.5   64.5      F         8.5       59        F
## 4       8.5   65.0      F         5.0       62        F
## 5      10.5   70.0      M        10.0       72        M
## 6       7.0   64.0      F         6.5       66        F
```

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

```
##   Shoe.size Height Gender Shoe.size.1 Height.1 Gender.1
## 1       6.5   66.0      F        13.0       77        M
```

```
## 2       9.0   68.0      F        11.5       72        M
## 3       8.5   64.5      F         8.5       59        F
## 4       8.5   65.0      F         5.0       62        F
## 6       7.0   64.0      F         6.5       66        F
```

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

```
##   Shoe.size Height Gender Shoe.size.1 Height.1 Gender.1
## 5      10.5     70      M          10       72        M
```

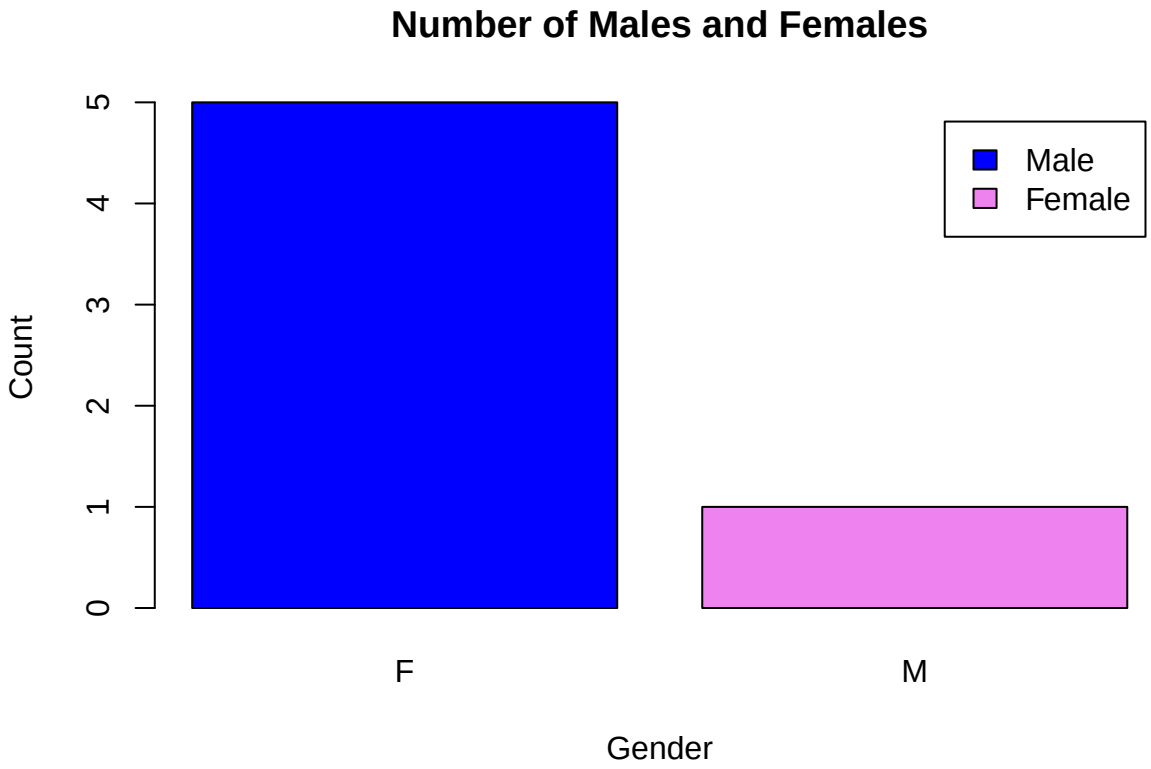
```
nrow(female_data)
```

```
## [1] 5
```

```
nrow(male_data)
```

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

```
GraphMF<- table(Shoe_sizes$Gender)
barplot(GraphMF,
        main = "Number of Males and Females",
        xlab = "Gender",
        ylab = "Count",
        col = c("Blue", "Violet"),
        legend.text = c("Male", "Female"),
        beside = TRUE
)
```

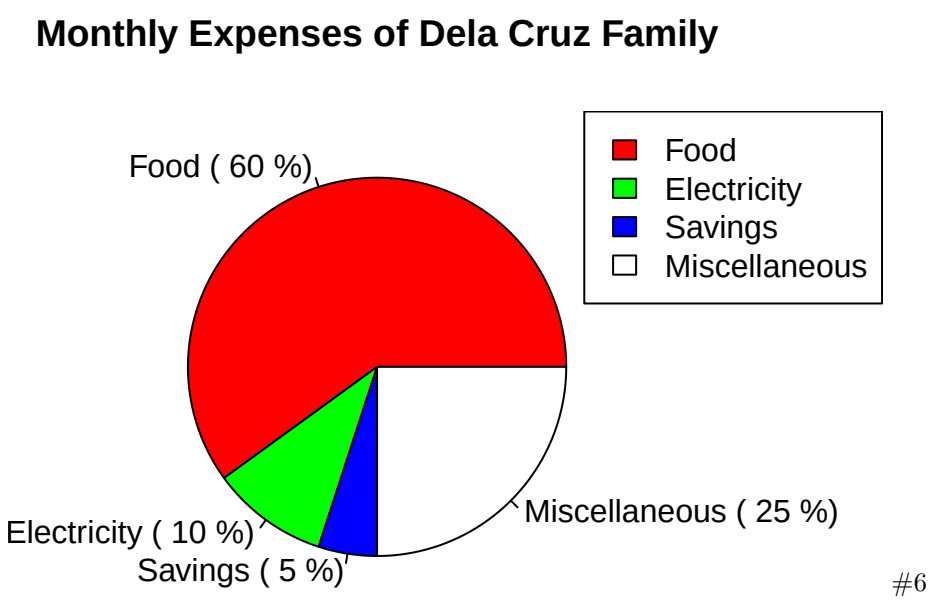


#5

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

```
pie(expenses, labels = paste(names(expenses), "(", round((expenses/sum(expenses))*100), "%)"),
    col = c("Red", "Green", "Blue", "White"),
    main = "Monthly Expenses of Dela Cruz Family")

legend("topright", legend = names(expenses), fill = c("Red", "Green", "Blue", "White"))
```



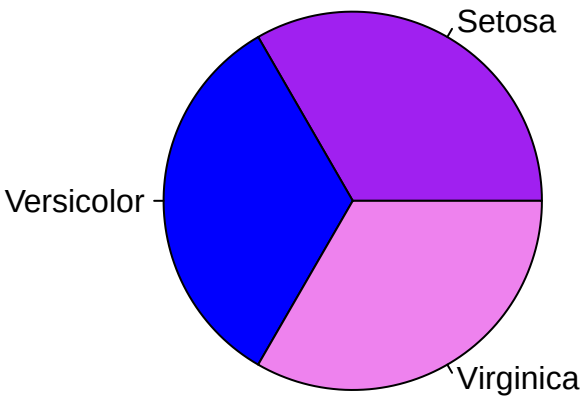
#6

```
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 ...
```

```
mean_values <- c(mean(iris$Sepal.Length),
mean(iris$Sepal.Width),
mean(iris$Petal.Length),
mean(iris$Petal.Width))
```

```
pie(table(iris$Species), labels = c("Setosa", "Versicolor", "Virginica"), col = c("Purple", "Blue", "Vi
```




```r
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
```

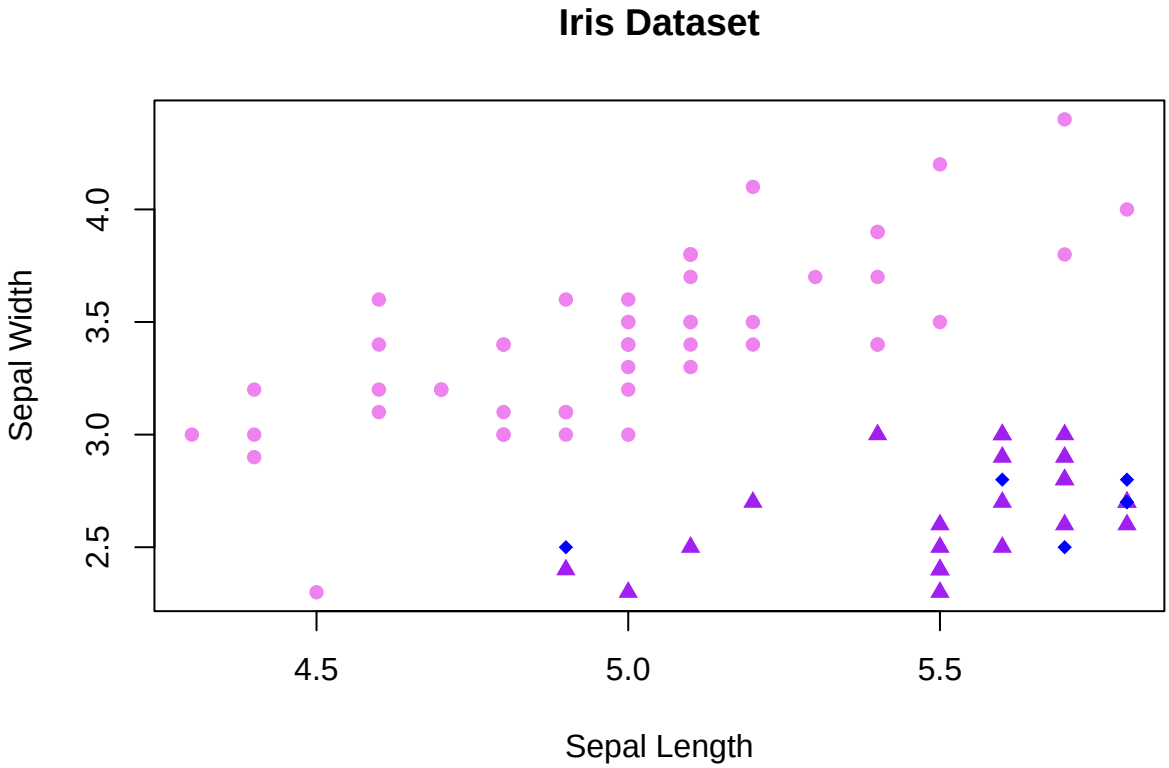
```r
head(versicolor_data, 6)
```

```
##    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
```

```r
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
```

```r
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
```




```
#Setosa which is the color Violet according to my graph is the longest sepal lenght and width
```

#7