RWorksheet 4b

Andrey Sumadic

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```r
#1.
vectorB <- c(1,2,3,4,5)

matrixB <- matrix(0, nrow = 5, ncol = 5)
print(matrixB)
```

```
##      [,1] [,2] [,3] [,4] [,5]
## [1,]    0    0    0    0    0
## [2,]    0    0    0    0    0
## [3,]    0    0    0    0    0
## [4,]    0    0    0    0    0
## [5,]    0    0    0    0    0
```

```r
for(i in 1:5){
  for(j in 1:5){
    matrixB[i,j] <- abs(vectorB[i] - vectorB[j])
  }
}
print(matrixB)
```

```
##      [,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
```

```r
#2.
for(i in 1:5) {
  for(j in 1:i) {
    cat("*")
  }
  cat("\n")
}
```

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

```r
#3.
print("Enter a positive integer to start the Fibonacci sequence: ")
```

```
## [1] "Enter a positive integer to start the Fibonacci sequence: "
```

```
start <- as.integer(readline(prompt = ""))
```

```
#repeat {
#  print(start)
#  if(start > 500) break
#  next <- start + tail(fib, n=1)
#  start <- next
#}
```

```
#4.
#a.
shoe <- read.csv("shoe data.csv")
shoes <- shoe[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
```
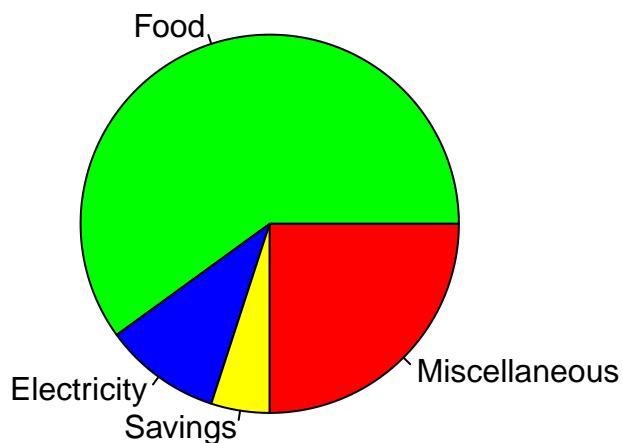
```
#5.
expenses <- c(60, 10, 5, 25)
labels <- c("Food", "Electricity", "Savings", "Miscellaneous")

pie(expenses, labels = labels, col = c("green","blue","yellow","red"),
    main = "Monthly Expenses of Dela Cruz Family")
```

Monthly Expenses of Dela Cruz Family


```
#6.
#a.
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 ...
```
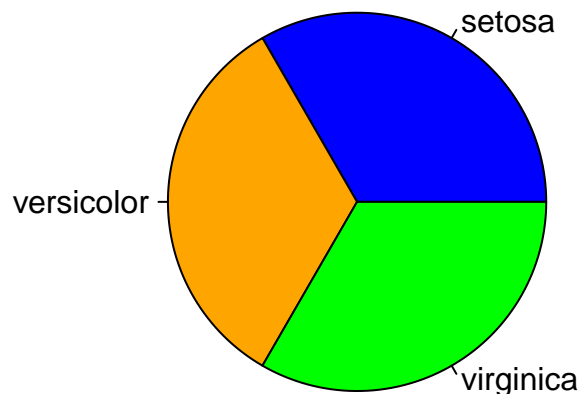
```
#b.
```

```
#c.
species <- table(iris$Species)
pie(species, labels = names(species), col = c("blue","orange","green"), main = "Species Distribution in
```

Species Distribution in Iris Data


```
#d.
setosa <- iris[iris$Species=="setosa",]
versicolor <- iris[iris$Species=="versicolor",]
virginica <- iris[iris$Species=="virginica",]
```

```
tail(setosa, n=6)
```

```
##    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
```

```
tail(versicolor, n=6)
```

```
##     Sepal.Length Sepal.Width Petal.Length Petal.Width    Species
## 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
```

```
tail(virginica, n=6)
```

```
##     Sepal.Length Sepal.Width Petal.Length Petal.Width    Species
```

```
## 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
```

#e.

#f.