Work Sheet 5

Gabriel Leornas BSIT-2A

2022-11-21

1. The table shows the enrollment of BS in Computer Science, SY 2010-2011.

Course Year 2019 - 2020

1st 80

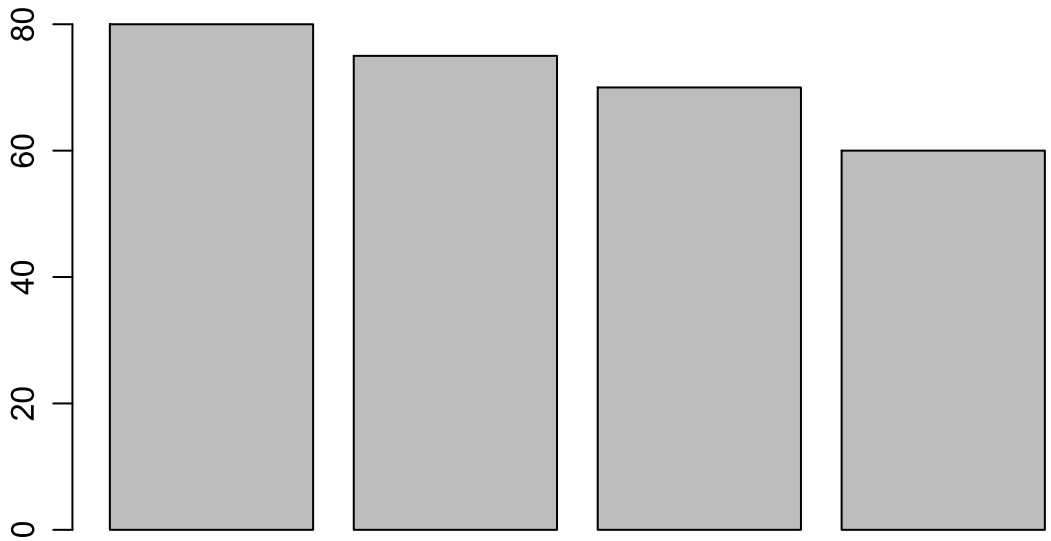
2nd 75

3rd 70

4th 60

a. Plot the data using a bar graph. Write the codes and copy the result.

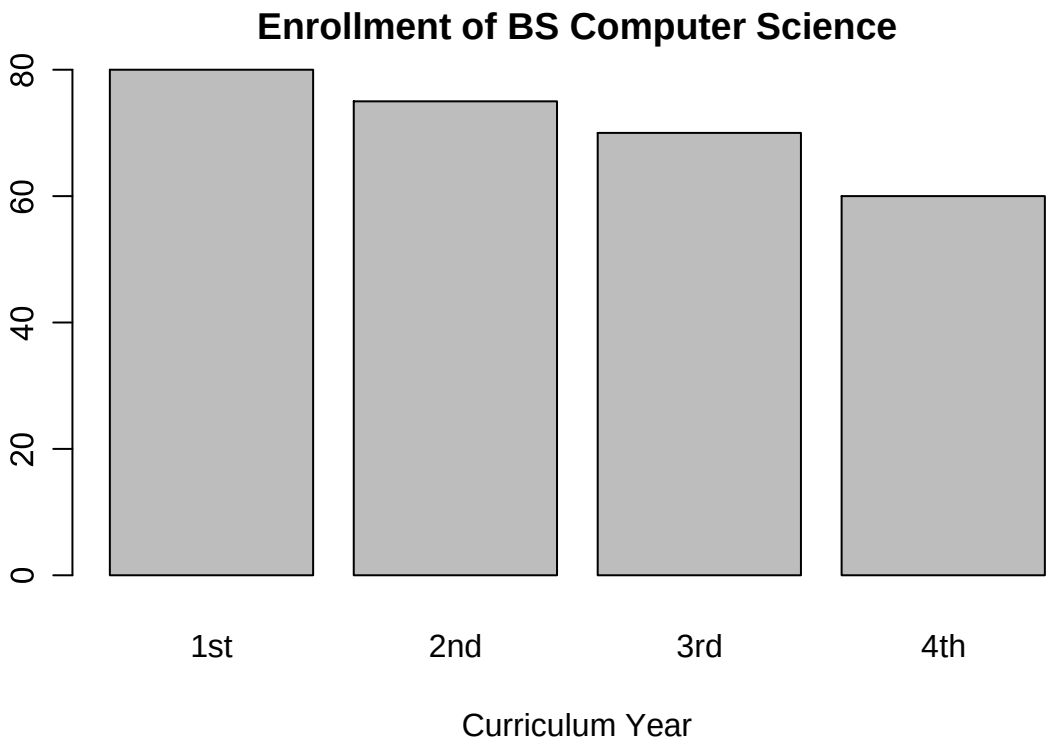
```
x2019_2020 <- c(80,75,70,60) numb1a <-
barplot(x2019_2020)
```



b. Using the same table, label the barchart with Title = " Enrollment of BS Computer Sciencehorizontal axis = "Curriculum Year" and vertical axis = "number of students"

```
course <- c("1st","2nd","3rd","4th")

numb_1b <- barplot(date2019_2020, main = "Enrollment of BS Computer Science",
            xlab = "Curriculum Year", names.arg = course)
```

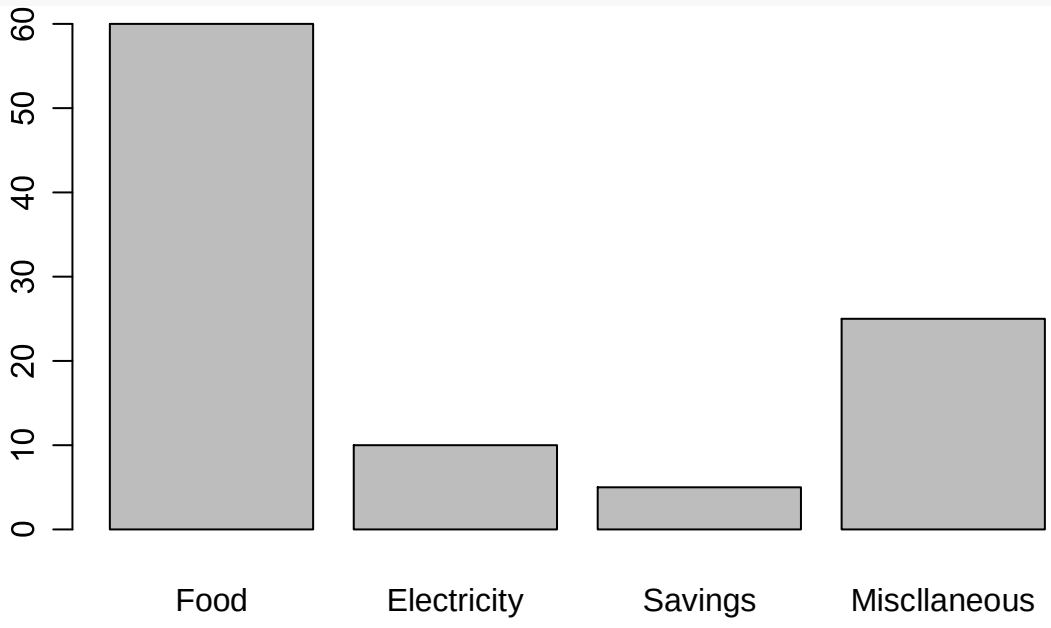


2. The monthly income of De Jesus family was spent on the following: 60% on Food, 10% on electricity, 5% for savings, and 25% for other miscellaneous expenses.

a. Create a table for the above scenario. Write the codes and its result.

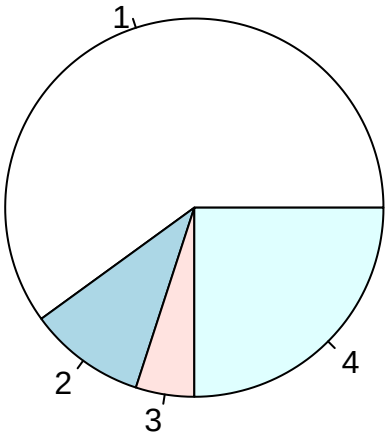
```
expenses <- c(60,10,5,25) barplot(expenses,names.arg = c("Food", "Electricity", "Savings",

"Miscllaneous"))
```

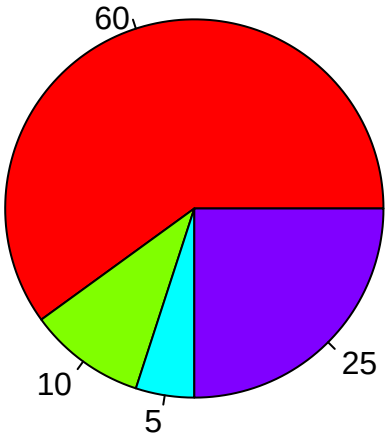


b. Plot the data using a pie chart. Add labels, colors and legend. Write the codes and itsresult.

```
pie(expenses)
```



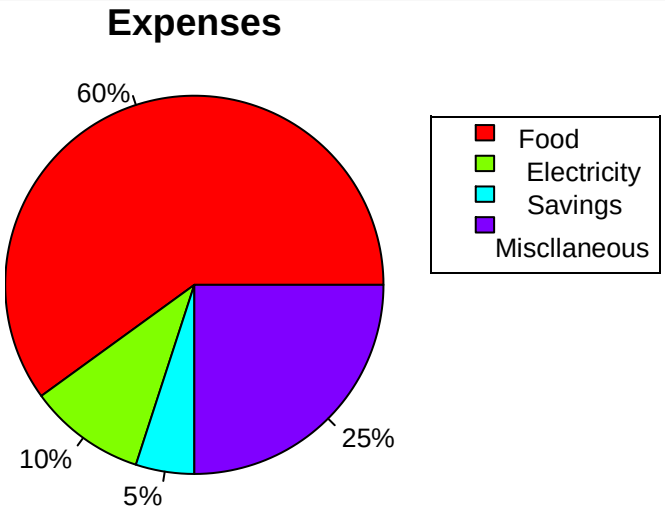

```
numb2b <- pie(expenses, col =
      rainbow(length(expenses)), labels =
      c(60,10,5,25))
```



```
ex_labels <- round(expenses/sum(expenses) * 100, 1)

ex_labels <- paste(ex_labels,"%",sep = "") pie(expenses, main = "Expenses",col=rainbow(length(expenses)),labels =
ex_labels,cex=0.8)

legend(1, c("Food", "Electricity", "Savings", "Miscllaneous"),
                    cex = 0.8,fill = rainbow((length(expenses))))
```

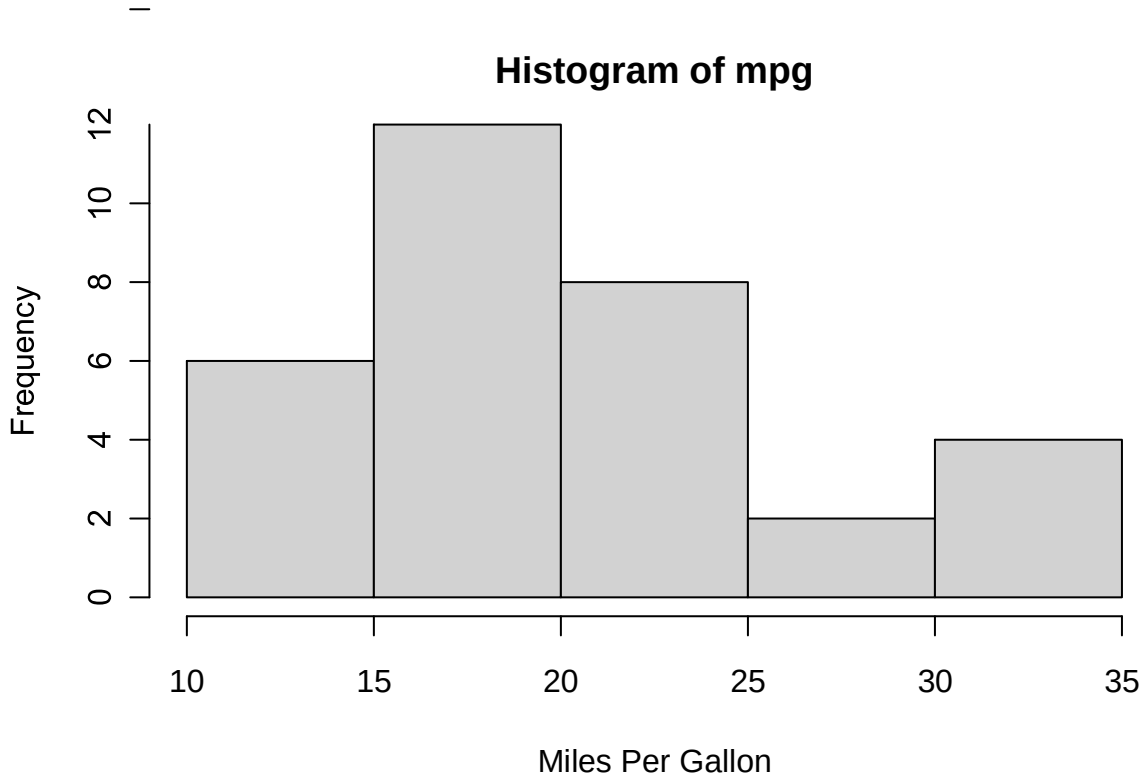


3. Open the mtcars dataset.

```
data("mtcars") numb3
<- mtcars$mpg
```

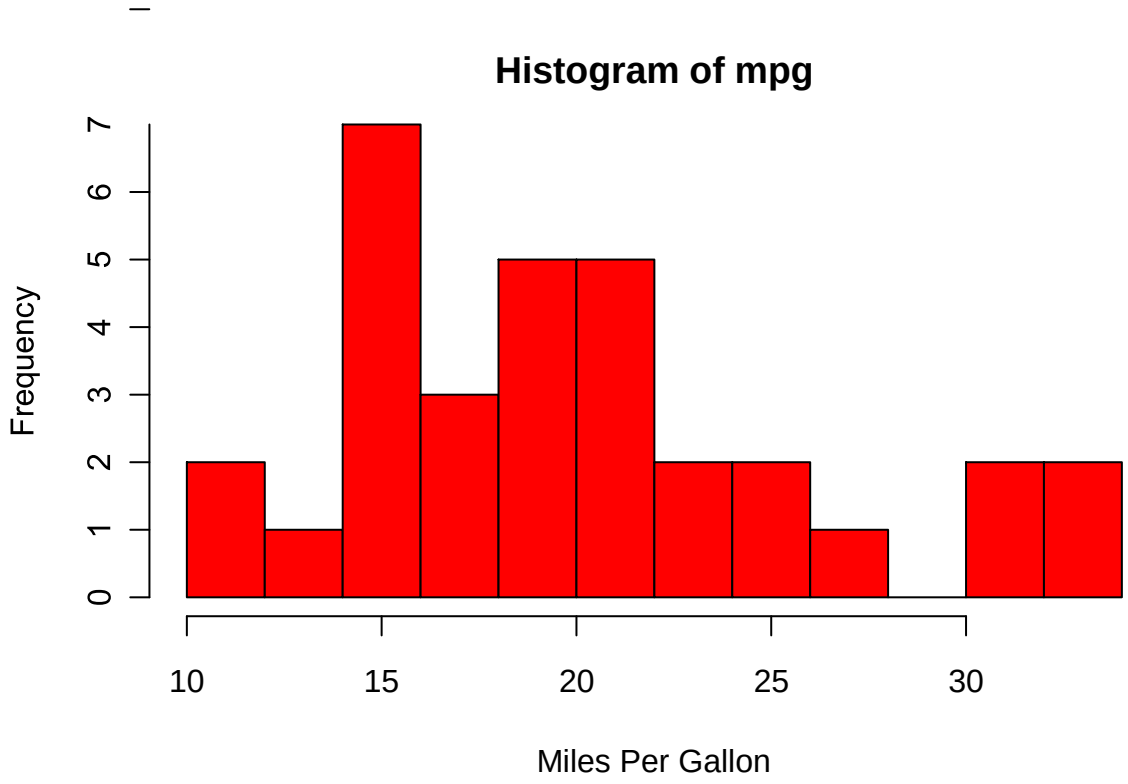
a. Create a simple histogram specifically for mpg (miles per gallon) variable. Use $ to select the mpg only. Write the codes and its result.

```
numb3a <-hist(numb3, xlab="Miles Per Gallon",
main="Histogram of mpg")
```



b. Colored histogram with different number of bins.

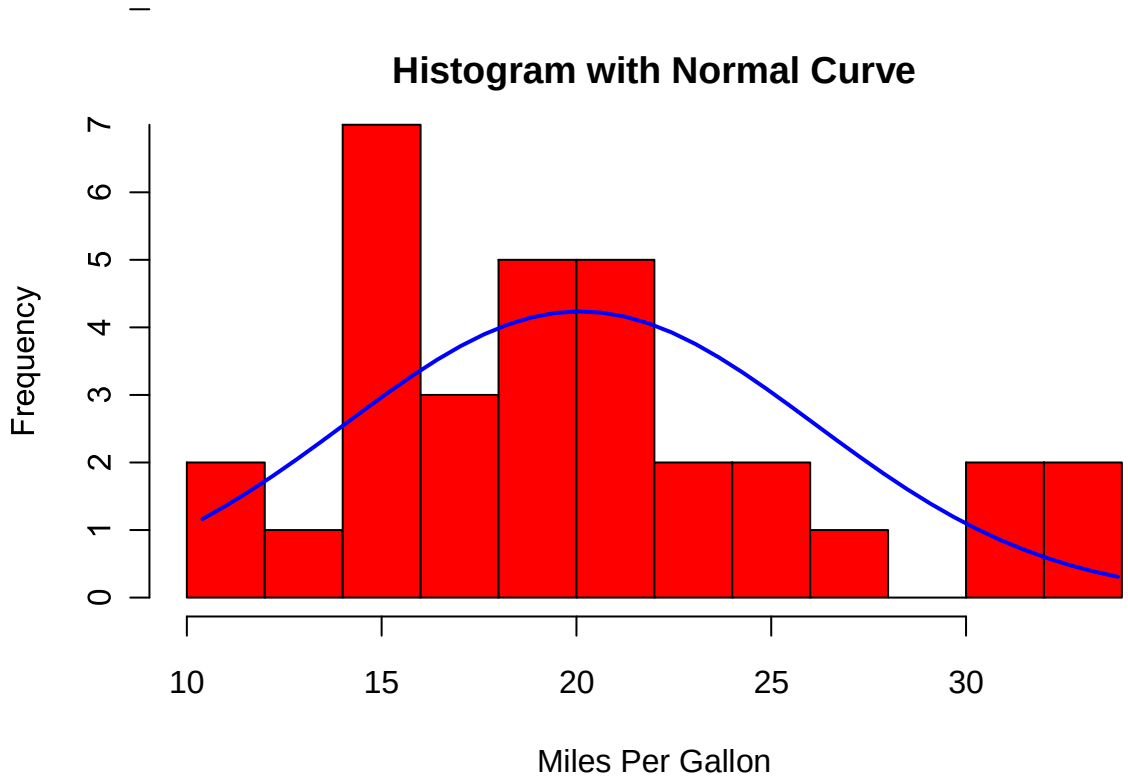
```
numb3b <-hist(numb3, breaks=12, col="red", xlab="Miles Per Gallon",
main="Histogram of mpg")
```



Note: breaks= controls the number of bins

c. Add a Normal Curve

```
numb3c <-hist(numb3, breaks=12, col="red", xlab="Miles Per Gallon", main="Histogram with Normal
            Curve")
xfit<-seq(min(numb3),max(numb3),length=40) yfit<-
dnorm(xfit,mean=mean(numb3),sd=sd(numb3)) yfit <-
yfit*diff(numb3c$mids[1:2])*length(numb3) lines(xfit, yfit,
col="blue", lwd=2)
```



Copy the result.

4. Open the iris dataset. Create a subset for each species.

a. Write the codes and its result.

```
data("iris") set <- subset(iris, Species == "setosa") ver <-
subset(iris, Species == "versicolor") vir <- subset(iris,
Species == "virginica")
```

b. Get the mean for every characteristics of each species using colMeans(). Write the codesand its result.

```
set <- subset(iris, Species == "setosa") setosa <-
colMeans(set[sapply(set,is.numeric)]) setosa
```

```
## Sepal.Length Sepal.Width Petal.Length Petal.Width
##        5.006       3.428        1.462       0.246
```

```
ver <- subset(iris, Species == "versicolor") versicolor <-
colMeans(ver[sapply(ver,is.numeric)]) versicolor
```

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

—

##	5.936	2.770	4.260	1.326

```
vir <- subset(iris, Species == "virginica") virginica <-
colMeans(vir[sapply(vir,is.numeric)]) virginica
```

```
## Sepal.Length Sepal.Width Petal.Length Petal.Width
##        6.588       2.974        5.552       2.026
```

Example: setosa <- colMeans(setosa[sapply(setosaDF,is.numeric)]) ***c. Combine all species by using rbind() The table should be look like this:***

```
trans3 <- rbind(setosa, versicolor, virginica)
trans3
```

```
##                Sepal.Length Sepal.Width Petal.Length Petal.Width
## setosa            5.006       3.428        1.462       0.246
## versicolor        5.936       2.770        4.260       1.326
## virginica         6.588       2.974        5.552       2.026
```

d. From the data in 4-c: Create the barplot(). Write the codes and its result. The barplot should be like this.

```
barplot(trans3, beside = TRUE,
        main = "Iris Mean", xlab =
        "Characteristics", ylab = "Mean
        Scores", col = c("red","green","blue"))
```

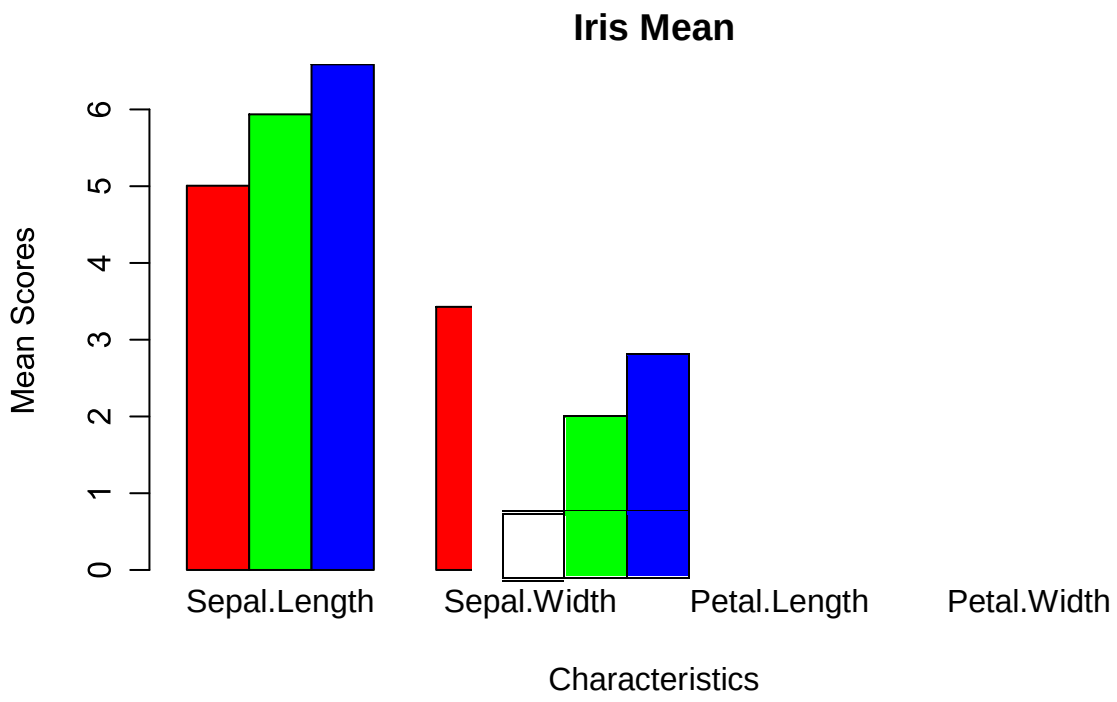


Figure 1: Iris Data using Barplot