

RWorksheet_Camiña#5

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#1.
#1.a
yr2019_2020 <- c(80, 75, 70, 60)
year0 <- barplot(yr2019_2020)

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

year0 <- barplot(yr2019_2020, main = "Enrollment of BS Computer Science",
                 xlab = "Curriculum Year", names.arg = course)

#2.
#2.a
expense <- c(60, 10, 5, 25)

barplot(expense, names.arg = c("Food", "Electricity", "Savings", "Miscellaneous"))

#2.b
pie(expense)

year1 <- pie(expense, col = rainbow(length(expense)), labels = c(60, 10, 5, 25))

pie(expense, main = "Expenses", col = rainbow(length(expense)), labels = year1, cex = 1)

legend(1, c("Food", "Electricity", "Savings", "Miscellaneous"),
      cex = 1, fill = rainbow((length(expense))))

#3.
data("mtcars")
num1 <- mtcars$mpg
num1

#3.a
num2 <- hist(num1, xlab = "Miles per Gallon", main = "Histogram of MPG")

#3.b
num3 <- hist(num1, breaks = 12, col = "red", xlab = "Miles per Gallon", main = "Histogram of MPG")

#3.c
num4 <- hist(num1, breaks = 12, col = "red", xlab = "Miles per Gallon",
             main = "Histogram with a Curve")

xfit <- seq(min(num1), max(num1), length = 40)
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yfit <- dnorm(xfit, mean = mean(num1), sd = sd(num1))
yfit <- yfit*diff(num4$mids[1:2])*length(num1)
lines(xfit, yfit, col = "blue", lwd = 2)

#4.
#4.a
data("iris")
set <- subset(iris, Species == "setosa")
set <- subset(iris, Species == "versicolor")
set <- subset(iris, Species == "virginica")

#4.b
set <- subset(iris, Species == "setosa")
setosa <- colMeans(set[apply(set,is.numeric)])
setosa

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

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

#4.c
bind <- rbind(setosa, versicolor, virginica)
bind

#4.d
barplot(bind, beside = TRUE,
        main = "Iris Data",
        xlab = "Characteristics",
        ylab = "Mean Scores",
        col = c("red", "green", "blue"))

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