R Homework 10

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Statistics 5193

Question 1

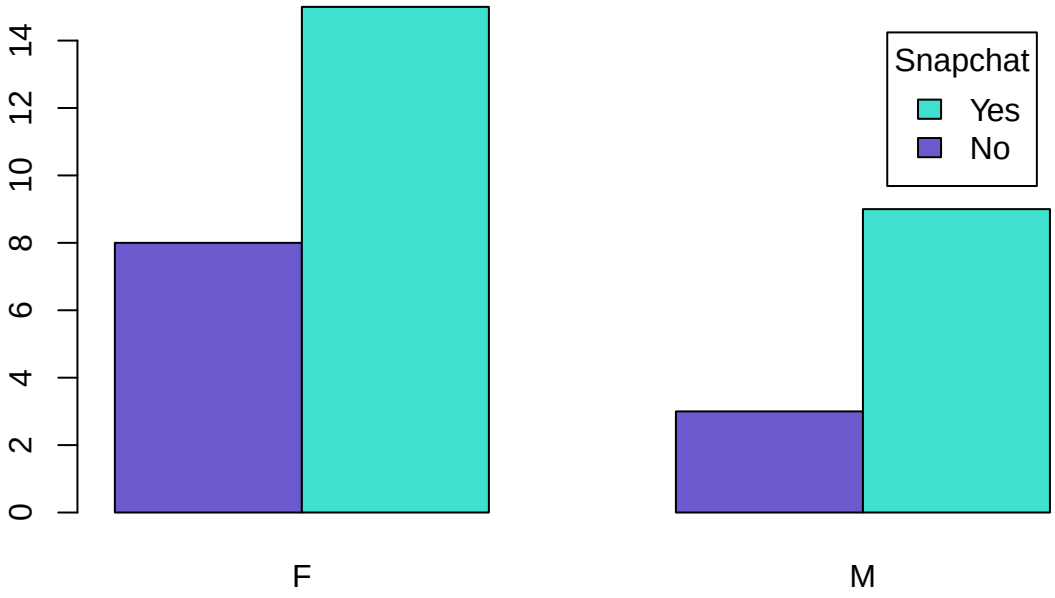
For the class data, construct a vertical bar chart of snapchat vs. gender counts. The bars should be side by side (not stacked), with gender on the x axis and snapchat indicated in the legend. The bars should be different colors and the legend should have a title.

```
library(readxl)
StudentData <- read_excel("~/Documents/data_science/r_stat_5193/data/StudentData.xlsx")

gender_snap <- table(StudentData$Snapchat, StudentData$Gender)

barplot(gender_snap, beside = T, col = c("slateblue", "turquoise"))

legend("topright",
       inset = 0.05,
       title = 'Snapchat',
       c("Yes","No"),
       fill=c("turquoise", "slateblue"))
```

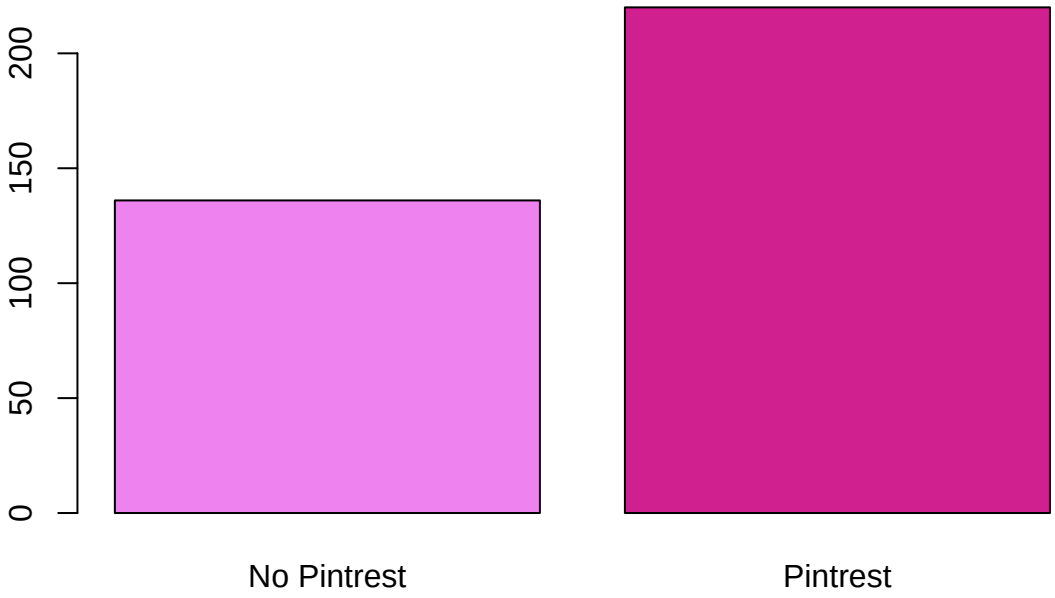


Question 2

Construct a vertical barchart with median HSClass on the y axis and Pinterest on the X axis. The bars should be different colors, and the bars labeled "No Pinterest" and "Pinterest".

```
median_pin <-aggregate(StudentData$HSClass~StudentData$Pinterest, FUN = median)

barplot(median_pin$`StudentData$HSClass`,
        col = c("violet", "violetred"),
        names.arg=c("No Pintrest", "Pintrest"))
```



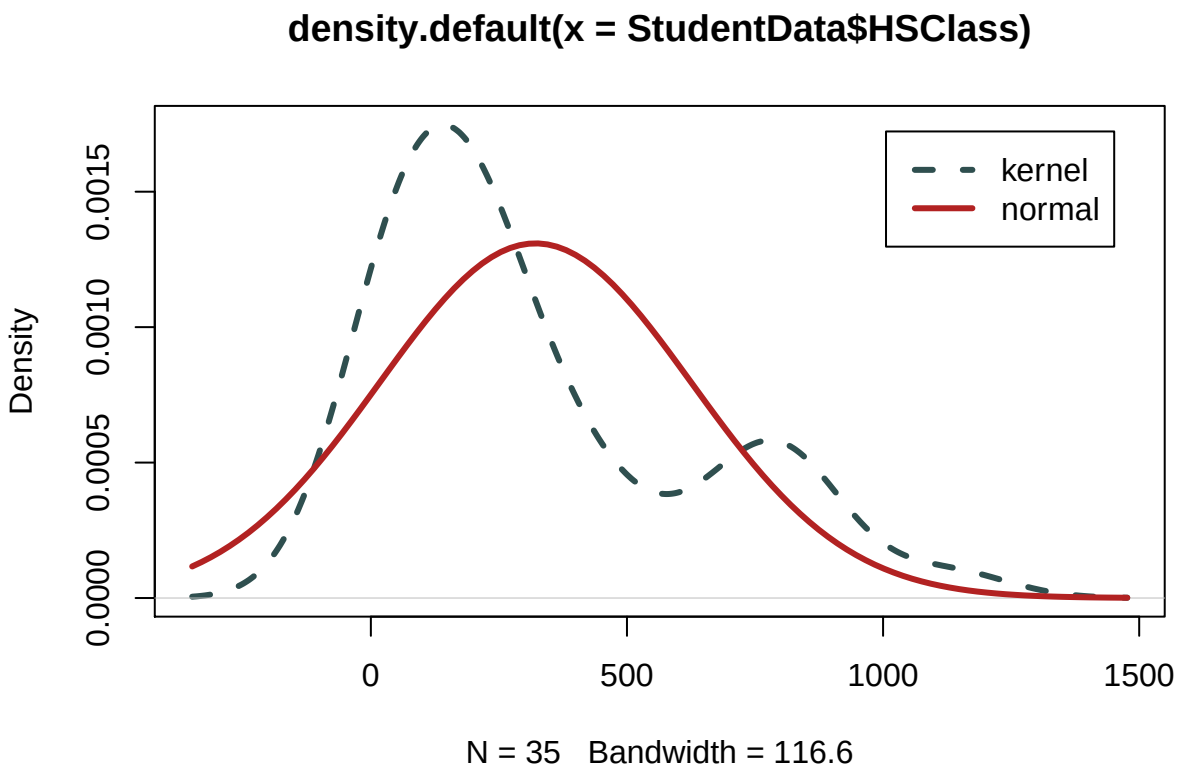
Question 3

Construct a histogram of HSClass with the estimated density using the density function and the estimated normal density superimposed. The curves should be thick, different colors, and different line types. Add a legend that reads "kernel" and "normal" to indicate which curve is which with the correct line types and colors.

```
plot(density(StudentData$HSClass),
     lty = 2,
     lwd = 3,
     col = "darkslategray")

curve(dnorm(x,
            mean(StudentData$HSClass),
            sd(StudentData$HSClass)),
      add = T,
      lwd = 3,
      col='firebrick')

legend('topright',
       inset = 0.05,
       legend = c('kernel', 'normal'),
       lty = c(2,1),
       lwd = c(3,3),
       col = c('darkslategray', 'firebrick'))
```



Question 4

Construct a pie chart of the USPersonalExpenditure data set for expenditures in 1960. The pie chart should have labels for each category with percentages.

```
us_dataframe <- as.data.frame(USPersonalExpenditure)
percents <- us_dataframe[,5]/sum(us_dataframe[,5])*100
pie_labels <- paste(row.names(USPersonalExpenditure), " ", percents, "%", sep="")

pie(USPersonalExpenditure[,5], labels = pie_labels)
```