#1. Write a program to create barplots for all the categorical columns in mtcars.

mtcars

str(mtcars)

library(dplyr)

#change of categorial variables to factor

mtcars1 <- mutate(mtcars, cyl = as.factor(cyl),

disp = as.factor(disp),

vs = as.factor(vs),

gear = as.factor(gear),

am = as.factor(am),

carb = as.factor(carb))

str(mtcars1)

is.fact <- sapply(mtcars1, is.factor)

#checking the categorial variables

mtcars2 <- mtcars1[,is.fact]

# Creating dataframe of only factor class of variables

str(mtcars2)

par(mfrow =c(2,3))

lapply(lapply(mtcars2[, 1:5], table), barplot)

#2. Create a scatterplot matrix by gear types in mtcars dataset.

str(mtcars)

library(car)

scatterplotMatrix(~mpg+drat+wt+qsec|gear,data = mtcars

#3. Write a program to create a plot density by class variable.

par(mfrow = c(1,1))

x <- mtcars$mpg

# assign mpg to an object

h <- hist(x, breaks = 10, col = "blue", xlab ="MPG", main = "Density plot of mpg")

#plot histogram of the object

xfit <- seq(min(x), max(x), length= 40

#create 40 points on x-axis

yfit <- yfit\*diff(h$mids[1:2]\*length(x))

#mids of the histogram with changing x

lines(xfit, yfit, col = "blue", lwd = 3)

#line plot for xfit and yfit