**Assignment 7.3**

**Question No.1 :**

Create a Box and Whisker plot by class using mtcars dataset

> require(reshape2) # to manipulate the dataframe to a required format

> require(ggplot2)

> boxcars <- melt(mtcars, id.var = "gear")

# to create a new data.frame in a vertical format where the data can be grouped based on number of gears (which I assumed to be a good variable to slot the car in a “CLASS”) and all the various variables will be the second column and their respective values will be the third column.

> head(boxcars)

gear variable value

1 4 mpg 21.0

2 4 mpg 21.0

3 4 mpg 22.8

4 3 mpg 21.4

5 3 mpg 18.7

6 3 mpg 18.1

> ggplot(boxcars,aes(x=variable, y = value)) # using the variable for a box plot based their values

+geom\_boxplot(aes(fill = factor(gear))) # factor (gear) used since gear is numeric variable

+facet\_wrap(~variable, scales = "free")

# to plot all the box plots in one graph frame with freedom to scale the axis

+xlab("x-axis")

+ylab("y-axis")

+ggtitle("No. of Gear Wise mtcars data")

+guides(fill = guide\_legend(title = "No. of Gears"))

# to provide the colour code for the legends based on the number of gears.

