Stat 123 Homework 1

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```
setwd("C:\\Users\\jon\\Documents\\School\\R\\HW\\HW1")
```

Load the mtcars dataset that comes preinstalled in R using the data() function.

```
data(mtcars)#Load data from mtcars
```

Find the mean of the miles per gallon variable.

```
mpg <- mtcars$mpg
mean(mpg)

## [1] 20.09062
```

Compute the linear correlation between the "mpg" and "cyl" variables. Hint: if you don't know which function to use, try typing "correlation" in the search bar of the help tab in RStudio.

```
cyl <- mtcars$cyl
cor(mpg, cyl)#cor.test gives more info cor() gives just the cor.

## [1] -0.852162
```

Compute the linear correlation between the "mpg" and "gear" variables.

```
gears <- mtcars$gear
cor(mpg, gears)

## [1] 0.4802848
```

Find the mean of the "mpg" variable for each value of the "gear" variable.

```
#Gear 3
gear3.table <- mtcars[mtcars$gear==3,]
mean(gear3.table$mpg)

## [1] 16.10667

#Gear 4
gear4.table <- mtcars[mtcars$gear==4,]
mean(gear4.table$mpg)

## [1] 24.53333
```

```r
#Gear 5
gear5.table <- mtcars[mtcars$gear==5,]
mean(gear5.table$mpg)
```

```
## [1] 21.38
```

Find the median of the “mpg” variable for each value of the “gear” variable.

```r
median(gear3.table$mpg)
```

```
## [1] 15.5
```

```r
median(gear4.table$mpg)
```

```
## [1] 22.8
```

```r
median(gear5.table$mpg)
```

```
## [1] 19.7
```

Find the make and model of the car with the highest miles per gallon. What are its “cyl” and “gear” values?

```r
max.mpg <- max(mtcars$mpg)
car <- mtcars[mtcars$mpg==max.mpg,]
car.type <- row.names(car)#Extracts the row name
car.type
```

```
## [1] "Toyota Corolla"
```