Assignment3.4

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```r
#Assignment 3.4
#3. Implement user defined functions, within apply function using the mtcars
data set
# and produce  column wise summary statistics using apply function
#get mean of all variables
apply(mtcars, 2, mean)

##        mpg        cyl       disp         hp       drat         wt
##  20.090625   6.187500 230.721875 146.687500   3.596563   3.217250
##       qsec         vs         am       gear       carb
##  17.848750   0.437500   0.406250   3.687500   2.812500

# get the mean of the mpg column grouped by cylinders
tapply(mtcars$mpg, mtcars$cyl, mean)

##        4        6        8
## 26.66364 19.74286 15.10000

tmp <- do.call(data.frame,
             list(mean = apply(mtcars, 2, mean),
                  sd = apply(mtcars, 2, sd),
                  median = apply(mtcars, 2, median),
                  min = apply(mtcars, 2, min),
                  max = apply(mtcars, 2, max),
                  n = apply(mtcars, 2, length)))
tmp

##              mean          sd median    min     max  n
## mpg     20.090625   6.0269481 19.200 10.400  33.900 32
## cyl      6.187500   1.7859216  6.000  4.000   8.000 32
## disp   230.721875 123.9386938 196.300 71.100 472.000 32
## hp     146.687500  68.5628685 123.000 52.000 335.000 32
## drat     3.596563   0.5346787  3.695  2.760   4.930 32
## wt       3.217250   0.9784574  3.325  1.513   5.424 32
## qsec    17.848750   1.7869432 17.710 14.500  22.900 32
## vs       0.437500   0.5040161  0.000  0.000   1.000 32
## am       0.406250   0.4989909  0.000  0.000   1.000 32
## gear     3.687500   0.7378041  4.000  3.000   5.000 32
## carb     2.812500   1.6152000  2.000  1.000   8.000 32

#B. Write a program to extract the names of the list

  for (colcount in 1:ncol(mtcars))
```

```
  {
    print(names(mtcars[colcount]))
  }

## [1] "mpg"
## [1] "cyl"
## [1] "disp"
## [1] "hp"
## [1] "drat"
## [1] "wt"
## [1] "qsec"
## [1] "vs"
## [1] "am"
## [1] "gear"
## [1] "carb"
```

R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)

##      speed           dist
##  Min.   : 4.0   Min.   :  2.00
##  1st Qu.:12.0   1st Qu.: 26.00
##  Median :15.0   Median : 36.00
##  Mean   :15.4   Mean   : 42.98
##  3rd Qu.:19.0   3rd Qu.: 56.00
##  Max.   :25.0   Max.   :120.00
```

Including Plots

You can also embed plots, for example:
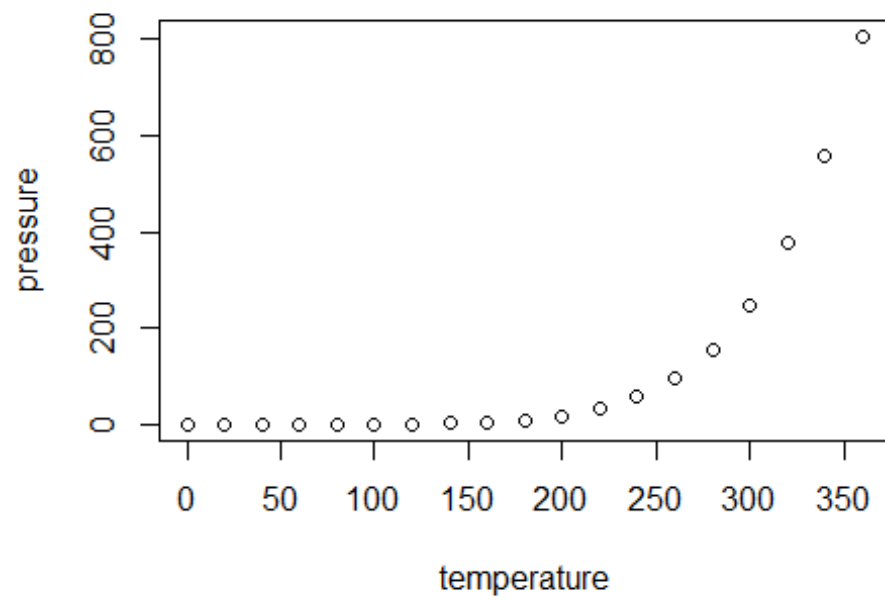
Note that the echo = FALSE parameter was added to the code chunk to prevent printing of the R code that generated the plot.