

SESSION 3: FOUNDATIONAL R PROGRAMMING

Assignment 4

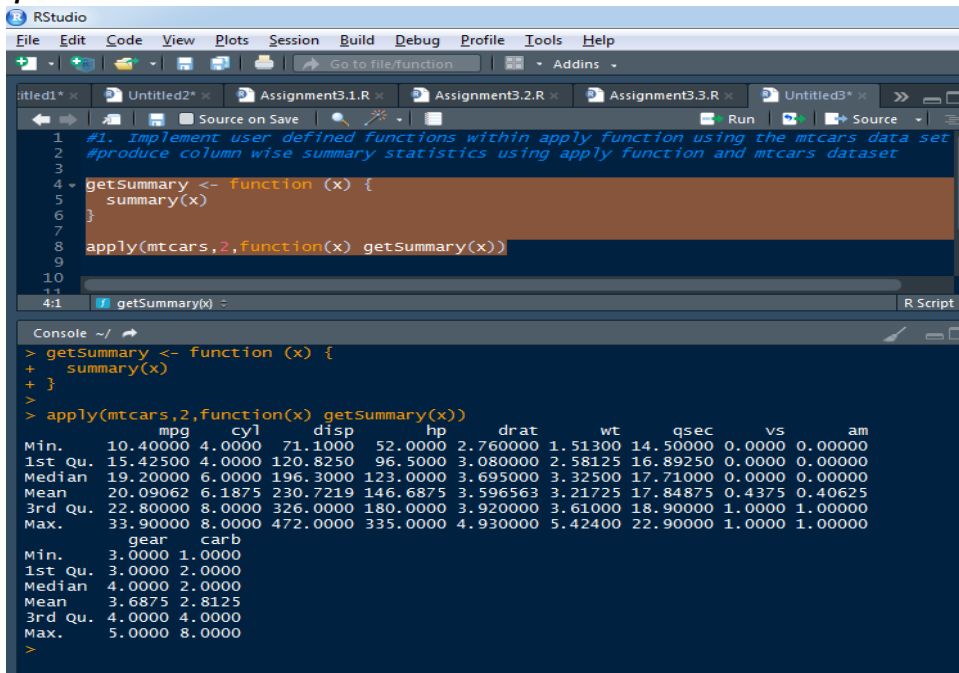
1. Implement user defined functions within apply function using the mtcars data set and produce column wise summary statistics using apply function and mtcars dataset.

Answer:

```
getSummary <- function(x) { #user defined function
  summary(x)
}
```

```
apply(mtcars,2,function(x) getSummary(x))
```

Output:



The screenshot shows the RStudio interface. The source editor contains the following code:

```
1 #1. Implement user defined functions within apply function using the mtcars data set
2 #produce column wise summary statistics using apply function and mtcars dataset
3
4 getSummary <- function(x) {
5   summary(x)
6 }
7
8 apply(mtcars,2,function(x) getSummary(x))
```

The console shows the output of the function:

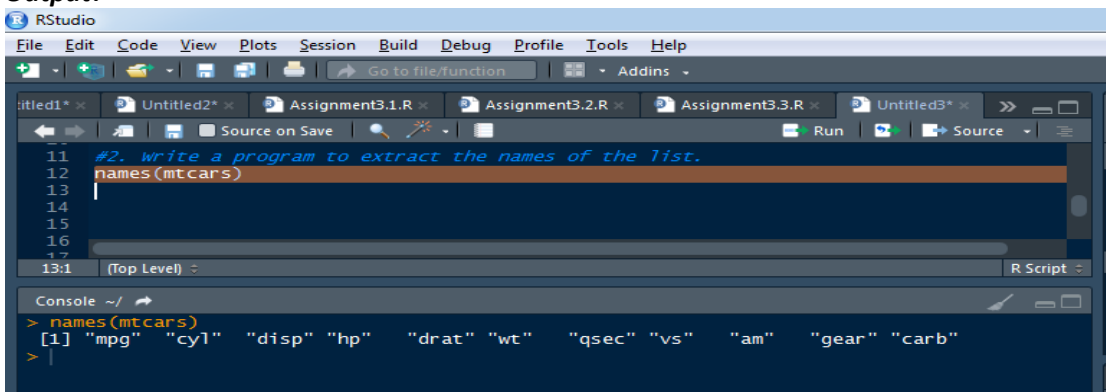
```
> getSummary <- function(x) {
+   summary(x)
+ }
> apply(mtcars,2,function(x) getSummary(x))
      mpg      cyl      disp      hp      drat      wt      qsec      vs      am
Min.  10.40000  4.0000  71.1000  52.0000  2.760000  1.51300  14.50000  0.0000  0.00000
1st Qu. 15.42500  4.0000  120.8250  96.5000  3.080000  2.58125  16.89250  0.0000  0.00000
Median 19.20000  6.0000  196.3000  123.0000  3.695000  3.32500  17.71000  0.0000  0.00000
Mean   20.09062  6.1875  230.7219  146.6875  3.596563  3.21725  17.84875  0.4375  0.40625
3rd Qu. 22.80000  8.0000  326.0000  180.0000  3.920000  3.61000  18.90000  1.0000  1.00000
Max.   33.90000  8.0000  472.0000  335.0000  4.930000  5.42400  22.90000  1.0000  1.00000
      gear      carb
Min.   3.0000  1.0000
1st Qu. 4.0000  2.0000
Median 4.0000  2.0000
Mean   3.6875  2.8125
3rd Qu. 4.0000  4.0000
Max.   5.0000  8.0000
```

2. Write a program to extract the names of the list.

Answer:

```
names(mtcars)
```

Output:



The screenshot shows the RStudio interface. The source editor contains the following code:

```
11 #2. Write a program to extract the names of the list.
12 names(mtcars)
13
14
15
16
17
```

The console shows the output of the function:

```
> names(mtcars)
[1] "mpg" "cyl" "disp" "hp" "drat" "wt" "qsec" "vs" "am" "gear" "carb"
```