ACADGILD

SESSION 3: FOUNDATIONAL R PROGRAMMING

Assignment 4

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1. Introduction

This assignment will help you understand the concepts learnt in the session.

2. Objective

This assignment will test your skills on Operations on Data Structures in R.

3. Prerequisites

Not applicable.

4. Associated Data Files

Not applicable.

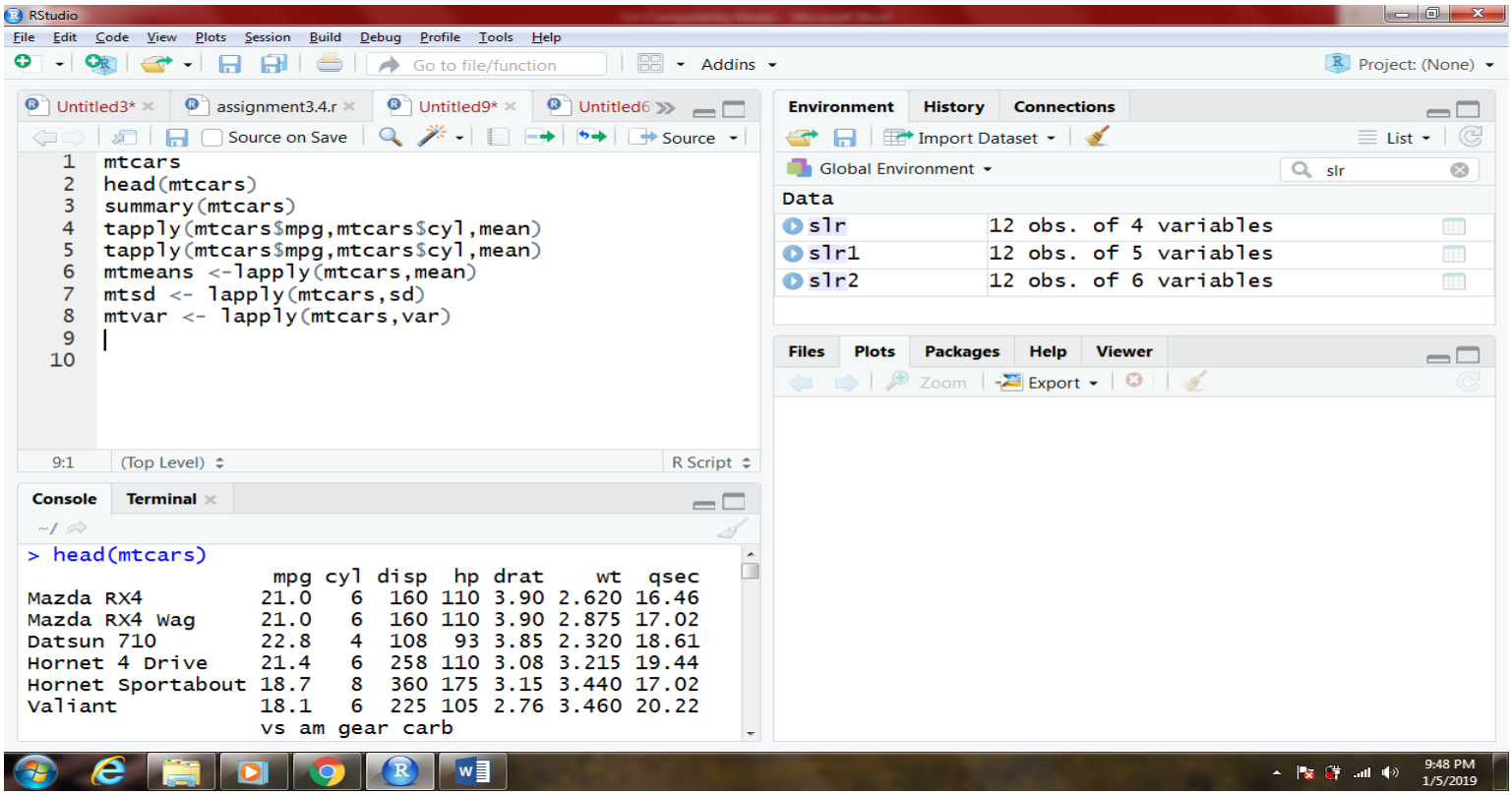
5. Problem Statement

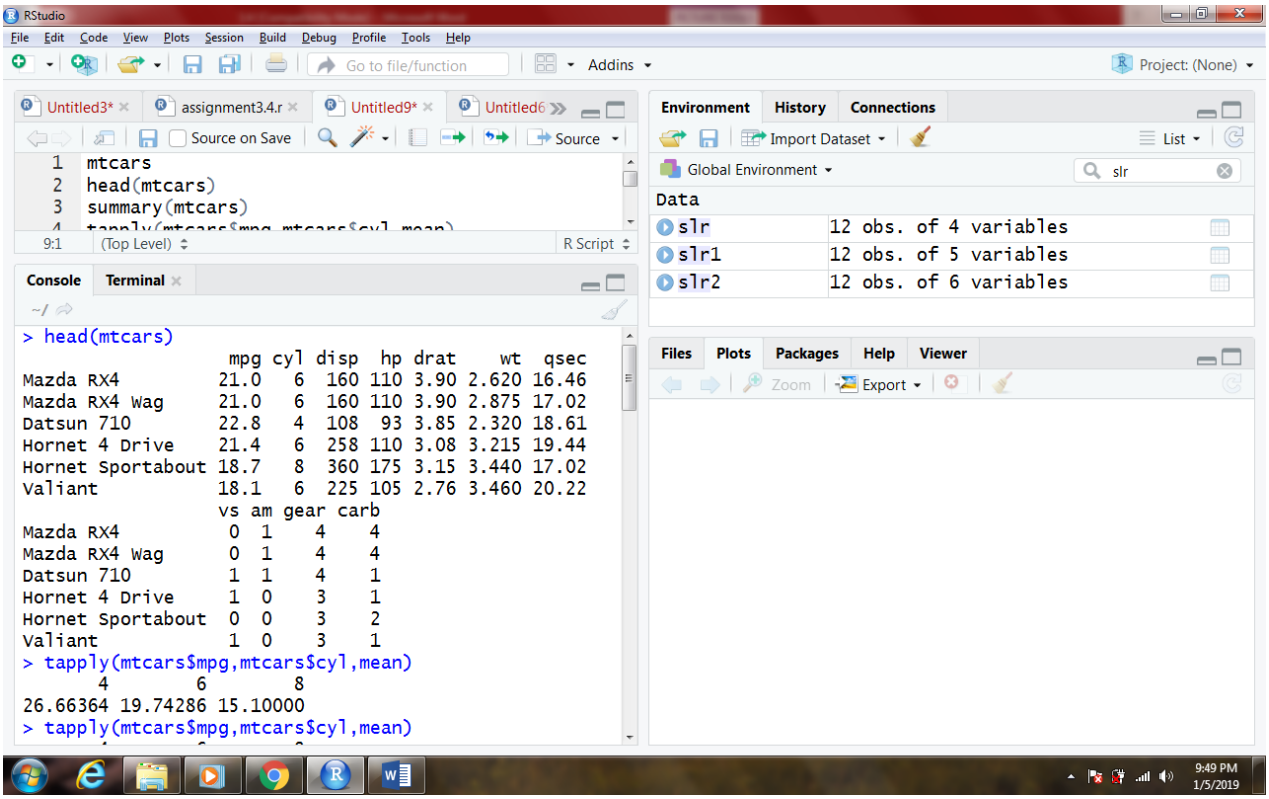
A. Implement user defined functions within apply function using the mtcars data set and produce column wise summary statistics using apply function and mtcars dataset.

B. write a program to extract the names of the list.

A-

```
mtcars
head(mtcars)
summary(mtcars)

tapply(mtcars$mpg,mtcars$cyl,mean)

tapply(mtcars$mpg,mtcars$cyl,mean)
mtmeans <-lapply(mtcars,mean)

mtsd <- lapply(mtcars,sd)

mtvar <- lapply(mtcars,var)
```


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
Project: (None)
Untitled3*
assignment3.4.r
Untitled9*
Untitled6
Source on Save
Source
1 mtcars
2 head(mtcars)
3 summary(mtcars)
4 tapply(mtcars$mpg,mtcars$cyl,mean)
5 tapply(mtcars$mpg,mtcars$cyl,mean)
6 mtmeans <-lapply(mtcars,mean)
7 mtsd <- lapply(mtcars,sd)
8 mtvar <- lapply(mtcars,var)
9
10
9:1
(Top Level)
R Script
Console
Terminal
~/
> head(mtcars)
mpg cyl disp hp drat wt qsec
Mazda RX4 21.0 6 160 110 3.90 2.620 16.46
Mazda RX4 Wag 21.0 6 160 110 3.90 2.875 17.02
Datsun 710 22.8 4 108 93 3.85 2.320 18.61
Hornet 4 Drive 21.4 6 258 110 3.08 3.215 19.44
Hornet Sportabout 18.7 8 360 175 3.15 3.440 17.02
Valiant 18.1 6 225 105 2.76 3.460 20.22
vs am gear carb
Environment
History
Connections
Import Dataset
List
Global Environment
slr
Data
slr 12 obs. of 4 variables
slr1 12 obs. of 5 variables
slr2 12 obs. of 6 variables
Files
Plots
Packages
Help
Viewer
Zoom
Export
9:48 PM
1/5/2019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Hornet Sportabout 18.7 8 360 175 3.15 3.440 17.02
Valiant 18.1 6 225 105 2.76 3.460 20.22
vs am gear carb
Mazda RX4 0 1 4 4
Mazda RX4 Wag 0 1 4 4
Datsun 710 1 1 4 1
Hornet 4 Drive 1 0 3 1
Hornet Sportabout 0 0 3 2
Valiant 1 0 3 1
> tapply(mtcars$mpg,mtcars$cyl,mean)
4 6 8
26.66364 19.74286 15.10000
> tapply(mtcars$mpg,mtcars$cyl,mean)
Environment
History
Connections
Import Dataset
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slr
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slr 12 obs. of 4 variables
slr1 12 obs. of 5 variables
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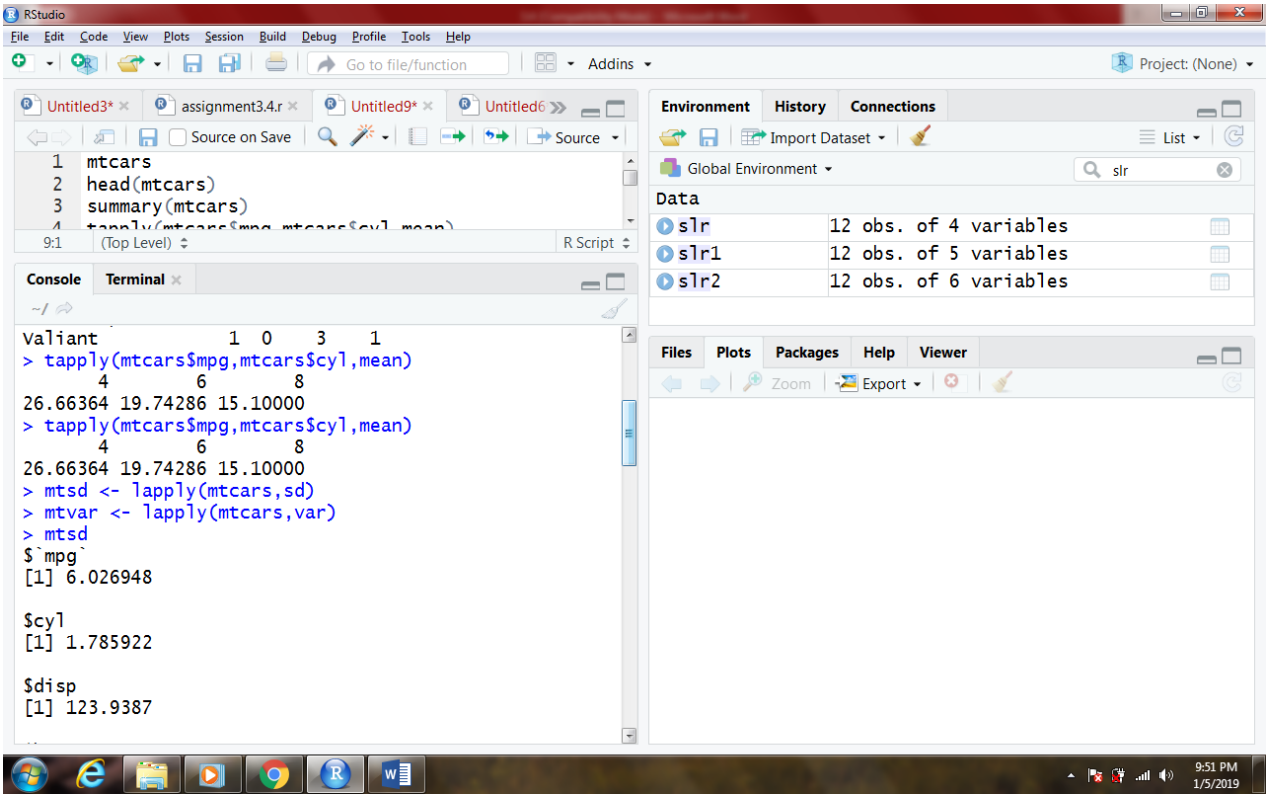
1/5/2019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9:1
(Top Level)
R Script
Console
Terminal
~/
Valiant 1 0 3 1
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4 6 8
26.66364 19.74286 15.10000
> tapply(mtcars$mpg,mtcars$cyl,mean)
4 6 8
26.66364 19.74286 15.10000
> mtsd <- lapply(mtcars,sd)
> mtvar <- lapply(mtcars,var)
> mtsd
$`mpg`
[1] 6.026948
$cyl
[1] 1.785922
$disp
[1] 123.9387
Environment
History
Connections
Import Dataset
List
Global Environment
slr
Data
slr 12 obs. of 4 variables
slr1 12 obs. of 5 variables
slr2 12 obs. of 6 variables
Files
Plots
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Help
Viewer
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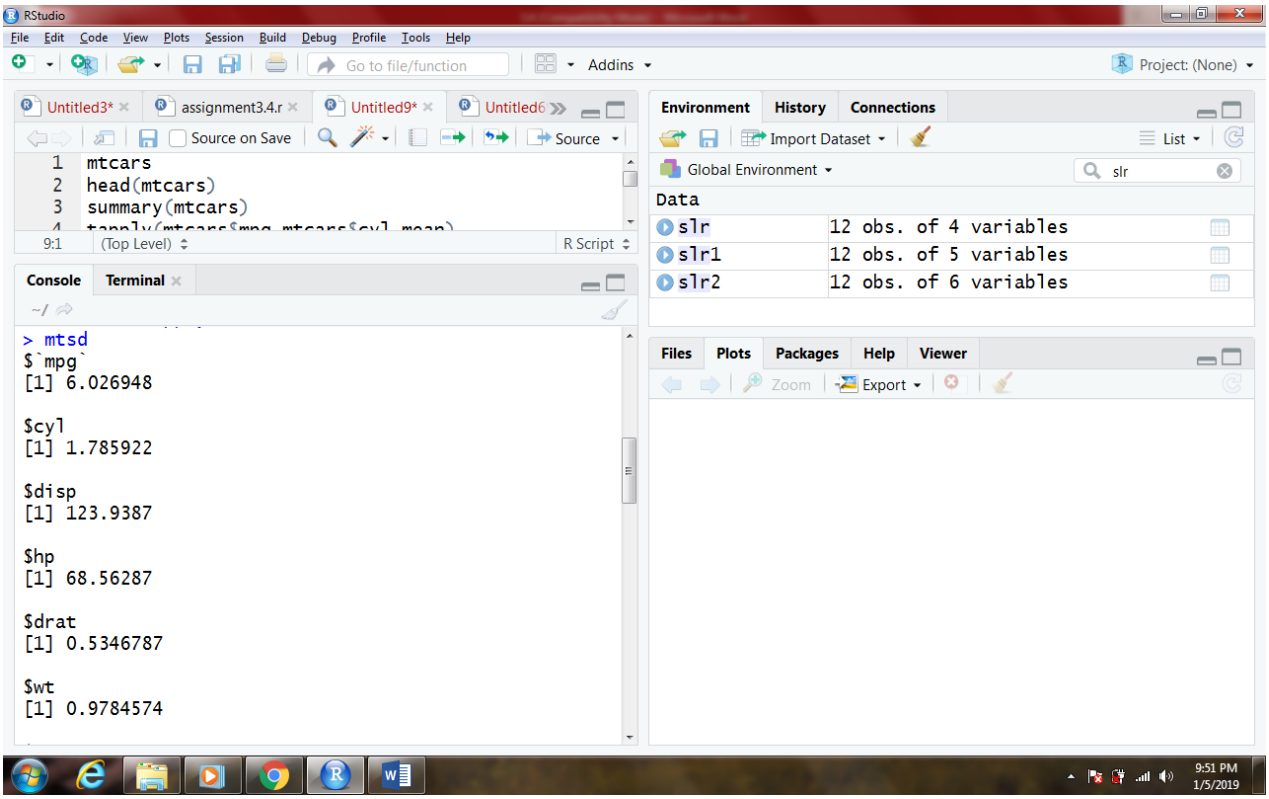
Export
9:51 PM
1/5/2019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Source
1 mtcars
2 head(mtcars)
3 summary(mtcars)
9:1
(Top Level)
R Script
Console
Terminal
~/
> mtsd
$`mpg`
[1] 6.026948
$cyl
[1] 1.785922
$disp
[1] 123.9387
$hp
[1] 68.56287
$drat
[1] 0.5346787
$wt
[1] 0.9784574
Environment
History
Connections
Import Dataset
List
Global Environment
slr
Data
slr 12 obs. of 4 variables
slr1 12 obs. of 5 variables
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6. Expected Format

1. R file should be submitted where applicable.
2. R file should be in PDF or in .r format
3. Proper screenshots of the outputs should be submitted as well
4. The r codes, if submitted in any other format, will be subjected to deduction in marks

Note: Your solution will not be entertained if it is any other format, e.g., .zip, .doc, .rtf etc.

7. Approximate Time to Complete Task

30 mins.