MM 217: Tutorial on getting started with R

Type the following commands in the R command line. The description of the output is given below the command line itself.

(1)

```
print ("Hello World")
```

This will print the Hello world to the screen.

(2)

```
1+2+3+4+5
```

This will give the addition of these numbers (Answer: 15)

(3)

```
x <- 1:5
sum(x)
```

Creates a vector x whose components are 1, 2, 3, 4 and 5. The second line gives the addition of all the components.

(4)

```
y<-6:10
x+y
```

This creates another vector y with components 6, 7, 8, 9, and 10. The second command does the vector addition of the two vectors (component-wise addition).

(5)

```
h<- "Hello"
w<- "World!"
h+w
c(h,w)
```

Try and understand what happens in this case.

(6)

```
c(x,y)
```

What does this command do? How does this differ from x+y?

(7)

```
yourname <- readline("What is your name?")
paste(h,yourname)
```

(8)

```
print(digits=8, x=11/7)
```

(9)

```
savehistory(file="GurusTrials");
```

The above exercises are for interactive mode of operation. It is also possible to write scripts and source them.

(1) Let us write a script called **test.r**

```
h<- "Hello"
yourname <- readline("What is your name?")
print(paste(h,yourname))
```

Now, from R command line, by typing

```
source("test.r")
```

you can run this code.

(2) Let us try the next script for combining two vectors:

```
lastnames <- c("Gururajan", "Gokhale", "Kamalakshi", "Kumar", "Abhijeet")
initials <- c("M P", "H", "G", "S", "A")
print(paste(initials,lastnames))
```

(3) Consider the following script and compare it with the previous one. What do you see?

```
firstnames <- c("Mohandas K", "Kasturba", "Devdas")
lastname <- "Gandhi"
print(paste(firstnames,lastname))
```

Let us now spend some time working with the graphics aspects of R. To do so, we will use the built-in data sets islands (surface area of continents and some large islands on earth) and faithful (observations on the Old Faithful Geyser in Yellostone National Park of USA).

(1) Try this!

```
large.islands<-head(sort(islands,decreasing=TRUE),12)
plot(large.islands, main = "Land area of continents and islands", ylab = "Land area in square miles")
text(large.islands, labels=names(large.islands),adj=c(0.5,1))
```

(2) Try this!

```
plot(faithful)
```