DATA ANALYSIS USING R

R is a statistical computing environment.
  -- It is a programming language.
  -- Contains a lot of statistical functions.
  -- Produces high-quality graphics.

Download R from the following website:

  cran.r-project.org

Select "Download R for Windows", then select "base", then "Download R 4.1.2 for Windows"

When you are installing R, you can select "Create a desktop shortcut" if you want a desktop icon.

Starting R: Try following code, then 'enter'

2 + 2

This is an expression

a = 2

It's an assignment. 'a' is assigned the value 2.

a

Value of 'a' is displayed.

b = 4

b

R is case-sensitive. Please be careful about capital letters/small letters.

a * b

a*b is displayed, not stored.

Use up- or down-arrow key to get previous commands. Use left- or right-arrow key to edit.

a / b

a ^ b

log(a)

'log' is a function. Most of the commands we use in R are functions.

A function has the following syntax:

    function.name(arguments, options)

log(a, base = 7)

help(log) # Or, **?log**

The "default" base is exp(1) or e.
If you use default, no need to mention it.

log(a)

You can use arguments and options in any
order:

log(base = 7, x = a)

Maintain order to save lot of typing:

log(a, 7)

Take help for any function or operator.
Getting help for operators:

help('*') # Or, **?'*'**

Simple arithmetic

```
exp(2.3)

2.7^2

sqrt(88)

factorial(8)

choose(12,8)  # Combination
```

Round a number to nearest integer

```
round(2.324)
```

Round a number to one place of decimal

```
round(2.324, 1)

2*pi

abs(18 / -12)
```

R is object-oriented programming language. Output of a function is an object. It can be used as input of another function.

How to see what type of object an output is?

b = 5^2

class(b)

class(5^2)

class(log)

Use output of one function as input of another:

sqrt(factorial(8))

round(sqrt(factorial(8)), 2)

Error messages from common mistakes

u

2a

sine(a)

Aborting calculation: Use 'esc' key. This will bring back the prompt ('>' sign)