Advanced programming in R: Functions

In R when you are creating a function the function name and the file in which you are creating the function need not be same and you can have one or more function definitions in a single R file. Functions are created in R by using the command function.The general structure of the function file is as follows f = function of arguments and then you have statements that are needed to be executed. This f is the function name when you write this command this means that you are creating a function with name f which takes certain arguments and executes the following statements.

Let us see how to create a function file. Creating a function file is similar to opening an R script which we have already seen. You can either use file button in the toolbar or you can use the + button just below the file tab to create an R script, once you create an R script you can save it with whatever name you want.

volCylinder=function(dia=5,len=100)

{

  volume=pi*dia^2*len/4

  return(volume)

  }

you need to load the functions before you invoke or execute them in R. To load a function you need to click on the source button that is available in the R script menu. Clicking the source button will not execute the function; it will only load the function file and make it ready for invoking.

Once you load the function, you can invoke the function from the console as follows you want the volume to be saved in the variable v and then you are calling this function volcylinder with the arguments 5 and 10. So, this will run the function to calculate the volume and returns the volume.

```
> v=volCylinder(5,10)
> v
[1] 196.3495

>
```

In R the functions are executed in a lazy fashion, when we say lazy what it mean is if some arguments are missing the function is still executed as long as the execution does not involve those arguments.

A final word we need to load the function file every time you change something inside the function definition either you restart R studio or make changes in the function file. If you do not do that either you get an error or you will not get correct outputs which you are expecting, because you would have changed something in the function definition and not saved the original version. Once you save the original version also you have to invoke the function before you use.