R: Functions

R is an object oriented language. Tasks are completed through objects. A function is an example of an object you can create to perform some task.

 **Creating a simple functions**

Note that the sum() function already exists in R and can be used to add two numbers; for illustrative purposes, however, we will write our own simple function to do this.

Addtwo <- function(a,b){

 a+b

}

To call the function, enter the following at the prompt.

> Addtwo(3,9)

[1] 12

To save the outcomes into an object vs. printing to screen

> poo <- Addtwo(3,9)

> poo

[1] 12

 **Creating a function that will return multiple outputs**

Next, suppose you want to write a function in R to both find the difference between two values and the ratio of those two values. You may start with the following.

DiffRatio <- function(a,b){

 diff = a - b

 ratio = a / b

 return(list("Diff" = diff,"Ratio" = ratio))

}

> DiffRatio(10,5)

$Diff

[1] 5

$Ratio

[1] 2

**Creating a function that with specification of default values**

Next, suppose you want to write a function in R to both find the product of two values. If parameters of the function are not provided, then default values are to be specified.

Myproduct <- function(x=1,y=1){

 result = x\*y

 return(result)

}

Using this function with x=10 and y=5

> Myproduct(x=10,y=5)

[1] 50

Using the default parameter values

> Myproduct()

[1] 1

Using this function with x=10 and (y=1, the default value)

> Myproduct(x=10)

[1] 10