

## **SESSION -3 – FOUNDATIONAL R PROGRAMMING**

### **ASSIGNMENT - 3**

Problem Statement:

1. Define matrix mymat by replicating the sequence 1:5 for 4 times and transforming into a matrix, sum over rows and columns.

```
5 # create sequence 1:5
6 # define matrix mymat by replicating the sequence 1:5 for
7 #4 times and transforming into a matrix
8 mymat<-matrix(rep(seq(5), 4), ncol = 5)
9 mymat
10 # mymat sum on rows
11 apply(mymat, 1, sum)
12 # mymat sum on columns
13 apply(mymat, 2, sum)
14 |
```

```
> # define matrix mymat by replicating the sequence 1:5 for
> #4 times and transforming into a matrix
> mymat<-matrix(rep(seq(5), 4), ncol = 5)
> mymat
      [,1] [,2] [,3] [,4] [,5]
[1,]     1     5     4     3     2
[2,]     2     1     5     4     3
[3,]     3     2     1     5     4
[4,]     4     3     2     1     5
> # mymat sum on rows
> apply(mymat, 1, sum)
[1] 15 15 15 15
> # mymat sum on columns
> apply(mymat, 2, sum)
[1] 10 11 12 13 14
> |
```

`apply()` function, instructs R to call a user-specified function on each of the rows or each of the columns of a matrix.

This is the general form of `apply` for matrices:

**`apply(m,dimcode,f,fargs)`**

where the arguments are as follows:

1. `m` is the matrix.
2. `dimcode` is the dimension, equal to 1 if the function applies to rows or 2 for columns.
3. `f` is the function to be applied.
4. `fargs` is an optional set of arguments to be supplied to `f`.