SESSION 3 – ASSIGNMENT 3.3

Date: 29th December 2018

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

```
mymat <- matrix(rep(1:5,4), nrow = 4, ncol = 4, byrow = F)
colnames(mymat) <- c("col1", "col2", "col3","col4")
rownames(mymat) <- c("row1", "row2","row3","row4")
mymat

#we can do like this too for row/col sum
#rowSums(mymat)
#colSums(mymat)


col.sums <- apply(mymat, 2, sum)
col.sums
row.sums <- apply(mymat, 1, sum)
row.sums
rbind(mymat ,Rtot = row.sums)
cbind(mymat ,Ctot = col.sums)
rbind(cbind(mymat, Rtot = row.sums), Ctot = c(col.sums, sum(col.sums)))
```

Console Terminal

```
> mymat <- matrix(rep(1:5,4), nrow = 4, ncol = 4, byrow = F)
> colnames(mymat) <- c("col1", "col2", "col3","col4")
> rownames(mymat) <- c("row1", "row2","row3","row4")
> mymat
     col1 col2 col3 col4
row1    1    5    4    3
row2    2    1    5    4
row3    3    2    1    5
row4    4    3    2    1
> col.sums <- apply(mymat, 2, sum)
> col.sums
col1 col2 col3 col4
  10   11   12   13
> row.sums <- apply(mymat, 1, sum)
> row.sums
row1 row2 row3 row4
  13   12   11   10
> rbind(mymat ,Rtot = row.sums)
     col1 col2 col3 col4
row1    1    5    4    3
row2    2    1    5    4
row3    3    2    1    5
row4    4    3    2    1
Rtot   13   12   11   10
> cbind(mymat ,Ctot = col.sums)
     col1 col2 col3 col4 Ctot
row1    1    5    4    3   10
row2    2    1    5    4   11
row3    3    2    1    5   12
row4    4    3    2    1   13
> rbind(cbind(mymat, Rtot = row.sums), Ctot = c(col.sums, sum(col.sums)))
     col1 col2 col3 col4 Rtot
row1    1    5    4    3   13
row2    2    1    5    4   12
row3    3    2    1    5   11
row4    4    3    2    1   10
Ctot   10   11   12   13   46
>
```