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.

Answer :

The R-script for the given problem is as follows:

```
rep(1:5, 4) # replicating the sequence 1 to 5

mymat <- matrix(rep(1:5 ,4), nrow = 4 , ncol = 5, byrow = TRUE )

mymat

# sum over rows and columns.

apply(mymat, 1, sum) # sum of rows

apply(mymat, 2, sum) # sum of columns
```

Explanation:

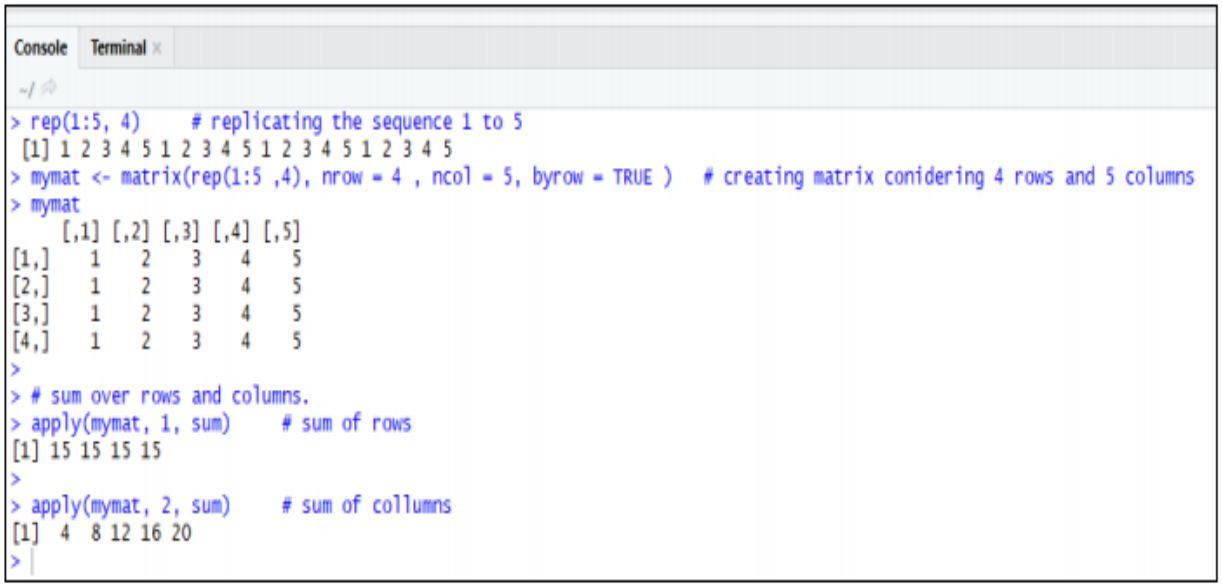
- Here , matrix mymat is created by replicating the sequence of 1 to 5 (1,2,3,4,5) for 4 times by using rep(1:5 ,4).

- The matrix mymat is of order 4X5 (4 rows and 5 columns)

- The sum over rows and columns is found by apply() function using the r-commands as follows:

o apply(mymat, 1, sum) # sum of rows

o apply(mymat, 2, sum) # sum of columns
Here,1 is used for rows and 2 is used for columns.


Console
Terminal
~/
> rep(1:5, 4)   # replicating the sequence 1 to 5
 [1] 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5
> mymat <- matrix(rep(1:5 ,4), nrow = 4 , ncol = 5, byrow = TRUE)   # creating matrix conidering 4 rows and 5 columns
> mymat
     [,1] [,2] [,3] [,4] [,5]
[1,]   1   2   3   4   5
[2,]   1   2   3   4   5
[3,]   1   2   3   4   5
[4,]   1   2   3   4   5
>
> # sum over rows and columns.
> apply(mymat, 1, sum)   # sum of rows
[1] 15 15 15 15
>
> apply(mymat, 2, sum)   # sum of collumns
[1] 4 8 12 16 20
>