# 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 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

# with user defined function within the apply

# that adds any number y to the sum of the row

# here chosen as 4.5

apply(mymat, 1, function(x, y) sum(x) + y, y=4.5)

## [1] 19.5 19.5 19.5 19.5

# or produce a summary column wise (for each column)

apply(mymat, 2, function(x, y) summary(mymat))

## [,1] [,2] [,3] [,4]

## [1,] "Min. :1.00 " "Min. :1.00 " "Min. :1.00 " "Min. :1.00 "

## [2,] "1st Qu.:1.75 " "1st Qu.:1.75 " "1st Qu.:1.75 " "1st Qu.:1.75 "

## [3,] "Median :2.50 " "Median :2.50 " "Median :2.50 " "Median :2.50 "

## [4,] "Mean :2.50 " "Mean :2.50 " "Mean :2.50 " "Mean :2.50 "

## [5,] "3rd Qu.:3.25 " "3rd Qu.:3.25 " "3rd Qu.:3.25 " "3rd Qu.:3.25 "

## [6,] "Max. :4.00 " "Max. :4.00 " "Max. :4.00 " "Max. :4.00 "

## [7,] "Min. :1.00 " "Min. :1.00 " "Min. :1.00 " "Min. :1.00 "

## [8,] "1st Qu.:1.75 " "1st Qu.:1.75 " "1st Qu.:1.75 " "1st Qu.:1.75 "

## [9,] "Median :2.50 " "Median :2.50 " "Median :2.50 " "Median :2.50 "

## [10,] "Mean :2.75 " "Mean :2.75 " "Mean :2.75 " "Mean :2.75 "

## [11,] "3rd Qu.:3.50 " "3rd Qu.:3.50 " "3rd Qu.:3.50 " "3rd Qu.:3.50 "

## [12,] "Max. :5.00 " "Max. :5.00 " "Max. :5.00 " "Max. :5.00 "

## [13,] "Min. :1.00 " "Min. :1.00 " "Min. :1.00 " "Min. :1.00 "

## [14,] "1st Qu.:1.75 " "1st Qu.:1.75 " "1st Qu.:1.75 " "1st Qu.:1.75 "

## [15,] "Median :3.00 " "Median :3.00 " "Median :3.00 " "Median :3.00 "

## [16,] "Mean :3.00 " "Mean :3.00 " "Mean :3.00 " "Mean :3.00 "

## [17,] "3rd Qu.:4.25 " "3rd Qu.:4.25 " "3rd Qu.:4.25 " "3rd Qu.:4.25 "

## [18,] "Max. :5.00 " "Max. :5.00 " "Max. :5.00 " "Max. :5.00 "

## [19,] "Min. :1.00 " "Min. :1.00 " "Min. :1.00 " "Min. :1.00 "

## [20,] "1st Qu.:2.50 " "1st Qu.:2.50 " "1st Qu.:2.50 " "1st Qu.:2.50 "

## [21,] "Median :3.50 " "Median :3.50 " "Median :3.50 " "Median :3.50 "

## [22,] "Mean :3.25 " "Mean :3.25 " "Mean :3.25 " "Mean :3.25 "

## [23,] "3rd Qu.:4.25 " "3rd Qu.:4.25 " "3rd Qu.:4.25 " "3rd Qu.:4.25 "

## [24,] "Max. :5.00 " "Max. :5.00 " "Max. :5.00 " "Max. :5.00 "

## [25,] "Min. :2.00 " "Min. :2.00 " "Min. :2.00 " "Min. :2.00 "

## [26,] "1st Qu.:2.75 " "1st Qu.:2.75 " "1st Qu.:2.75 " "1st Qu.:2.75 "

## [27,] "Median :3.50 " "Median :3.50 " "Median :3.50 " "Median :3.50 "

## [28,] "Mean :3.50 " "Mean :3.50 " "Mean :3.50 " "Mean :3.50 "

## [29,] "3rd Qu.:4.25 " "3rd Qu.:4.25 " "3rd Qu.:4.25 " "3rd Qu.:4.25 "

## [30,] "Max. :5.00 " "Max. :5.00 " "Max. :5.00 " "Max. :5.00 "

## [,5]

## [1,] "Min. :1.00 "

## [2,] "1st Qu.:1.75 "

## [3,] "Median :2.50 "

## [4,] "Mean :2.50 "

## [5,] "3rd Qu.:3.25 "

## [6,] "Max. :4.00 "

## [7,] "Min. :1.00 "

## [8,] "1st Qu.:1.75 "

## [9,] "Median :2.50 "

## [10,] "Mean :2.75 "

## [11,] "3rd Qu.:3.50 "

## [12,] "Max. :5.00 "

## [13,] "Min. :1.00 "

## [14,] "1st Qu.:1.75 "

## [15,] "Median :3.00 "

## [16,] "Mean :3.00 "

## [17,] "3rd Qu.:4.25 "

## [18,] "Max. :5.00 "

## [19,] "Min. :1.00 "

## [20,] "1st Qu.:2.50 "

## [21,] "Median :3.50 "

## [22,] "Mean :3.25 "

## [23,] "3rd Qu.:4.25 "

## [24,] "Max. :5.00 "

## [25,] "Min. :2.00 "

## [26,] "1st Qu.:2.75 "

## [27,] "Median :3.50 "

## [28,] "Mean :3.50 "

## [29,] "3rd Qu.:4.25 "

## [30,] "Max. :5.00 "

Often we use dataframes: in this case, we must ensure that the data have the same type or else, forced data type conversions may occur, which probably is not what you want (For example, in a mixed text and number dataframe, numeric data will be converted to strings or characters).