Minitask1

Florencia Luque and Seyed Amirhossein Mosaddad

2024-10-10

Part 1 - Apply Family

The apply Family is a way to apply a function to different types of data like a row, vector, matrix, etc. This functions have been replace or you should replace it with others libraries that do the same with an optimal result. This function is an alternative to a loop when you know waht you need to do to the data. #explain why or something about the general ways of the apply family

The family is created by this functions; apply(), lapply() , sapply(), vapply(), mapply(), rapply(), and tapply() functions.

apply

This function can be use to an arrays in different dimensions like a matrix. You will need a X the array, Margin 1 o 2 if you want to apply the function by row (1) and over columns (2). You can also apply on both using Margin=c(1,2) and obviously the fun that will be the function that you would like to apply like the sum or the mean. Example:

```
mat = matrix(data = rnorm(20,20,4),nrow = 4,ncol = 5,byrow = TRUE)
print(mat)
```

```
##           [,1]     [,2]     [,3]     [,4]     [,5]
## [1,]  6.687345 24.24718 18.95724 21.03497 18.77241
## [2,] 13.369532 27.57134 20.33523 20.98515 24.65944
## [3,] 21.539949 18.71666 22.21455 16.14559 27.07041
## [4,] 20.684289 22.86189 19.41614 18.41629 14.02100
```

```
sum_by_column = apply(mat,MARGIN = 2,FUN = sum)

print(sum_by_column)
```

```
## [1] 62.28112 93.39707 80.92315 76.58200 84.52326
```

tapply

sapply

lapply

vapply

rapply

mapply

Part 2 - MLE