

Funciones DF

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```
#Función sapply
```

```
str(iris)
```

```
## 'data.frame': 150 obs. of 5 variables:
## $ Sepal.Length: num 5.1 4.9 4.7 4.6 5 5.4 4.6 5 4.4 4.9 ...
## $ Sepal.Width : num 3.5 3 3.2 3.1 3.6 3.9 3.4 3.4 2.9 3.1 ...
## $ Petal.Length: num 1.4 1.4 1.3 1.5 1.4 1.7 1.4 1.5 1.4 1.5 ...
## $ Petal.Width : num 0.2 0.2 0.2 0.2 0.2 0.4 0.3 0.2 0.2 0.1 ...
## $ Species : Factor w/ 3 levels "setosa","versicolor",...: 1 1 1 1 1 1 1 1 1 1 ...
```

```
sapply(subset(iris, select=1:4), mean)
```

```
## Sepal.Length Sepal.Width Petal.Length Petal.Width
## 5.843333 3.057333 3.758000 1.199333
```

```
sapply(iris[, 1:4], sum)
```

```
## Sepal.Length Sepal.Width Petal.Length Petal.Width
## 876.5 458.6 563.7 179.9
```

```
f = function(x){sqrt(sum(x^2))}
```

```
sapply(iris[, 1:4], f)
```

```
## Sepal.Length Sepal.Width Petal.Length Petal.Width
## 72.27621 37.82063 50.82037 17.38764
```

```
df = data.frame(C1 = c(1,2,NA,4), C2 = c(5,NA,2,3))
```

```
sapply(df, mean)
```

```
## C1 C2
```

```
## NA NA
```

```
sapply(df, mean, na.rm=TRUE)
```

```
## C1 C2
```

```
## 2.333333 3.333333
```

```
aggregate(Sepal.Length ~ Species, data = iris, FUN = mean, na.rm = TRUE)
```

```
## Species Sepal.Length
```

```
## 1 setosa 5.006
```

```
## 2 versicolor 5.936
```

```
## 3 virginica 6.588
```

```
aggregate(cbind(Sepal.Length, Petal.Length) ~ Species, data = iris,
FUN = mean, na.rm = TRUE)
```

```
## Species Sepal.Length Petal.Length
```

```
## 1 setosa 5.006 1.462
```

```
## 2 versicolor 5.936 4.260
```

```
## 3 virginica 6.588 5.552
```

```
head(mtcars)
```

```
##           mpg cyl disp  hp drat   wt  qsec vs am gear carb
## Mazda RX4      21.0   6  160 110 3.90 2.620 16.46 0  1    4    4
## Mazda RX4 Wag  21.0   6  160 110 3.90 2.875 17.02 0  1    4    4
## Datsun 710      22.8   4  108  93 3.85 2.320 18.61 1  1    4    1
## Hornet 4 Drive  21.4   6  258 110 3.08 3.215 19.44 1  0    3    1
## Hornet Sportabout 18.7   8  360 175 3.15 3.440 17.02 0  0    3    2
## Valiant         18.1   6  225 105 2.76 3.460 20.22 1  0    3    1
```

```
str(mtcars)
```

```
## 'data.frame':    32 obs. of  11 variables:
##  $ mpg : num  21 21 22.8 21.4 18.7 18.1 14.3 24.4 22.8 19.2 ...
##  $ cyl : num  6 6 4 6 8 6 8 4 4 6 ...
##  $ disp: num  160 160 108 258 360 ...
##  $ hp : num  110 110 93 110 175 105 245 62 95 123 ...
##  $ drat: num  3.9 3.9 3.85 3.08 3.15 2.76 3.21 3.69 3.92 3.92 ...
##  $ wt : num  2.62 2.88 2.32 3.21 3.44 ...
##  $ qsec: num  16.5 17 18.6 19.4 17 ...
##  $ vs : num  0 0 1 1 0 1 0 1 1 1 ...
##  $ am : num  1 1 1 0 0 0 0 0 0 0 ...
##  $ gear: num  4 4 4 3 3 3 3 4 4 4 ...
##  $ carb: num  4 4 1 1 2 1 4 2 2 4 ...
```

```
mtcars$cyl = as.factor(mtcars$cyl)
mtcars$gear = as.factor(mtcars$gear)
mtcars$carb = as.factor(mtcars$carb)
str(mtcars)
```

```
## 'data.frame':    32 obs. of  11 variables:
##  $ mpg : num  21 21 22.8 21.4 18.7 18.1 14.3 24.4 22.8 19.2 ...
##  $ cyl : Factor w/ 3 levels "4","6","8": 2 2 1 2 3 2 3 1 1 2 ...
##  $ disp: num  160 160 108 258 360 ...
##  $ hp : num  110 110 93 110 175 105 245 62 95 123 ...
##  $ drat: num  3.9 3.9 3.85 3.08 3.15 2.76 3.21 3.69 3.92 3.92 ...
##  $ wt : num  2.62 2.88 2.32 3.21 3.44 ...
##  $ qsec: num  16.5 17 18.6 19.4 17 ...
##  $ vs : num  0 0 1 1 0 1 0 1 1 1 ...
##  $ am : num  1 1 1 0 0 0 0 0 0 0 ...
##  $ gear: Factor w/ 3 levels "3","4","5": 2 2 2 1 1 1 1 2 2 2 ...
##  $ carb: Factor w/ 6 levels "1","2","3","4",...: 4 4 1 1 2 1 4 2 2 4 ...
```

```
aggregate(mpg~cyl+gear+carb, data = mtcars, FUN = mean, na.rm = TRUE)
```

```
##      cyl gear carb    mpg
## 1     4    3    1 21.50
## 2     6    3    1 19.75
## 3     4    4    1 29.10
## 4     8    3    2 17.15
## 5     4    4    2 24.75
## 6     4    5    2 28.20
## 7     8    3    3 16.30
## 8     8    3    4 12.62
## 9     6    4    4 19.75
## 10    8    5    4 15.80
```

##	11	6	5	6	19.70
##	12	8	5	8	15.00