Untitled

April 3, 2020

```r
In [1]: Loch <- c("Ness", "Lomond" ,"Morar","Tay","Awe", "Maree","Ericht",
                  "Lochy", "Rannoch","Shiel",  "Katrine","Arkaig","Shin")
        Volume <- c(7.45,2.6,2.3,1.6,1.2,1.09,1.08,1.07,
                    0.97,0.79,0.77,0.75,0.35)
        Area <- c(56,71,27,26.4,39,28.6,18.6,16,
                  19,19.5,12.4,16,22.5)
        Lenght <- c(39,36,18.8,23,41,20,23,16,
                    15.7,28,12.9,19.3,27.8)
        MaxDepth <- c(230,190,310,150,94,114,156,
                      162,134,128,151,109,49)
        MeanDepth <- c(132,37,87,60.6,32,38,57.6,
                       70,51,40,43.4,46.5,15.5 )

        data <- data.frame (Loch, Volume, Area, Lenght, MaxDepth, MeanDepth)
        print(data)
```

```
      Loch Volume Area Lenght MaxDepth MeanDepth
1     Ness   7.45 56.0   39.0      230     132.0
2   Lomond   2.60 71.0   36.0      190      37.0
3    Morar   2.30 27.0   18.8      310      87.0
4      Tay   1.60 26.4   23.0      150      60.6
5      Awe   1.20 39.0   41.0       94      32.0
6    Maree   1.09 28.6   20.0      114      38.0
7   Ericht   1.08 18.6   23.0      156      57.6
8    Lochy   1.07 16.0   16.0      162      70.0
9  Rannoch   0.97 19.0   15.7      134      51.0
10   Shiel   0.79 19.5   28.0      128      40.0
11 Katrine   0.77 12.4   12.9      151      43.4
12  Arkaig   0.75 16.0   19.3      109      46.5
13    Shin   0.35 22.5   27.8       49      15.5
```

```r
In [2]: #i can directly print the maximum lake without creating other variables
        print(paste("Max volume lake: Loch" , data$Loch[which.max(data[,"Volume"])],
                    "  Volume: ", max(data["Volume"])), max.levels=0)

        #in case of future need of those informations i could have defined 3 variables
        #and printed them
```

```r
# max_vol <- max(data["Volume"])
# max_vol_index <- which.max(data[,"Volume"])
# max_vol_name <- data$Loch[max_vol_index]

#same for the min volume and areas
print(paste("Min volume lake: Loch",data$Loch[which.min(data[,"Volume"])],
            "   Volume: ", min(data["Volume"])), max.levels=0)

print(paste("Max Area lake: Loch",data$Loch[which.max(data[,"Area"])],
            "   Area: ", max(data["Area"])), max.levels=0)
print(paste("Min Area lake: Loch",data$Loch[which.min(data[,"Area"])],
            "   Area: ", min(data["Area"])), max.levels=0)

data <- data[order(-Area),] #descending ordering
print("first 2 lake ordered by area: ")
print(head(data, n=2)) #print biggest 2 area lake

scotArea <-80077 #area of scotland
#metodo "sicuro"
#lakeArea <- lapply(data[, sapply(data,is.numeric)], sum)$Area
#metodo facile
lakeArea <- sum(data$Area)
print(paste("Lake total  Area:",lakeArea, " -> ", lakeArea*100/scotArea, "%"))
```

```
[1] "Max volume lake: Loch Ness     Volume:  7.45"
[1] "Min volume lake: Loch Shin     Volume:  0.35"
[1] "Max Area lake: Loch Lomond     Area:  71"
[1] "Min Area lake: Loch Katrine     Area:  12.4"
[1] "first 2 lake ordered by area: "
    Loch Volume Area Lenght MaxDepth MeanDepth
2 Lomond   2.60   71     36      190        37
1   Ness   7.45   56     39      230       132
[1] "Lake total  Area: 372  ->  0.46455286786468 %"
```

In [ ]: