shah\_vaishakhi

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# Create a function that computes the mean, median, min, and max values.

# Use this function to compute those values for the attitude data set.

# Step1 : Lets look at the attitude data and try to understand

# View(attitude)  
  
head(attitude)

## rating complaints privileges learning raises critical advance  
## 1 43 51 30 39 61 92 45  
## 2 63 64 51 54 63 73 47  
## 3 71 70 68 69 76 86 48  
## 4 61 63 45 47 54 84 35  
## 5 81 78 56 66 71 83 47  
## 6 43 55 49 44 54 49 34

# Some additional data analyzing : knowing the data (extra)

#Displaying the column names   
names(attitude)

## [1] "rating" "complaints" "privileges" "learning" "raises"   
## [6] "critical" "advance"

# Dimensions (no. of r,c of dataframe)  
dim(attitude)

## [1] 30 7

# type of dataframe   
class(attitude)

## [1] "data.frame"

# Structure of dataframe variables   
str(attitude)

## 'data.frame': 30 obs. of 7 variables:  
## $ rating : num 43 63 71 61 81 43 58 71 72 67 ...  
## $ complaints: num 51 64 70 63 78 55 67 75 82 61 ...  
## $ privileges: num 30 51 68 45 56 49 42 50 72 45 ...  
## $ learning : num 39 54 69 47 66 44 56 55 67 47 ...  
## $ raises : num 61 63 76 54 71 54 66 70 71 62 ...  
## $ critical : num 92 73 86 84 83 49 68 66 83 80 ...  
## $ advance : num 45 47 48 35 47 34 35 41 31 41 ...

# Step2 : Envisioning the output : doing steps to retreive the required output

# a. determine the number of columns

column\_num <- ncol(attitude)  
column\_num

## [1] 7

# b. extracting a column name

names(attitude[1])

## [1] "rating"

names(attitude[2])

## [1] "complaints"

names(attitude[3])

## [1] "privileges"

names(attitude[4])

## [1] "learning"

names(attitude[5])

## [1] "raises"

names(attitude[6])

## [1] "critical"

names(attitude[7])

## [1] "advance"

# c. identify and compute the function : mean, median, min, and max values.

mean(attitude[,1])

## [1] 64.63333

median (attitude[,1])

## [1] 65.5

min (attitude[,1])

## [1] 40

max (attitude[,1])

## [1] 85

mean(attitude[,2])

## [1] 66.6

median (attitude[,2])

## [1] 65

min (attitude[,2])

## [1] 37

max (attitude[,2])

## [1] 90

mean(attitude[,3])

## [1] 53.13333

median (attitude[,3])

## [1] 51.5

min (attitude[,3])

## [1] 30

max (attitude[,3])

## [1] 83

mean(attitude[,4])

## [1] 56.36667

median (attitude[,4])

## [1] 56.5

min (attitude[,4])

## [1] 34

max (attitude[,4])

## [1] 75

mean(attitude[,5])

## [1] 64.63333

median (attitude[,5])

## [1] 63.5

min (attitude[,5])

## [1] 43

max (attitude[,5])

## [1] 88

mean(attitude[,6])

## [1] 74.76667

median (attitude[,6])

## [1] 77.5

min (attitude[,6])

## [1] 49

max (attitude[,6])

## [1] 92

mean(attitude[,7])

## [1] 42.93333

median (attitude[,7])

## [1] 41

min (attitude[,7])

## [1] 25

max (attitude[,7])

## [1] 72

# d. Using a for loop #for every value from 1 through 7 print the names in attitude dataset

for (i in 1:ncol(attitude)){  
 print(names(attitude[i]))  
 print(paste('mean',mean(attitude[,i],na.rm = TRUE)))  
 print(paste('median',median(attitude[,i],na.rm = TRUE)))  
 print(paste('min',min(attitude[,i],na.rm = TRUE)))  
 print(paste('max',max(attitude[,i],na.rm = TRUE)))  
}

## [1] "rating"  
## [1] "mean 64.6333333333333"  
## [1] "median 65.5"  
## [1] "min 40"  
## [1] "max 85"  
## [1] "complaints"  
## [1] "mean 66.6"  
## [1] "median 65"  
## [1] "min 37"  
## [1] "max 90"  
## [1] "privileges"  
## [1] "mean 53.1333333333333"  
## [1] "median 51.5"  
## [1] "min 30"  
## [1] "max 83"  
## [1] "learning"  
## [1] "mean 56.3666666666667"  
## [1] "median 56.5"  
## [1] "min 34"  
## [1] "max 75"  
## [1] "raises"  
## [1] "mean 64.6333333333333"  
## [1] "median 63.5"  
## [1] "min 43"  
## [1] "max 88"  
## [1] "critical"  
## [1] "mean 74.7666666666667"  
## [1] "median 77.5"  
## [1] "min 49"  
## [1] "max 92"  
## [1] "advance"  
## [1] "mean 42.9333333333333"  
## [1] "median 41"  
## [1] "min 25"  
## [1] "max 72"

# Part 1 - The function definition

# Creating a function  
  
compute\_data <- function(attitude) {  
 datastats <- sapply(attitude, function(v) {  
 c(mean = mean(v, na.rm = TRUE),  
 median = median(v, na.rm = TRUE),  
 min = min(v, na.rm = TRUE),  
 max = max(v, na.rm = TRUE))  
 })  
 return(as.data.frame(datastats))  
}

# Part 2 - The function call

# Calling a function   
  
results <- compute\_data(attitude)  
  
print(results)

## rating complaints privileges learning raises critical advance  
## mean 64.63333 66.6 53.13333 56.36667 64.63333 74.76667 42.93333  
## median 65.50000 65.0 51.50000 56.50000 63.50000 77.50000 41.00000  
## min 40.00000 37.0 30.00000 34.00000 43.00000 49.00000 25.00000  
## max 85.00000 90.0 83.00000 75.00000 88.00000 92.00000 72.00000