

# OPERATIONS ON DATA FRAMES

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## Introduction

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This assignment would help to analyze the built-in data sets in R by performing simple manipulations. The mtcars data set which is built in the RStudio was extracted from the 1974 Motor Trend US magazine. It comprises of fuel consumption and ten other parameters of an automobile, for 32 different automobile models between the year 1973 and 1974. The problem statement is to derive a new attribute named as “speed\_category”, where the car would be classified into 4 types based on their engine power.

## Objective

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To involve the use of functions and file I/O operations, on completion of this assignment, one would be able to demonstrate the ability to perform the following:

- File I/O operations in R involving data frames
- Manipulate the data sets using control structures and functions

## Self-Assessment Questions

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### Steps involved:

- a) Write the built-in dataset mtcars to a file named “newmtcars” onto the disk (File I/O operation)
- b) Read the newly created file on the disk back to the Rstudio into a variable called “df” (File I/O operation)
- c) Create a function which will take a data frame as an argument to perform the operations listed in the subsequent steps

d) Create a vector named as “speed\_category” and classify cars using the below conditions:

- Very fast(greater than 300 hp)
- Fast(b/w 201 and 300 hp)
- Medium (b/w 101 and 200hp)
- Slow (less than 100 hp)

e) Using loops and control structures, populate the “speed\_category” vector

**Note:** To know the usage of if-else loops, refer the below link:

<https://www.programiz.com/r-programming/ifelse-function>

f) Call the function by passing the data frame

g) Append this vector to the original data set mtcars. Call the function by passing the iris data frame and the variable “Species” (in quotes)