

# Challenge Day !

Today is a good day, because today is Challenge Day !

Your mission, if you accept it is to pick between one of those challenge, and be awesome:

1. Create a function that automatize test for correlation between all the variables in a dataset
  - `function (data, columns) -> data.table(variable_1, variable_2, correlation, p_value)`
2. Create a function that performs a pairwise t-test on all columns you give it as input
  - `function (data, columns) -> data.table(variable_1, variable_2, mean_var_1, mean_var_2, p_value)`
3. Create a function that performs a power analysis for a inter-individual analysis
  - `function (mean, variance, effect_size, beta = 0.1, alpha = 0.05) -> number_of_subjects`
4. Create a function that performs correct plots of variable 1 vs variable 2 based on variable types
  - `function (data, columns)`
  - `columns = c('name_of_variable1', 'name_of_variable_2')`
  - The function must checks the type of your variable
  - The function plot either a scatter plot if the two variables are continuous, a box plot if the two variable are discrete, or an histogram if only one variable in columns