Test

1. Load **mtcars** dataset and save it as a dataframe. Make sure no **missing value** is loaded.
2. Use **sapply()** function to select only those columns that are numeric.
3. Use **apply()** function to calculate mean, median and standard deviation per column and per row (separately).
4. Generate **boxplot** for all the variables. Are there any outliers?
5. Use **dplyr** package to filter only rows that have values in range [Q1 – 1.5*IQR, Q3 + 1.5*IQR], where Q1, Q2 and IQR are quartile 1, quartile 2 and Interquartile range respectively.
6. Calculate the difference between **number of rows** of the original and above filtered datasets.
7. **Select** only columns that have median higher than mean.
8. Create a **correlation matrix** of all the variables in the dataset, round up to 2 decimal points and draw a plot based on the matrix.
9. Create a table that will report **standard deviation** of mpg per value of **am** (from here on groups) rounded up to 2 decimal points.
10. Is there any evidence against **normality** of **mpg** distribution in those two groups (am=0 and am=1)? Report p values rounded up to 3 decimal points.
11. Is there any evidence of **statistically significant** difference between **mpg** variances of those two groups? If yes, stabilize it.
12. Is there any evidence of **statistically significant** difference between **mpg** means of those two groups?
13. Use **linear model**, to explain variance in mpg with the rest of available variables.
14. Take the necessary steps to choose the **best possible** model and report Adjusted R squared, significant variables and their coefficients.
15. Define a **function**, that will take an independent variable's (or list of variables') name as an input, run linear regression discussed at points 13, and print the inputted variables' name, coefficient, and whether it is statistically significant or not.