Shiny App for Exploratory Regression Analysis of "mtcars" dataset

Introduction

The 'mtcars' dataset consists of data from the 1974 Motor Trend US magazine. It comprises fuel consumption (mpg) and 10 other aspects of automobile design and performance for 32 automobiles.

```
names(mtcars)
```

```
##  [1] "mpg"  "cyl"  "disp" "hp"   "drat" "wt"   "qsec" "vs"   "am"   "gear"
## [11] "carb"
```

The purpose of this app is to allow user to carry out multivariate linear regression analysis of the 10 aspects of automobile design on the fuel consumption (mpg).

- http://tankokhua.github.io/shiny_slides

Launching the App

This app is best run using the RStudio. First download the "ui.R" and "server.R" files to the same directory. Then there are 2 ways to launch the app:

1. Open either one of files from the RStudio, a "Run App" button will appear, click on that to launch the app.
2. Set the working directory to the same directory as the 2 files, then type "runApp()" from the "Console".

User Interface

On launching the app, the display consists of 2 main panels, the left input panel and the right output panel.

Input Panel

The input panel consists of 10 checkboxes for the user to select the 10 aspects that may have influence on the fuel consumption.

- The selected items will be used as the regressors to perform linear regression in order to determine their significances.
- By default, all 10 items will be used if no items are selected.
- The formula will be displayed each time an item is selected or unselected.
- To generate the output, click the "Go" button after the selection is completed.

Output Panel

The output panel is make up of 3 parts:

- The linear regression formula
- The coefficients of the linear regression
- The residual plots

For more information about linear regression and interpretation of the results, you can sign up for Regression Models (https://www.coursera.org/course/regmods) of the Data Science track.