Annual Vehicle Population 1

The table below is a **partial** capture of the yearly motor vehicle population in Singapore for the years 2006 to 2018, ordered by fuel type.

The complete table is available on the LMS as annualmvpop_dataset.pdf and as annualmvpop_dataset.csv.

Fuel Type	2011	2012	2013	2014
Diesel	346	681	1412	3206
Diesel-Electric	0	0	6	17
Electric	2	3	0	1
Petrol	596947	609792	612654	605511
Petrol-CNG	2642	2410	2253	2100
Petrol-Electric	3786	4684	5020	5727
Petrol-Electric (Plug-In)	0	0	0	47

In this project, your Python program is required to:

- Initialise appropriate lists with the **full** data
- Show four different menu options plus a Quit option.

  Based on the user selection, your program shall
  1. Display the vehicle population by fuel type for the year 2010.
  2. For a user selected fuel type (e.g., Petrol-Electric),
     a) display the mean of the vehicle population in the 6-year span of 2006 to 2011.
     b) display the year(s) and the vehicle population in that period which exceed the mean found above.
  3. For a user selected fuel type, display the years in which the vehicle population has increased by at least 15% over the previous year and the vehicle population for each of those years.
  4. Make the following plots
     a) Difference between Petrol-Electric and Petrol-CNG vehicle population (for each Year) vs Year as a line plot.
     b) Vehicle Population of Petrol-CNG, Petrol-Electric (for each Year) vs Year as a bar chart.

You will be awarded higher marks if you have the following features in your program:

- Retrieve the vehicle population data from the CSV file and store them into lists
- Use numpy or 2D lists/arrays
- Plot the data with properly labelled titles, labels and legends
- Use functions that you define (and initialise lists for storing vehicle population data if your program doesn't retrieve them from the CSV file) in a module called data.py