

Coding assignment for NRC TO3 Position 18292

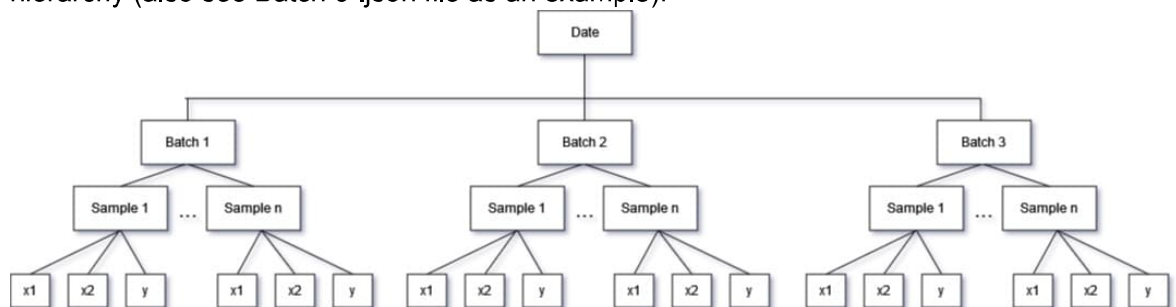
This is meant to be a short coding exercise to evaluate your coding capabilities, in particular as it relates to data handling and structuring. This assignment is not looking for the 'correct' way to code, but instead looks to evaluate your process and flexibility to code the required task.

Included with this assignment are two data files - Batch1.json and Batch2_Batch3.xlsx. Please complete the following tasks, with added comments to explain your process. The evaluator is looking to understand your logic and approach to the task, while also evaluating your general coding knowledge.

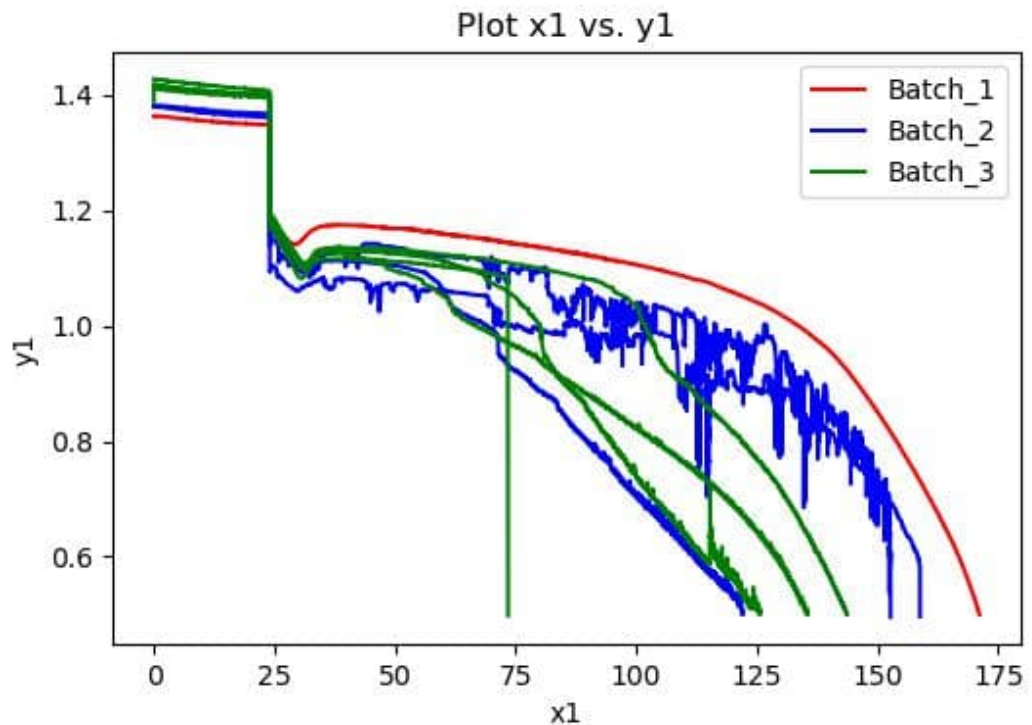
Please submit your completed code as a .zip file to Francois.Cyr@nrc-cnrc.gc.ca (<mailto:Francois.Cyr@nrc-cnrc.gc.ca>). Your code can either be a .py file or a jupyter notebook.

If you have any questions, please e-mail robert.black@nrc-cnrc.gc.ca (<mailto:robert.black@nrc-cnrc.gc.ca>) directly.

1. You are provided with 3 sets of data - Batch 1,2 & 3, each of which is comprised of a various number of samples. Combine all the data into a single object data structure with the following hierarchy (also see Batch 3 .json file as an example):



2. Export the object as a saved file
3. Re-import the new object as a variable
4. Using this variable, generate the following plot:



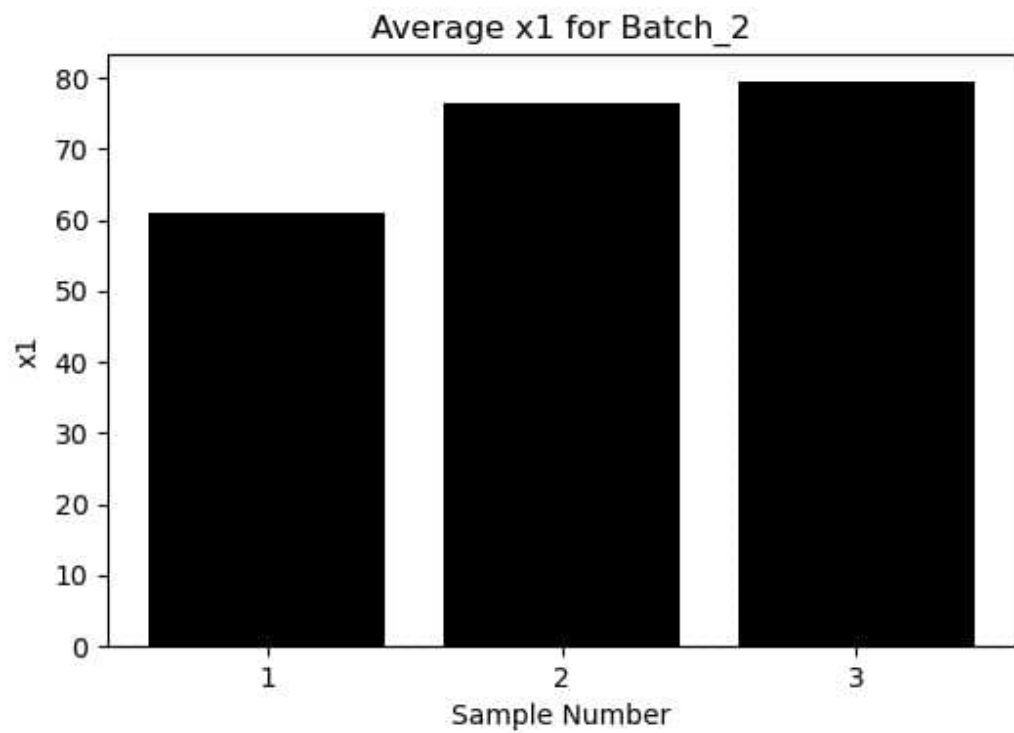
The plot should be colour coded based on the batch number, and each Sample(x1,y) plotted as a function of the batch colour code.

5. Create a function that performs the following:

- Create a function called 'get_average()', with inputs being the data object and the user defined batches for which the average value wants to be found

As an example of the inputs - *get_average(data_file,['Batch_1'])* or *get_average(data_file,['Batch_1','Batch_3'])*

- Compute the average value of x1 for each Sample within the Batch
- Add the average value of x_1 as a new heading to the structured data object as 'average_x1'
- As part of the function, return a bar plot for each user inputted Batch that looks like the following:



- Briefly, what is the process for making this into a class structure called 'PostProcessing'?

In []:

1