**Homework 3 Report**

* Firstly, I imported the data, seperated eruption and waiting time data and split these data into the training and test datasets as instructed.
* Secondly, I initialized the required parameters such as origin and bin size and calculated the min and max values for the regressogram.
* Then, I implemented the regressogram as instructed in the book. I calculated the nominator and denominator of the regressogram seperately. I wanted to determine the bins corresponding to each training data point and used an empty list that store boolean values to do that and in each iteration I appended to that list. I used another empty list to find the nominator that appends the y\_train values to the list if the boolean flag is True. After finding the denominator and nominator I calculated the regressogram.
* For the running mean smoother, first I created 10001 evenly spaced data points between the origin and max value, in order to find the difference between these points and training points and divide them by the bin width and check the condition described in the book. In the condition part I checked for the threshold 0.5. Similar to the regressogram task, I calculated the nominator and denominator terms seperately. I applied the corresponding formula in the book. Similarly, I used an empty list for flag values and another empty list for storing purposes.
* For the kernel smoother, similar to the running mean smoother, I created 10001 evenly spaced data points between the origin and max value. Again, I calculated nominator and denominator terms seperately. I applied the formula in the book straightforward and get the kernel smoother result.
* Plotting for all t3 tasks are done in similar setting with our lab sessions, with some slight modifications to get the exact output as in the instructions of the homework.
* RMSE is calculated straightforward for all these 3 tasks by using the formula provided. The results are reported in the format as in the instructions.