I started the project by parsing the data with parse\_data method. For the first method I created left and right borders arrays as they divide the interval between 0 and maximum X value in training set with 3 bin width.

Left borders = [0, 3, 6, … 57]

Right borders = [3, 6, 9 … 60]

Then I take the mean values of Y values for which their X values are in the same interval. And found estimations. The used the estimation in order to find errors using test set with the formula given in pdf

For the second method Running Mean Smoother instead of creating interval 0 to 60. I divided the interval to 1601 points and for each point I found the data whose distance of X data is equal or less than 1.5.(1.5 from right, 1.5 from left) and take the mean values of their Y value. So, this time trainset data could be included more than one window. Also, this time I did not use these interval points to calculate the error. In order to find the error, I found training set X values whose distance of X, is equal or less than 1.5.(1.5 from right, 1.5 from left) as if they are interval for each test set data. It can be imagined as testing and training are at the same time.

For the third method I used the second method with little changes, I created an interval 0 to 60 with 1601 points, the only difference is that instead of taking the mean value of the data which has close X values I used every train set data for each interval point and test data. I multiplied each Y value with the normal distribution value of its bin distance and sum them and divided the result with the sum of the normal distribution values of its bin distance for each interval point and test data. Finally by using the formula in the pdf I found the errors.