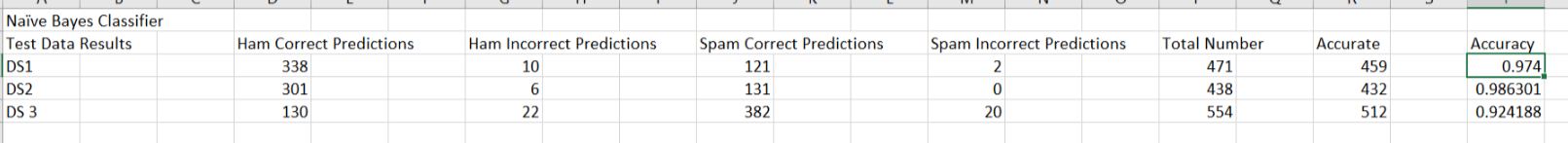
Homework 2 Report

To see how two run the two projects, read the readme file presented.

# Naïve Bayes Classifier

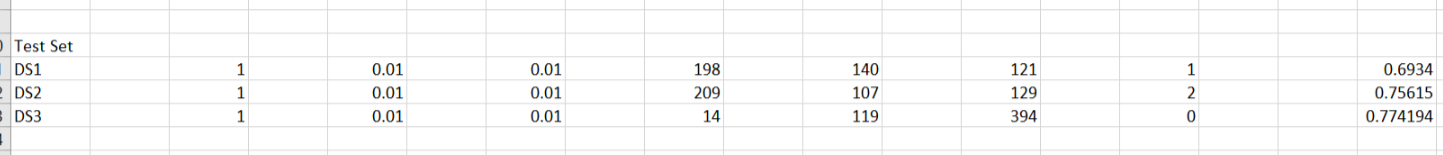
For the three given data sets(hw2\_train/test, enron1\_train/test, enron4\_train/test), an accuracy displayed in the following picture was obtained.



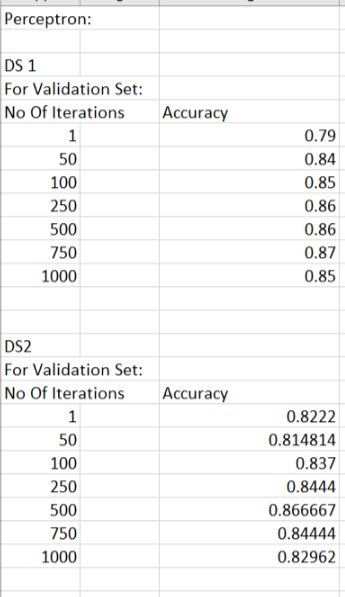
The program is a straightforward Python implementation of the Multinomial Naïve Bayes classifier from the given link in the HW description.

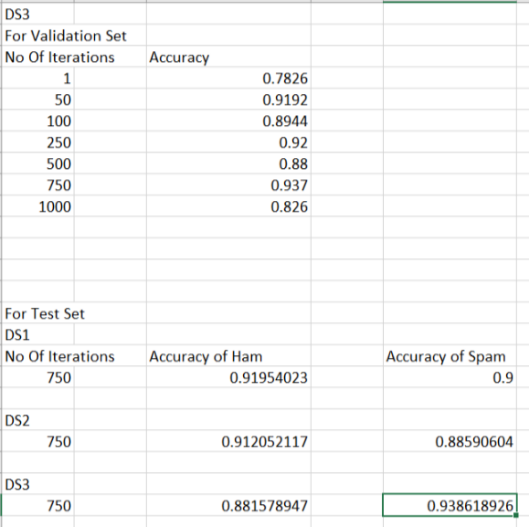
# Logistic Regression

Since Logistic Regression Algorithm takes a high amount of time to learn, it was tested on different parameters for low number of iterations and the results are presented in the Excel sheet available in the project folder. Accuracy on the test data that was obtained is presented below.



# Perceptron Algorithm

For Perceptron algorithm, it was found that for approximately 750 iterations, the accuracy on the validation set is maximized. Results for all the 3 datasets are available in the Excel sheet in the Java Project folder and one can observe that the accuracy on the validation set tends to maximize around 750 iterations.



Validation was performed by training the Perceptron only on Training data and testing was performed by training the perceptron on both training and validation data.