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Academic Honesty Pledge

I have done this assignment completely on my own. I have not copied it, nor have I given my solution to anyone else. I understand that if I am involved in plagiarism or cheating I will have to sign an official form that I have cheated and that this form will be stored in my official university record. I also understand that I will receive a grade of 0 for the involved assignment for my first offense and that I will receive a grade of "F" for the course for any additional offense.

E-Signature: Aditya Nitin Bhagwat

Accuracy in Naïve Bayes Classifier :

By Removing stopwords
Total Accuracy of the dataset is : 0.868201

By Keeping stopwords
Total Accuracy of the dataset is : 0.866109

Accuracy in Perceptron Learning Rule:

Below are the 20 observations achieved by varying number of iterations and learning rate,

Removing Stopwords:
n_iter = 15 learning_rate = 0.0001 accuracy = 0.92678
n_iter = 15 learning_rate = 0.001 accuracy = 0.92050
n_iter = 15 learning_rate = 0.01 accuracy = 0.91841
n_iter = 15 learning_rate = 0.1 accuracy = 0.91841
n_iter = 30 learning_rate = 0.0001 accuracy = 0.92678
n_iter = 30 learning_rate = 0.001 accuracy = 0.92050
n_iter = 30 learning_rate = 0.01 accuracy = 0.91841
n_iter = 30 learning_rate = 0.1 accuracy = 0.91841
n_iter = 45 learning_rate = 0.0001 accuracy = 0.92678
n_iter = 45 learning_rate = 0.001 accuracy = 0.92050
n_iter = 45 learning_rate = 0.01 accuracy = 0.91841
n_iter = 45 learning_rate = 0.1 accuracy = 0.91841
n_iter = 60 learning_rate = 0.0001 accuracy = 0.92678
n_iter = 60 learning_rate = 0.001 accuracy = 0.92050
n_iter = 60 learning_rate = 0.01 accuracy = 0.91841

n_iter = 60 learning_rate = 0.1 accuracy = 0.91841
n_iter = 70 learning_rate = 0.0001 accuracy = 0.92678
n_iter = 70 learning_rate = 0.001 accuracy = 0.92050
n_iter = 70 learning_rate = 0.01 accuracy = 0.91841
n_iter = 70 learning_rate = 0.1 accuracy = 0.91841

Average accuracy :0.921025104603

Keeping Stopwords:
n_iter = 15 learning_rate = 0.0001 accuracy = 0.91632
n_iter = 15 learning_rate = 0.001 accuracy = 0.91213
n_iter = 15 learning_rate = 0.01 accuracy = 0.90795
n_iter = 15 learning_rate = 0.1 accuracy = 0.75732
n_iter = 30 learning_rate = 0.0001 accuracy = 0.93305
n_iter = 30 learning_rate = 0.001 accuracy = 0.92259
n_iter = 30 learning_rate = 0.01 accuracy = 0.93096
n_iter = 30 learning_rate = 0.1 accuracy = 0.92259
n_iter = 45 learning_rate = 0.0001 accuracy = 0.93305
n_iter = 45 learning_rate = 0.001 accuracy = 0.92259
n_iter = 45 learning_rate = 0.01 accuracy = 0.93096
n_iter = 45 learning_rate = 0.1 accuracy = 0.92259
n_iter = 60 learning_rate = 0.0001 accuracy = 0.93305
n_iter = 60 learning_rate = 0.001 accuracy = 0.92259
n_iter = 60 learning_rate = 0.01 accuracy = 0.93096
n_iter = 60 learning_rate = 0.1 accuracy = 0.92259
n_iter = 70 learning_rate = 0.0001 accuracy = 0.93305
n_iter = 70 learning_rate = 0.001 accuracy = 0.92259
n_iter = 70 learning_rate = 0.01 accuracy = 0.93096
n_iter = 70 learning_rate = 0.1 accuracy = 0.92259

Average accuracy :0.916527196653

Note :

1. The Accuracy seems to improve when Perceptron Learning is applied to the same dataset to classify as compared to Naïve Bayes Classification technique when the case is considered of removing the stopwords as well as when we keep the stopwords.
2. The Accuracy doesn't change much when the stopwords are removed or kept when we apply the perceptron learning rule whereas the accuracy improves in Naïve Bayes when the stopwords are removed.