INF 2B
LEARNING
Task 2 – Bernoulli Naive Bayes classification
REPORT

S1674417

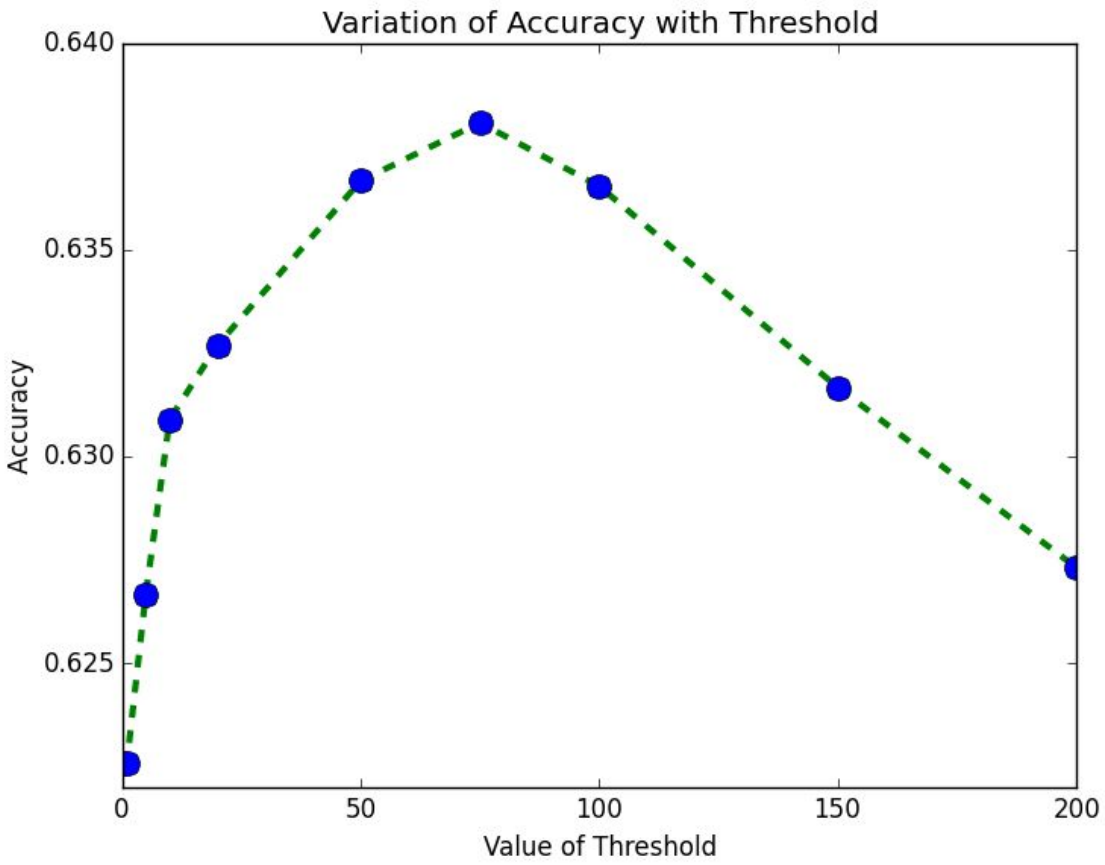
Task 2.2(a)
Time elapsed is = 6.3519449234 seconds

N = 7800 Nerrs = 2944 Accuracy = 0.622564102564

N	**Nerrs**	**Accuracy**
7800	2944	0.622564102564

Task 2.2(b)
The original pixel image vector x = (x1, . . . , xD)^T is converted to a binary image vector b = (b1, . . . , bD) T , where bi is a binary value of either 0 or 1, and D = 784 for the EMNIST data set. This conversion is called binarization.
The effect of changing the threshold value results in a variation of accuracy and has been discussed below.

Drawing reference from the graph below, it can easily be noted that the highest accuracy is obtained when the threshold value is set at 75.
Also, as the threshold deviates from 75, it can be seen that the accuracy drops gradually.



A more detailed table of how the accuracy varies with threshold is drawn below.

Threshold Value	Accuracy
0.1	0.622564102564
1	0.622564102564
5	0.626666666667
10	0.630897435897
20	0.632692307692

50	0.636666666667
75	0.638076923077
100	0.636538461538
150	0.631666666667
200	0.627307692308