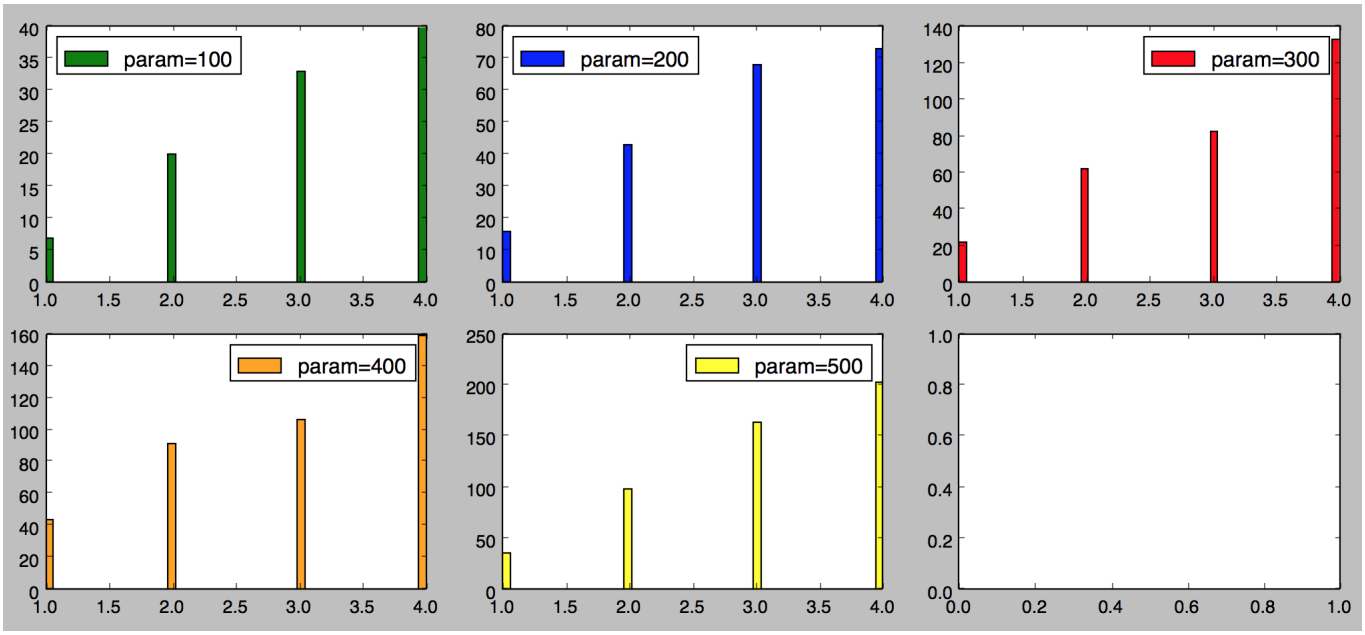
Problem 1 (boosting)

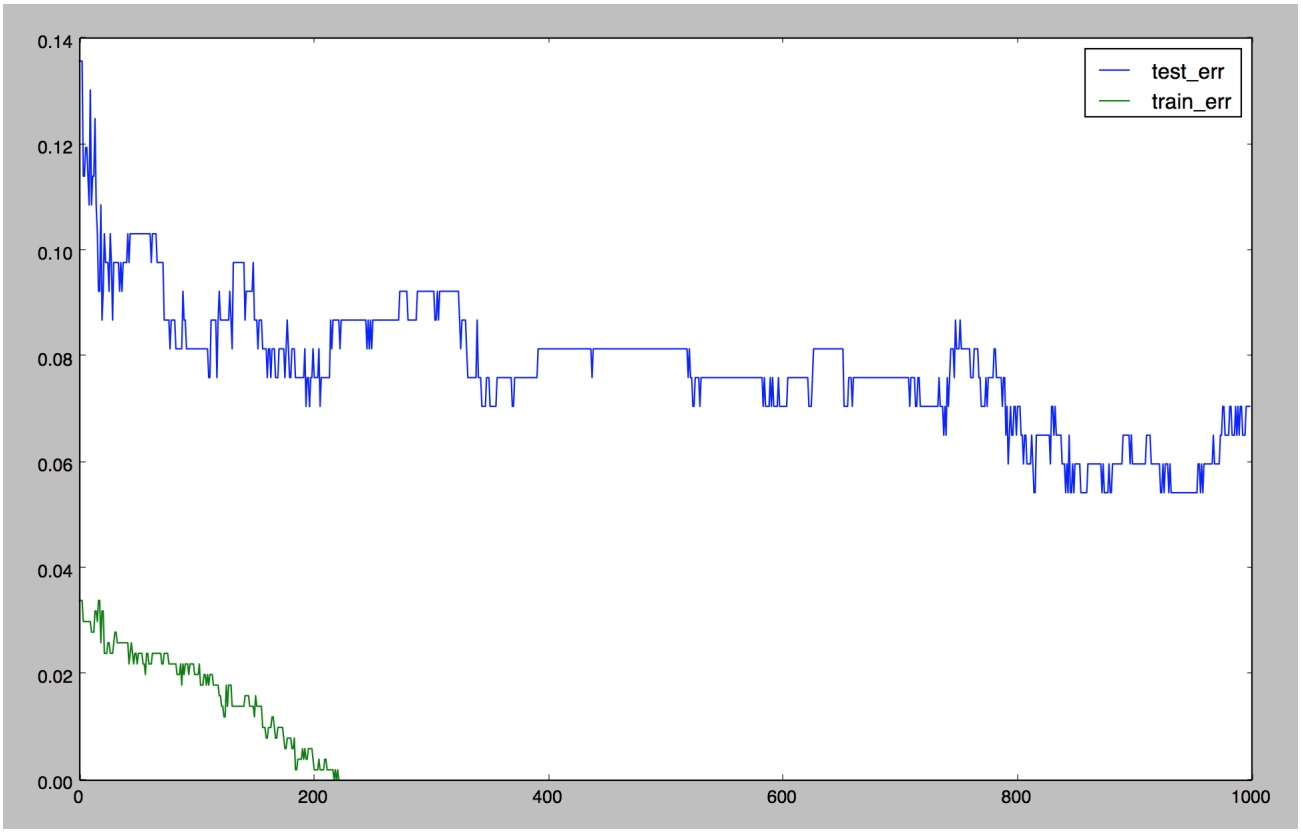
Part 1

My solution involved creating a cumulative sum of weight vector w, and selecting an element from this vector by using python's random.random() function.



Part 2

2. On a single plot, show the training and testing error as a function of iteration t.

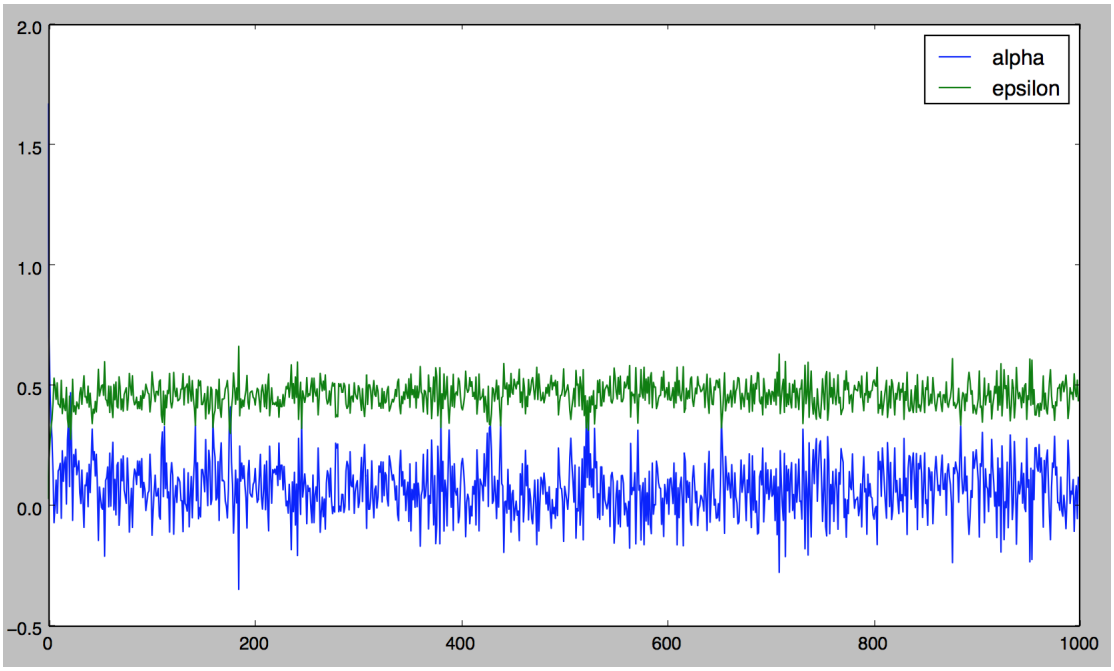


3. Indicate the testing accuracy by learning the Bayes classifier on the training set without boosting.

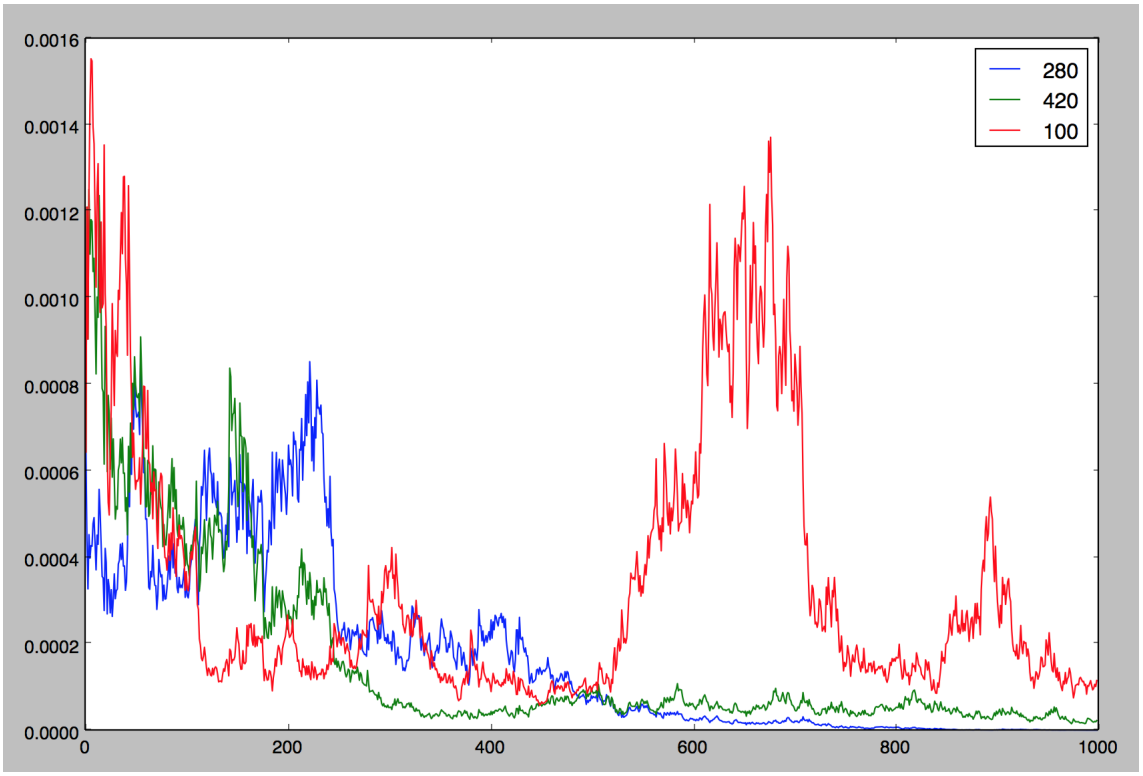
	-1	1
-1	54	27
1	2	101

Table 1: Confusion matrix for Binary Bayes Classifier, accuracy .8423

4. Plot α_t and ϵ_t as a function of t.

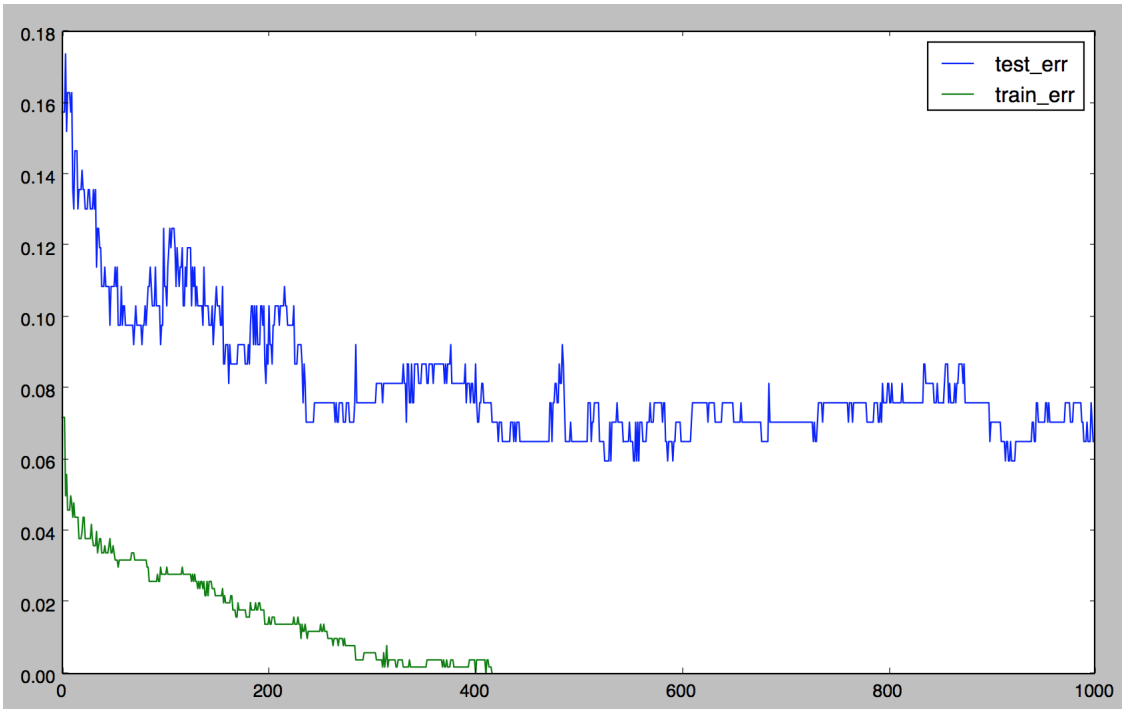


5. Pick 3 data points and plot their corresponding wt(i) as a function of t. Select the points such that there is some variation in these values.



Part 3

2. On a single plot, show the training and testing error as a function of iteration t.



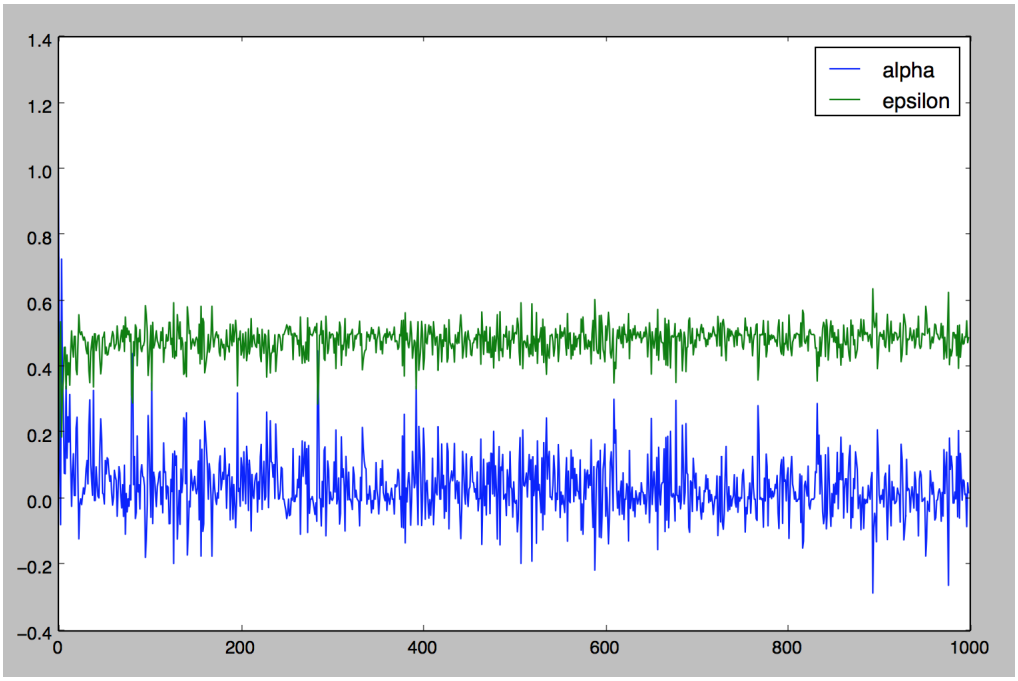
3. Indicate the testing accuracy by learning the logistic regression model on the training set without boosting.

   For this problem, I implemented a binary logistic regression classifier:

	-1	1
-1	62	19
1	0	100

Table 2: Confusion matrix for Binary Logistic Regression Classifier, accuracy .8967

4. Plot α_t and ϵ_t as a function of t.



5. Pick 3 data points and plot their corresponding wt(i) as a function of t. Select the points such that there is some variation in these values.