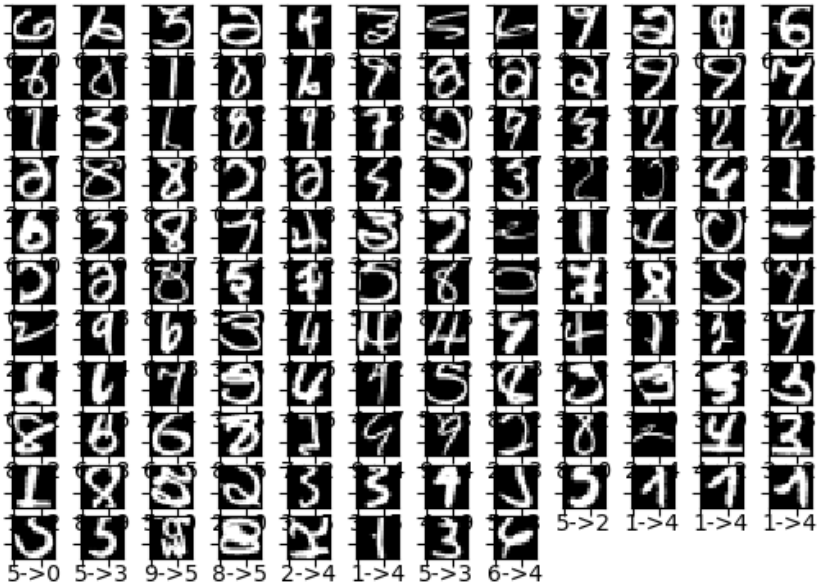
Report assignment 2:

– Test errors for both cases.

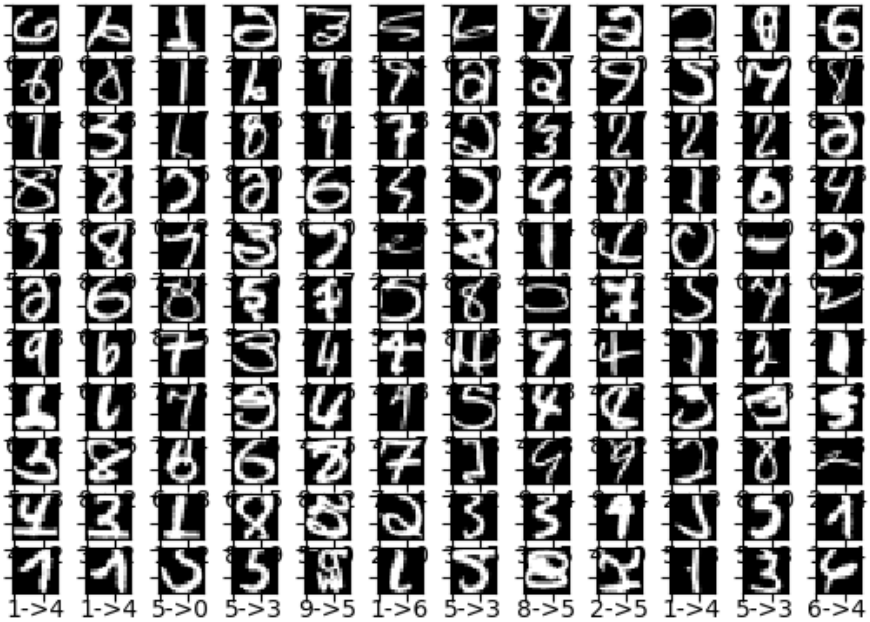
f1_score OneVsOne : 0.92906557497
f1_score SVM OneVsRest : 0.930951026989

– Visually inspect the digits which have been missclassified using confusion matrix for multi-class classification.

SVM OneVsRest Mismatch Count : 128



SVM OneVsOne Mismatch Count : 132



– How do you judge the result? Compare the quality of the classification obtained by the two multi-class schemes.

Quality OvO < Quality of OvR

One percent difference in quality of the two classifiers. OvO does nC2 times while OvR does it only n times.

Almost similar ones were missed by both the models.

– How do the two multi-class schemes compare in terms of runtime?

Runtime SVM OvO : 26.7229850292 seconds

Runtime SVM OvR : 33.7700419426 seconds

Runtime OvO < Runtime OvR // bcz of different sizes of training data.

– Also generate for both cases a figure (ErrorsOneVersusOne.png and ErrorsOneVersusRest.png) containing the missclassified images in the test set

In the .zip file