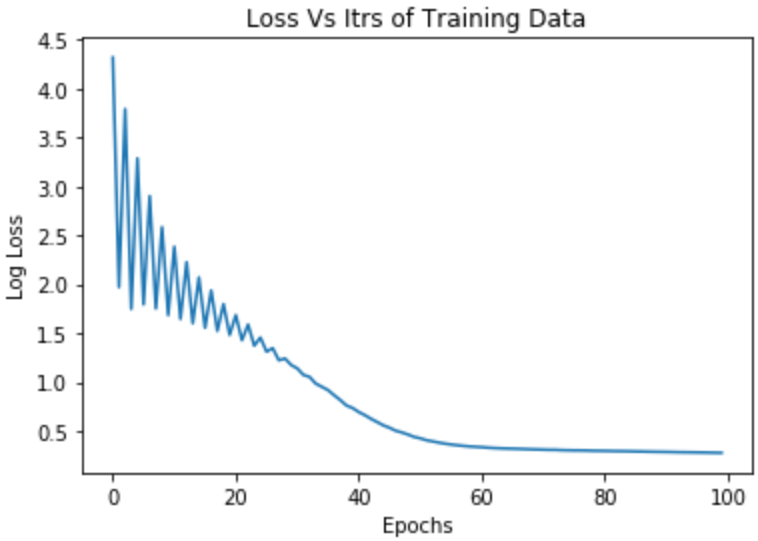
HOMEWORK-3 PROGRAMMING ASSIGNMENT REPORT

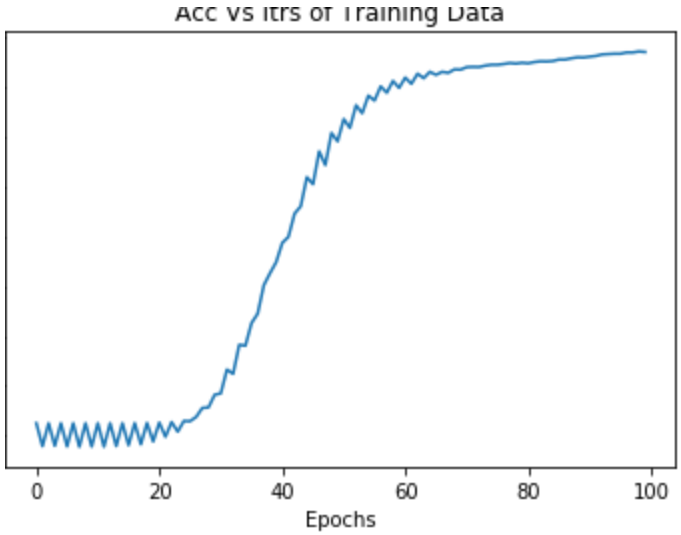
1)

a) Time taken by the model to train the data: 59.69394302368164

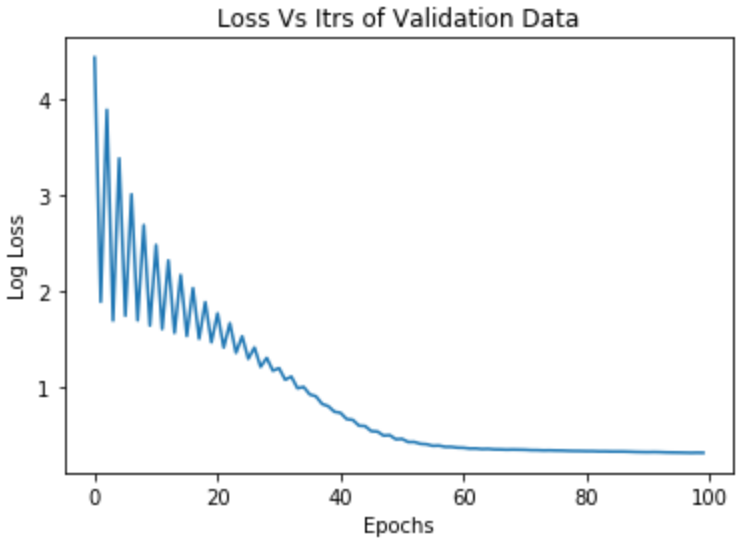
b) Loss vs Iterations for Training Data



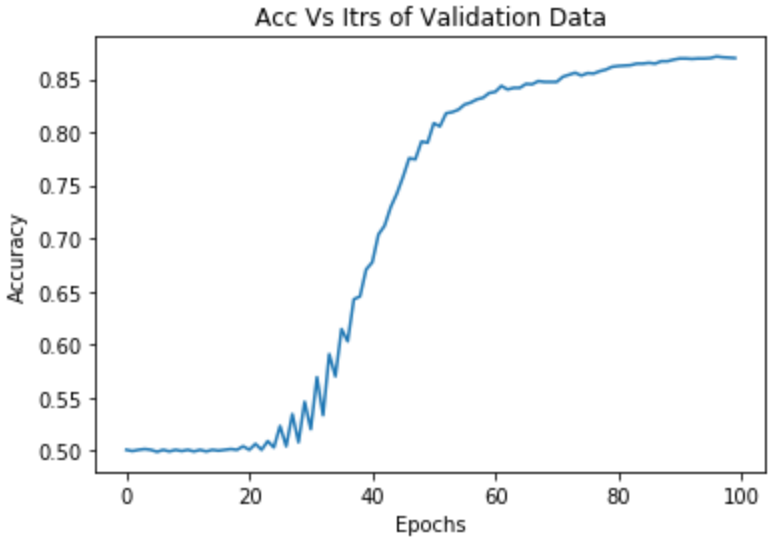
Accuracy vs Iterations for Training Data



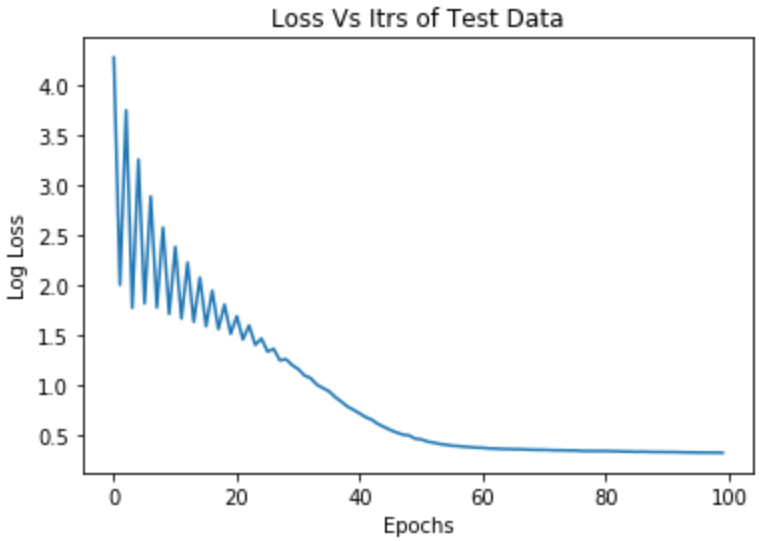
Loss vs Iterations for Validation Data



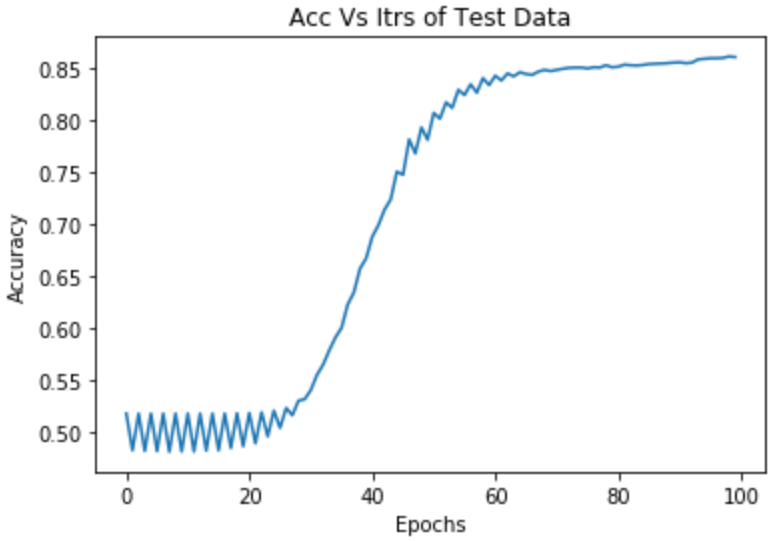
Accuracy vs Iterations for Validation Data



Loss vs Iterations for Test Data



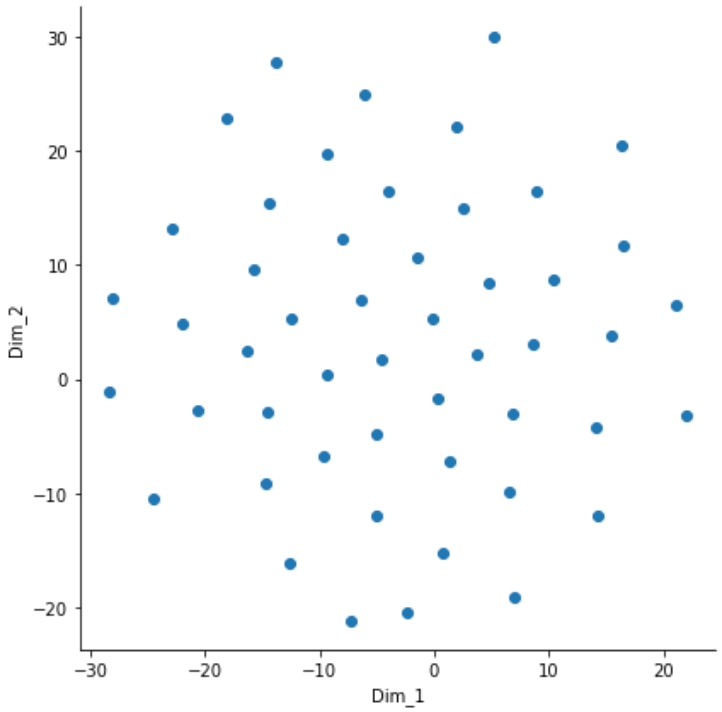
Accuracy vs Iterations for Test Data



Training accuracy 88.52295409181636 %
Validation accuracy 86.97604790419162 %
Test accuracy 86.07914678641593 %

From all loss vs iterations graphs,to some extent the loss is fluctuating and then after some iterations,loss is becoming stable, which means the model is learning correctly.

c)



d) Training set score: 97.67964071856288 %
Validation score: 97.52994011976048 %
Test set score: 96.40752175133315 %

In the predefined model from sklearn, There will be Momentum,nesterovs_momentum,regularization and the solver I have used is lbfgs, All these I have not implemented in the part-a.So,we get more accuracy when we train the model from sklearn.

2) Time taken by model: 47.003408670425415

The accuracy score is 0.8

Confusion matrix is,

array([[4, 2],

[0, 4]])

ROC Curve