Name : Sai Aditya Urumu
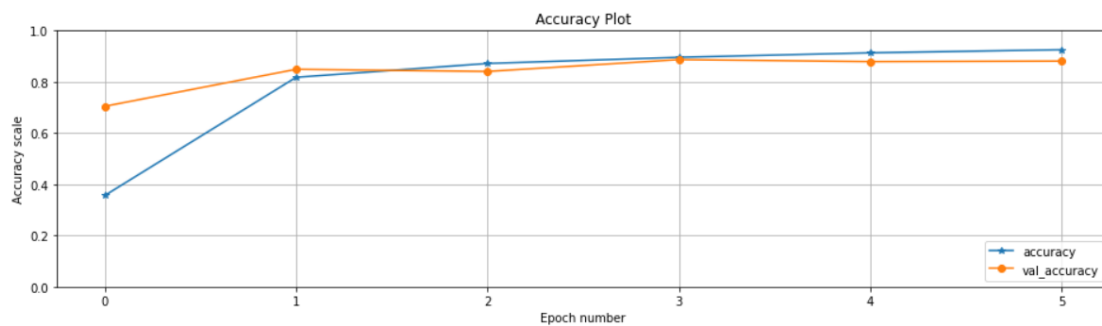
ASU ID: 1222309517

<u>Project 3 : Report</u>

Here, in our project report, I have considered for 6 epoches and the loss, accuracy, val_loss and val_accuracy values are given in the screenshot below ie., for after each and every respective epoch.

```
Epoch 1/6
2290/2290 [==============================] - 1111s 485ms/step - loss: 1.8482 - accuracy: 0.3561 - val_loss: 0.9645 - val_accuracy: 0.7045
Epoch 2/6
2290/2290 [==============================] - 1109s 484ms/step - loss: 0.6129 - accuracy: 0.8177 - val_loss: 0.5408 - val_accuracy: 0.8490
Epoch 3/6
2290/2290 [==============================] - 1122s 490ms/step - loss: 0.4360 - accuracy: 0.8717 - val_loss: 0.5374 - val_accuracy: 0.8405
Epoch 4/6
2290/2290 [==============================] - 1108s 484ms/step - loss: 0.3563 - accuracy: 0.8957 - val_loss: 0.3944 - val_accuracy: 0.8868
Epoch 5/6
2290/2290 [==============================] - 1108s 484ms/step - loss: 0.2991 - accuracy: 0.9132 - val_loss: 0.4301 - val_accuracy: 0.8790
Epoch 6/6
2290/2290 [==============================] - 1119s 489ms/step - loss: 0.2562 - accuracy: 0.9255 - val_loss: 0.4064 - val_accuracy: 0.8810
```

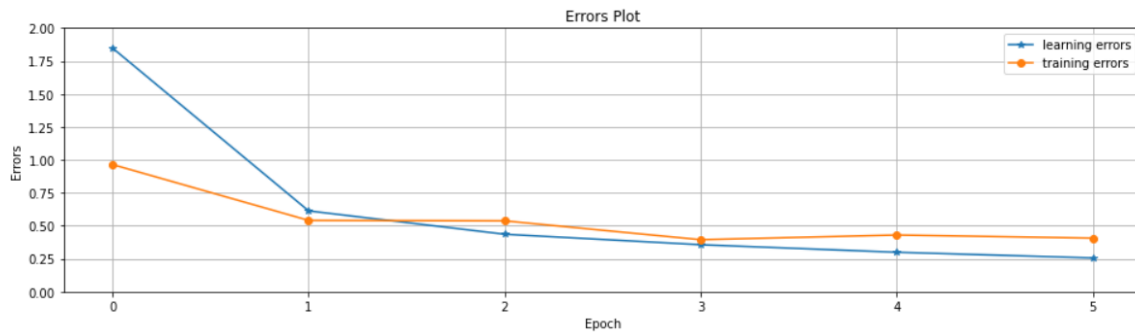Here,

a) Accuracy := Training data accuracy
b) Val_Accuracy := Training data accuracy
c) Loss := learning errors
d) Val_loss := training errors

1) Training accuracy vs epoch graph

2) Testing accuracy vs epoch graph



Errors Plot

3) Final classification accuracy of the Testing set

```
error_testData, accuracy_testData = modelObject.evaluate(test_X,  test_y, verbose=2)

814/814 - 86s - loss: 0.4064 - accuracy: 0.8810 - 86s/epoch - 105ms/step
```

From the above first screenshot we can see that the final classification accuracy of the testing set is '0.8810' and moreover this is after 6 epochs