SOBAN ASIF

BSCS16022

Deep Learning

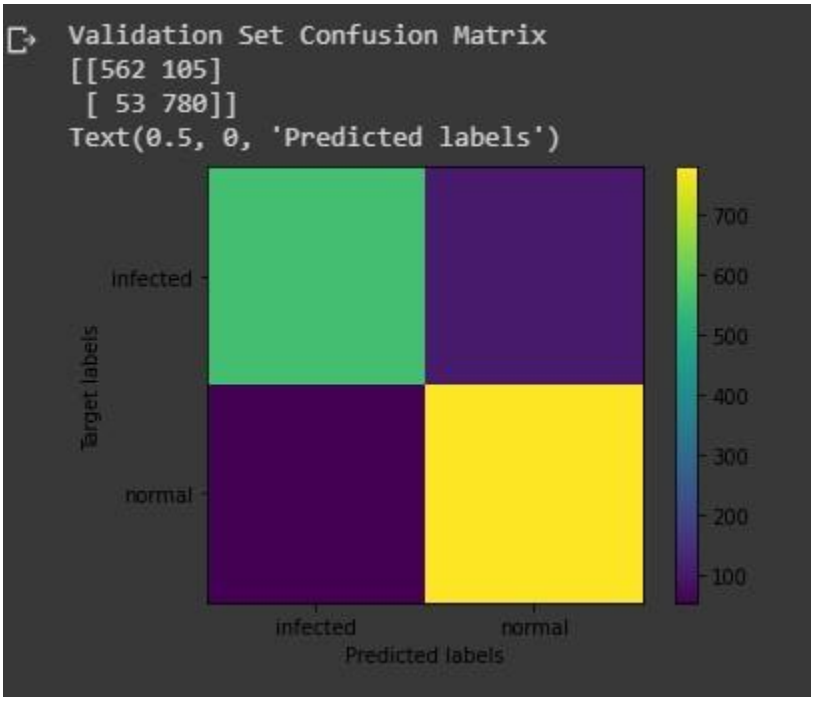
Assignment 4

Task 1

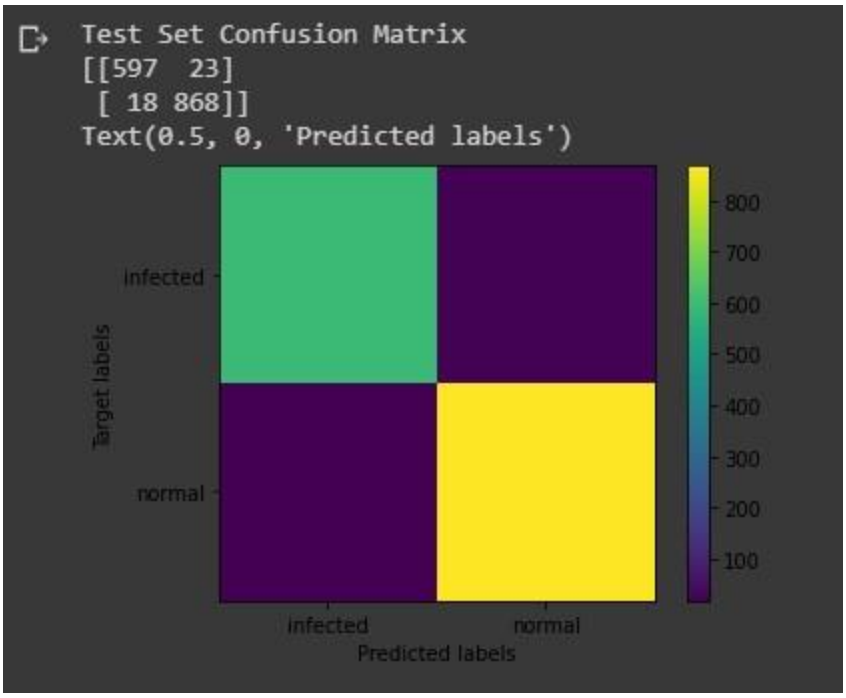
VGG 16

```
Accuracy of the network on the 1506 test images: 97 %
Accuracy of the network on the 1500 validation images: 89 %
```

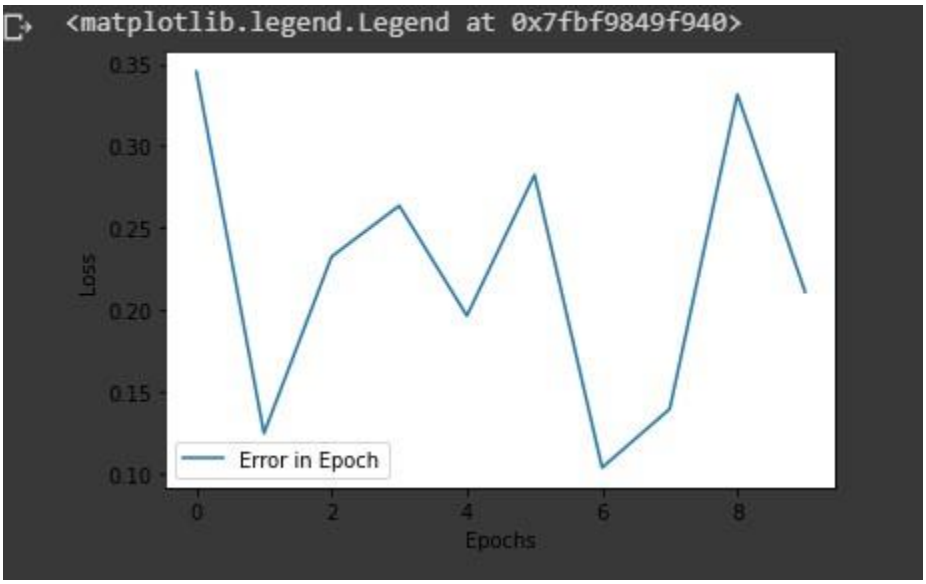
Confusion Matrix for Validation Set:



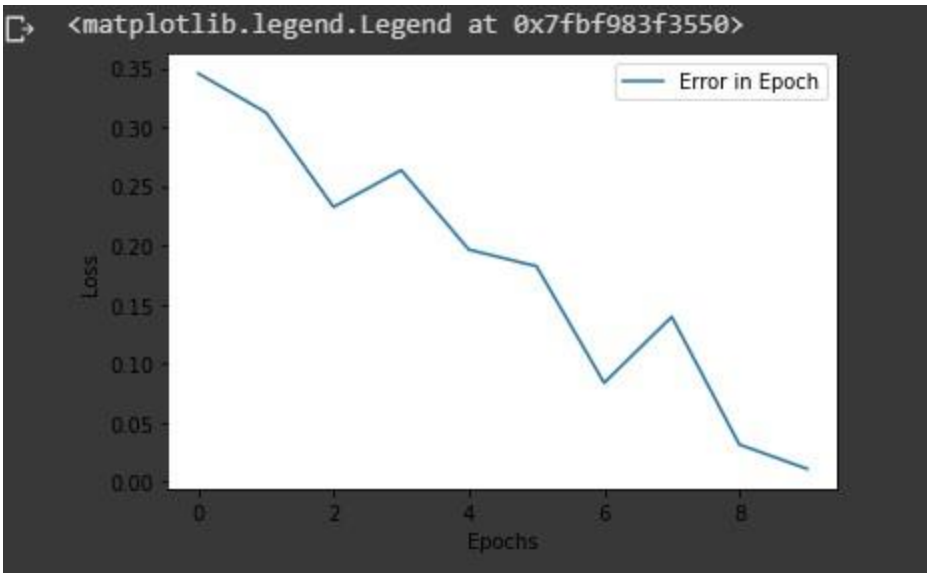
Confusion Matrix for Test Set:



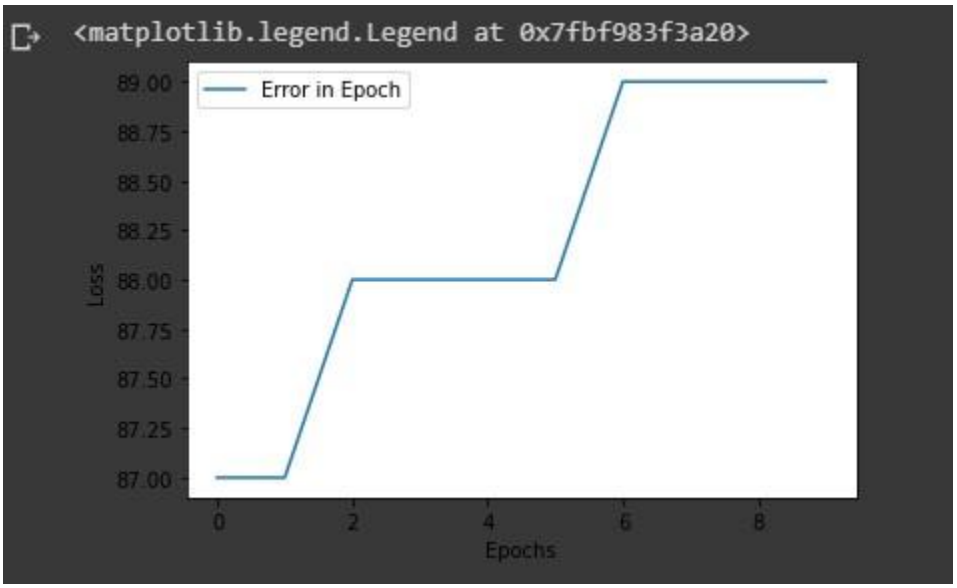
Loss curve for Validation Set:



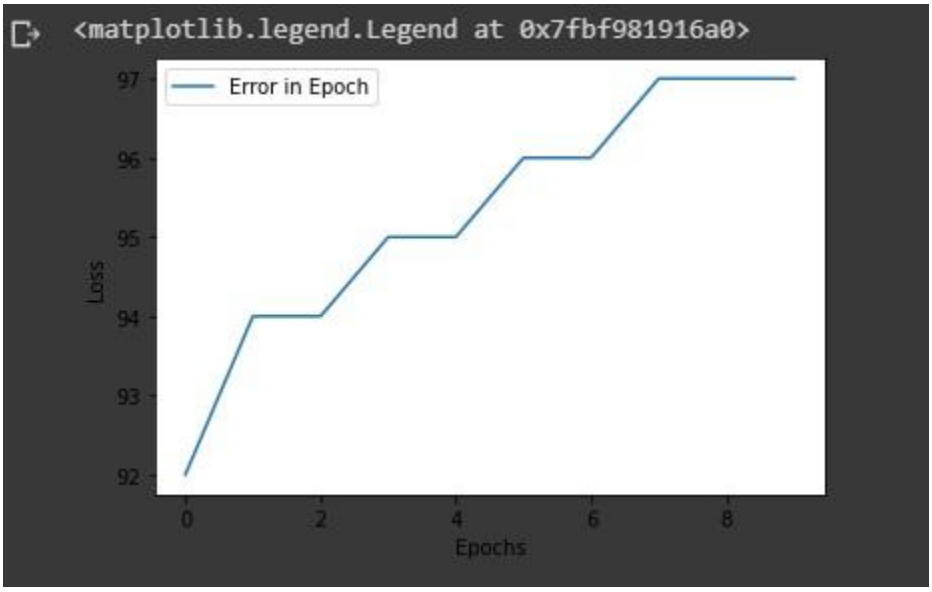
Loss curve for Test Set:



Accuracy curve for Validation Set:



Accuracy curve for Test Set:



Experimental setup (learning rate, number of layers fine-tuned):

Learning Rate = 0.001

Number of Layers added = 3

Linear()

Relu()

Dropout()

Output()

Batch Size = 16

No of threads used = 4

Momentum = 0.9

Loss = Cross Entropy

Optimizer = SGD

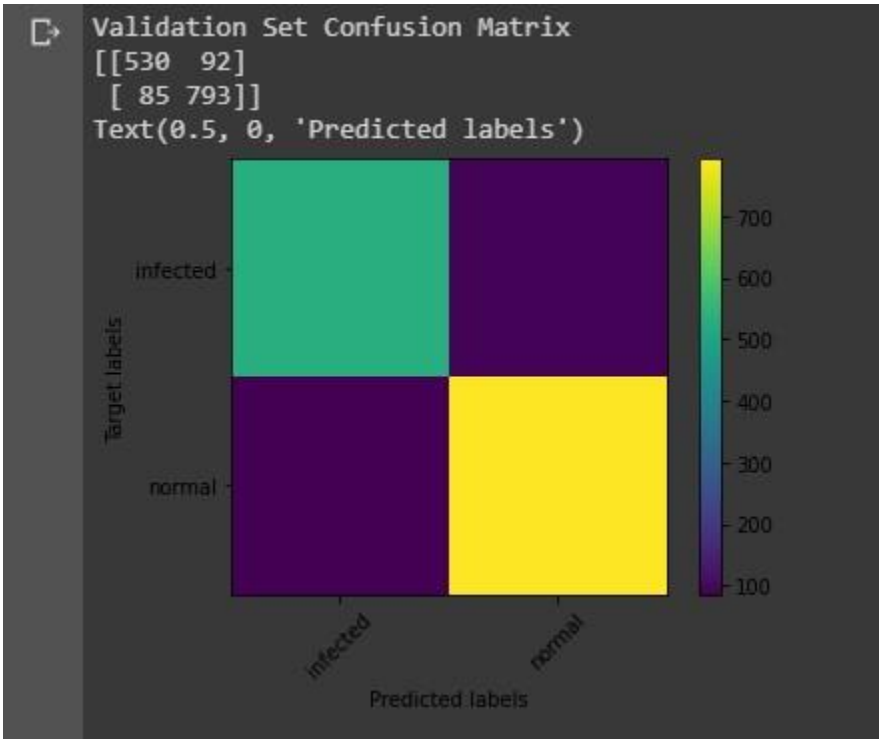
Epochs = 10

RESNET 18

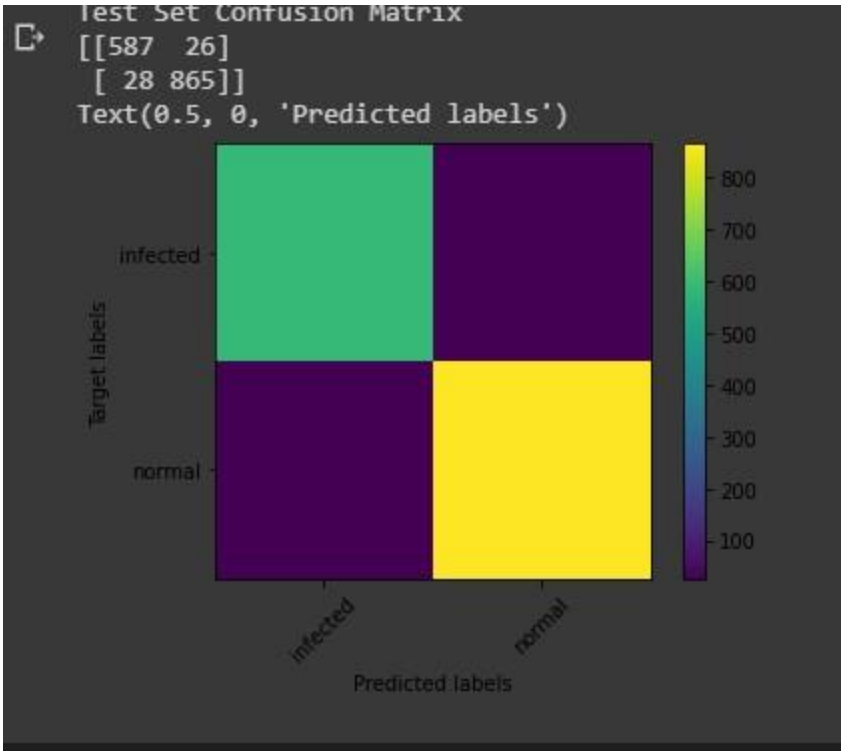
```
Accuracy of the network on the 1506 test images: 96 %
```

```
Accuracy of the network on the 1500 validation images: 88 %
```

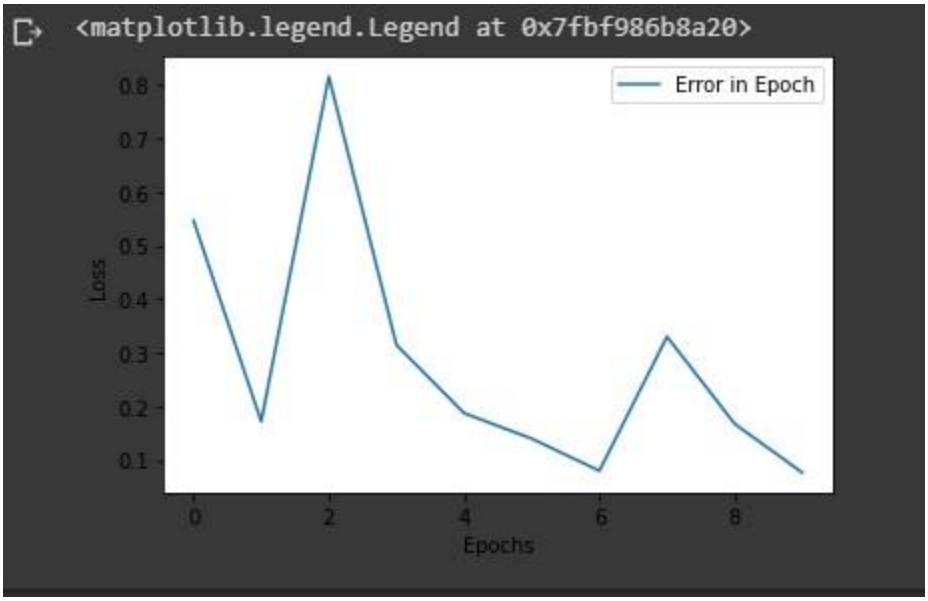
Confusion Matrix for Validation Set:



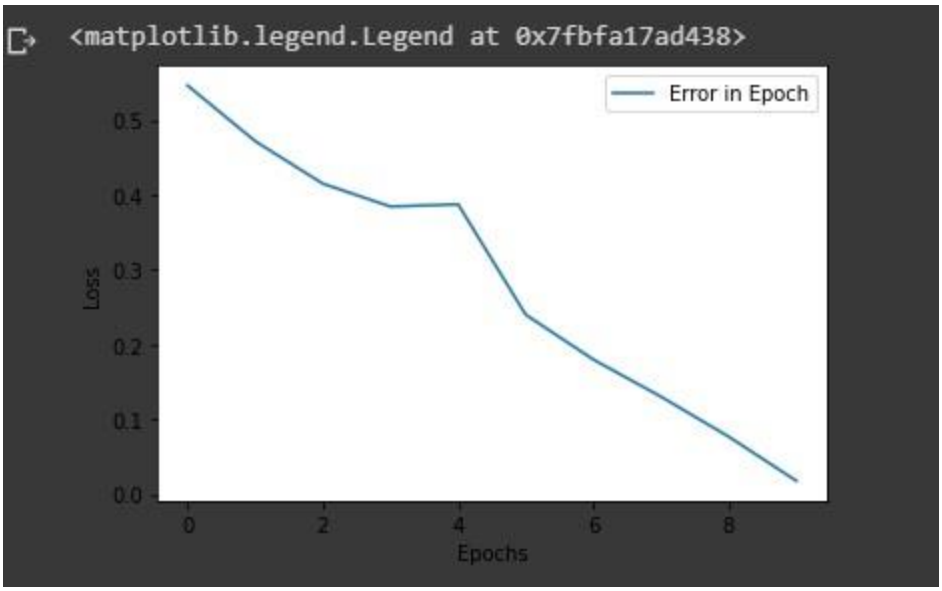
Confusion Matrix for Test Set:



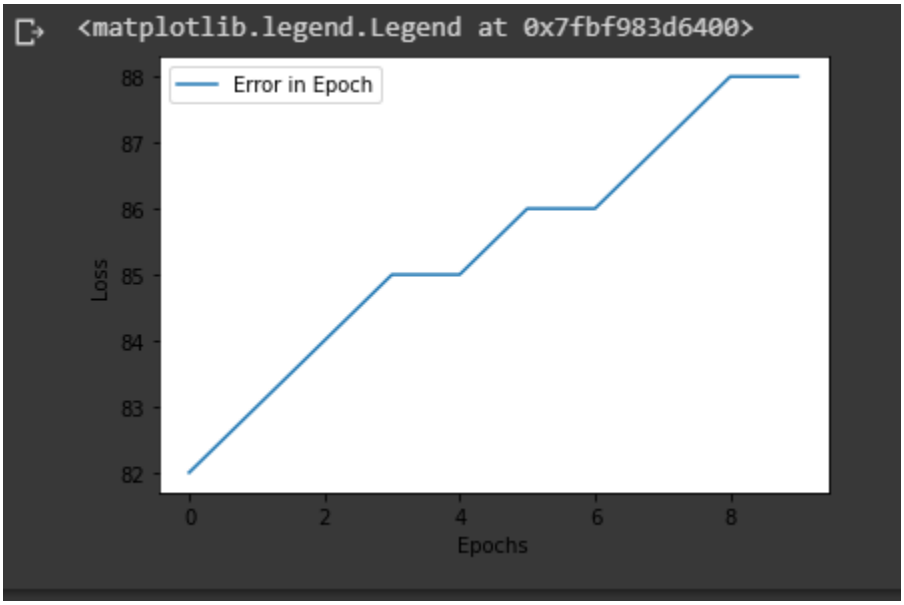
Loss curve for Validation Set:



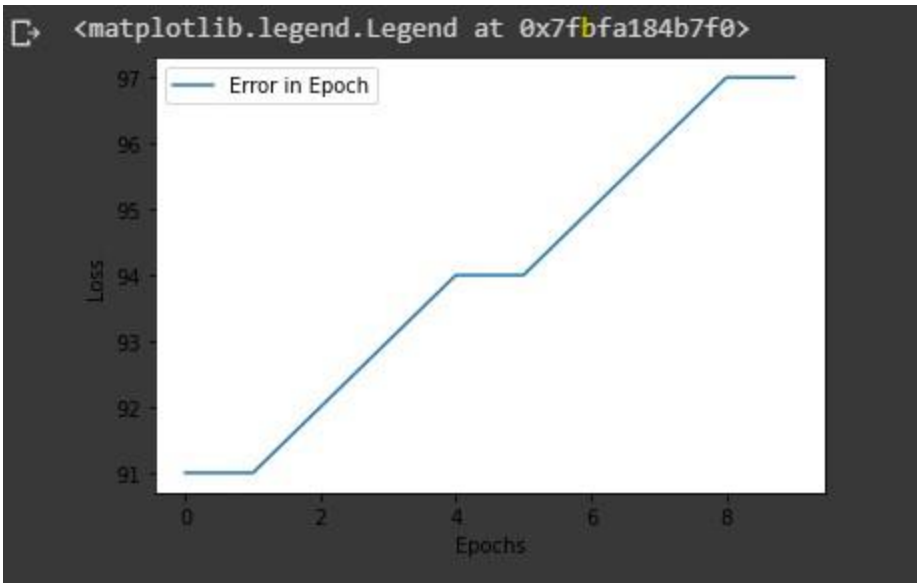
Loss curve for Test Set:



Accuracy curve for Validation Set:



Accuracy curve for Test Set:



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Task 2

The beast results came from training the whole network . Although it took most time.

(The colab notebook kept disconnecting out of runtime so experimenmts could not be completed)

Github Repository Link : https://github.com/SOBAN50/BSCS16022_COVID19_DLSpring2020