

4)a) done, code attached

4)b)

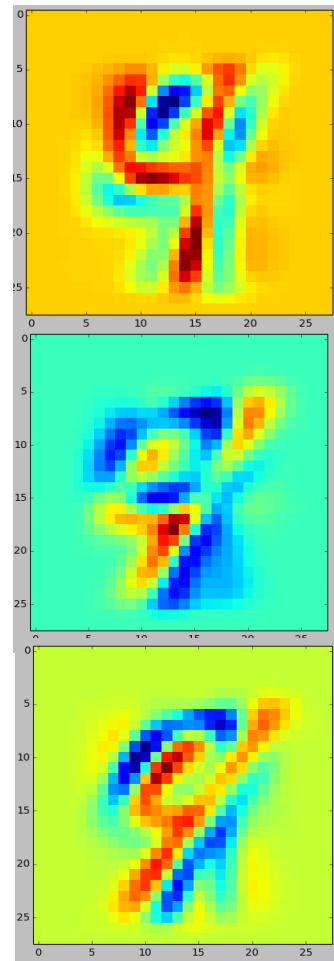
```
Done
Predicted    0    1
Actual
0           939   43
1           92  917

[2 rows x 2 columns]
Accuracy is
Model accuracy is 0.932194876946
1856/1991
```

4)c)

```
These three are wrong
0           -3.28127
1           -3.192847
Predicted           1
Actual             0
Probability_y0      0.4931711
Probability_y1      0.5068289
Wrong              1
Ambiguous          0.006828926
Name: 40, dtype: object
0           -2.89678
1           -2.879747
Predicted           1
Actual             0
Probability_y0      0.4985256
Probability_y1      0.5014744
Wrong              1
Ambiguous          0.001474352
Name: 55, dtype: object
0           -2.76888
1           -2.516782
Predicted           1
Actual             0
Probability_y0      0.4761526
Probability_y1      0.5238474
Wrong              1
Ambiguous          0.02384737

Name: 64, dtype: object
```



4)d)

```
Three most ambiguous
0      -3.535112
1      -3.537115
Predicted      0
Actual         1
Probability_y0  0.5001416
Probability_y1  0.4998584
Wrong          1
Ambiguous      0.0001416222
Name: 1988, dtype: object
0      -1.965257
1      -1.963564
Predicted      1
Actual         0
Probability_y0  0.4997846
Probability_y1  0.5002154
Wrong          1
Ambiguous      0.0002153807
Name: 195, dtype: object
0      -2.981896
1      -2.984986
Predicted      0
Actual         0
Probability_y0  0.500259
Probability_y1  0.499741
Wrong          0
Ambiguous      0.0002589667
Name: 81, dtype: object
...
```

