Question 2.3

1)

(a) Report the number of epochs that your algorithm takes before exiting.

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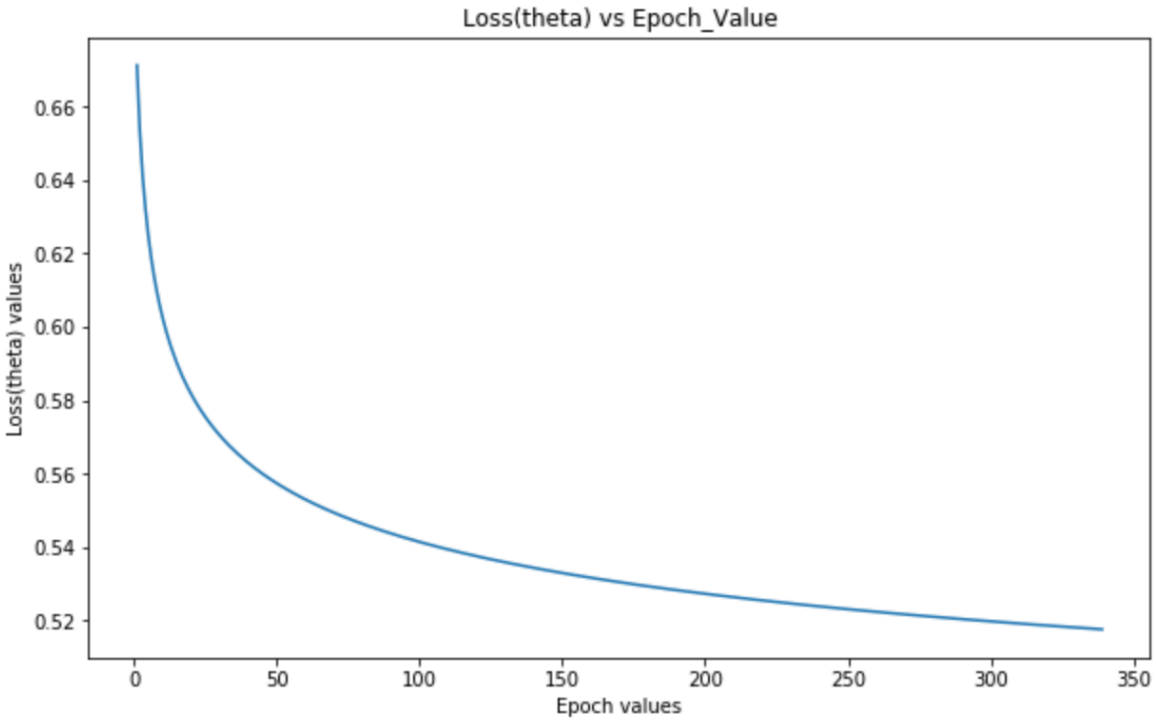
(b) Plot the curve showing L(θ) as a function of epoch.



(c) What is the final value of L(θ) after the optimization?

0.5176151929899254

2)

(a) Report the values of (η_0, η_1). How many epochs does it take? What is the final value of L(θ)?

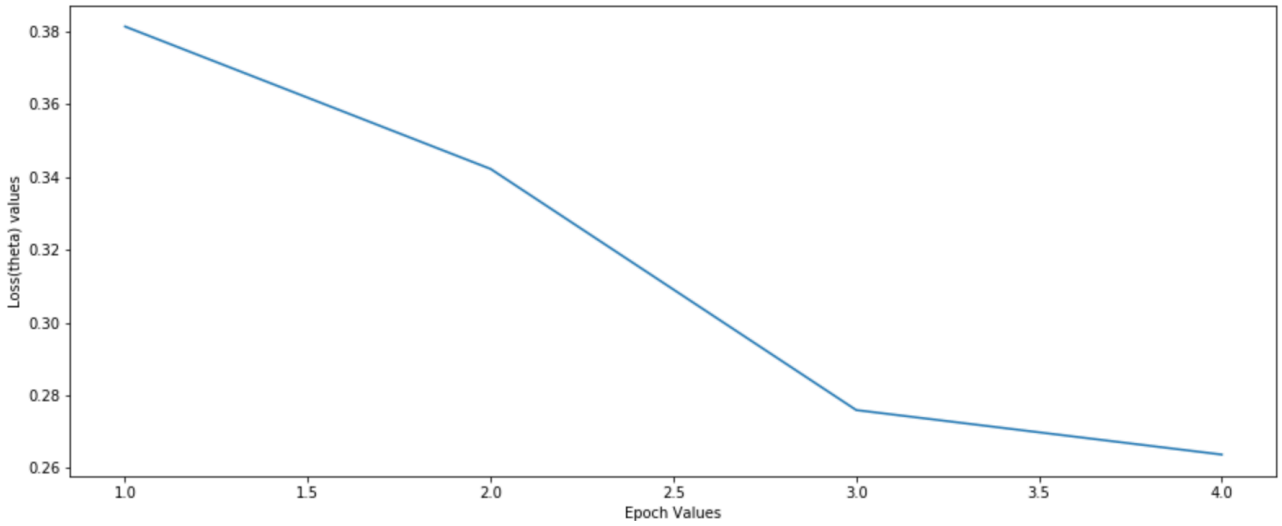
eta_0 = 40

eta_1 = 0.2

number of epochs = 4

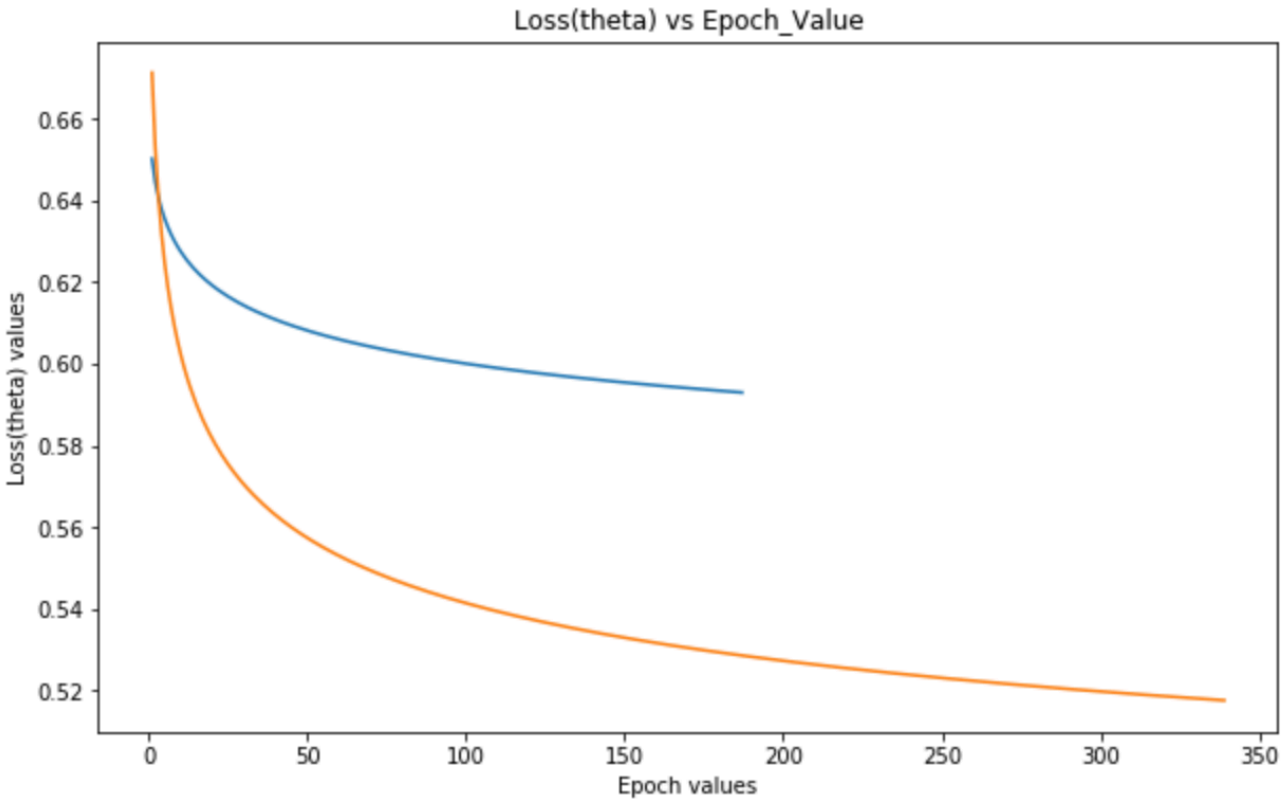
Final value of L(theta) = 0.26155505584268873

(b) Plot the curve showing L(θ) as a function of epoch.



3)

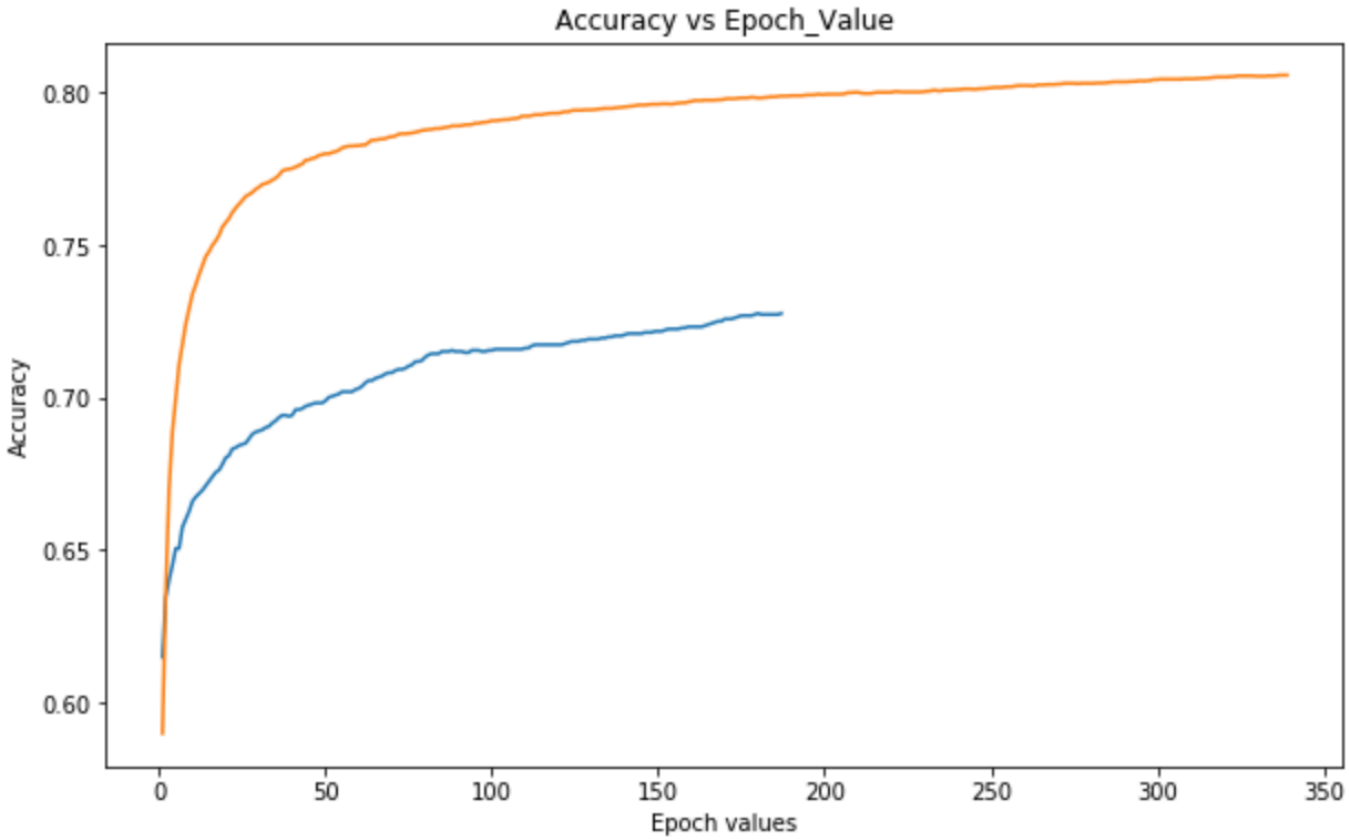
(a) Plot L(θ) as a function of epoch. On the same plot, show two curves, one for training and one for validation data.



Blue Line - Validation Data

Orange Line - Training Data

(b) Plot the accuracy as a function of epoch. On the same plot, show two curves, one for training and one for validation data.

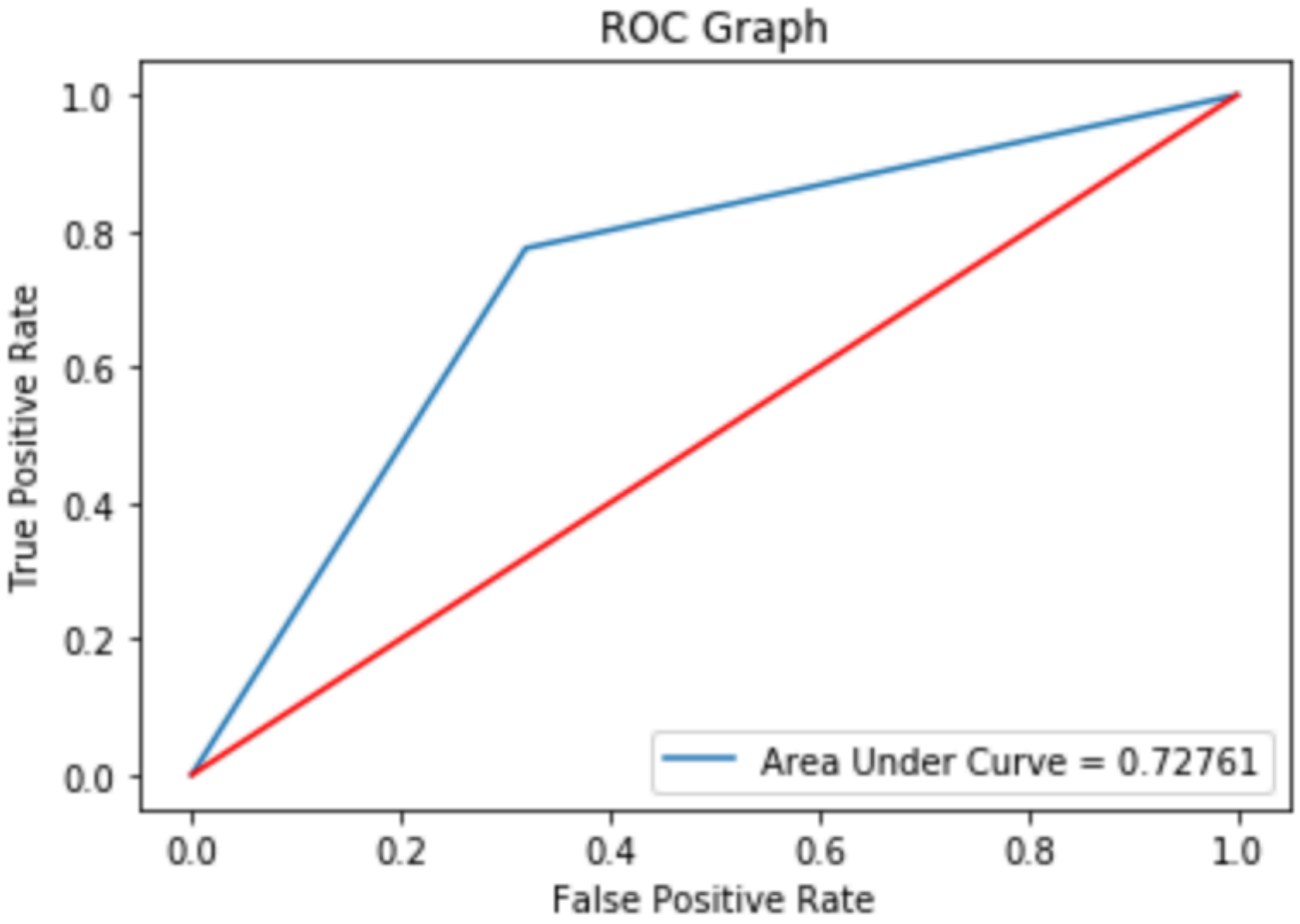


Blue Line - Validation Data

Orange Line - Training Data

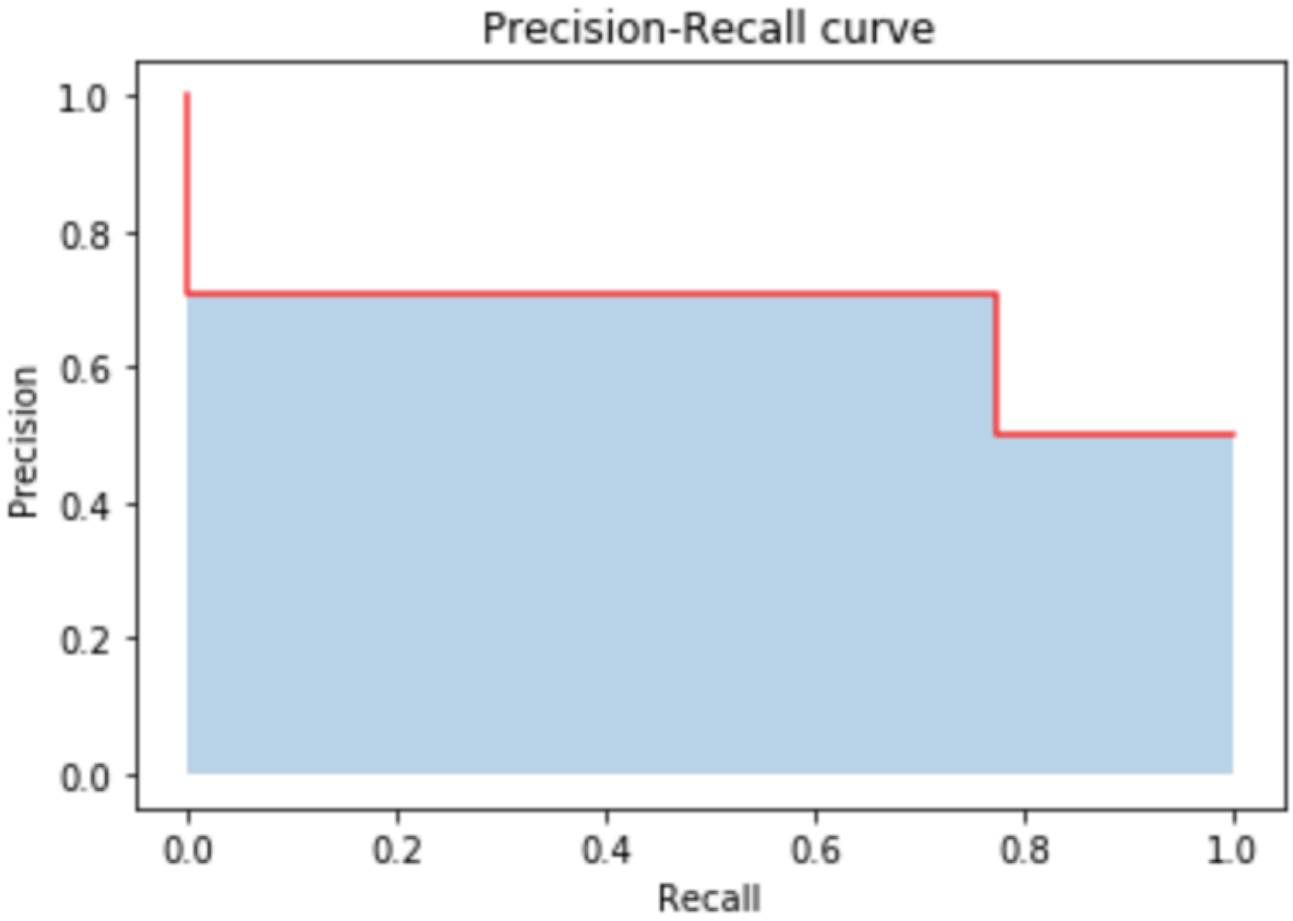
4)

(a) Plot the ROC curve on validation data. Report the area under the curve.



Area under curve = 0.7276064610866374

(b) Plot the Precision-Recall curve on validation data. Report the average precision.



Average Precision = 0.6611575949304713

Question 2.4

Accuracy from leader board - **0.89029**