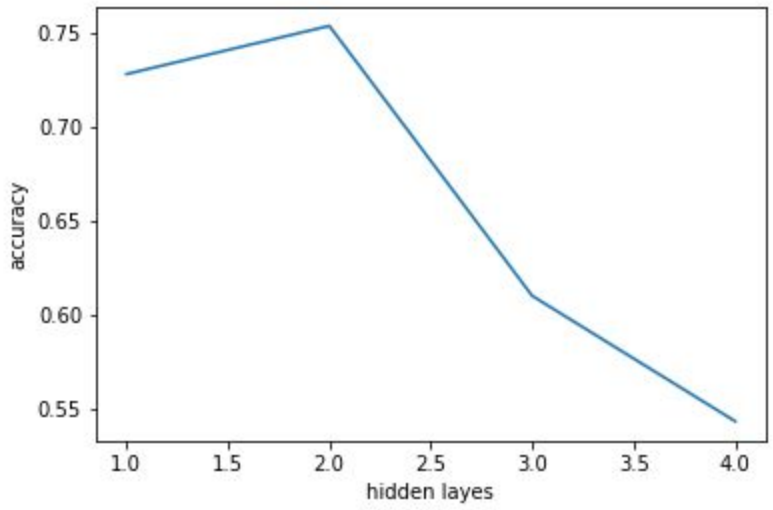
Tom-and-jerry-emotion-detection

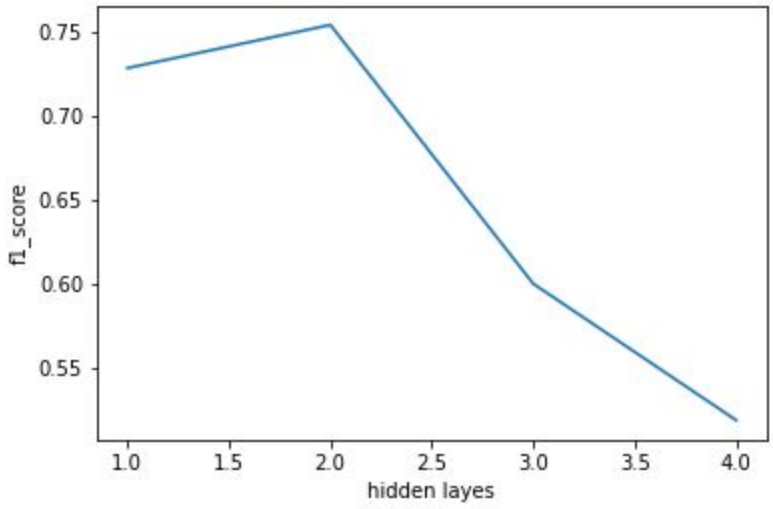
USING CNN :

CNN's are really effective for image classification as the concept of dimensionality reduction suits the huge number of parameters in an image.
Normalize the data.

No of Hidden Layers vs accuracy_score :

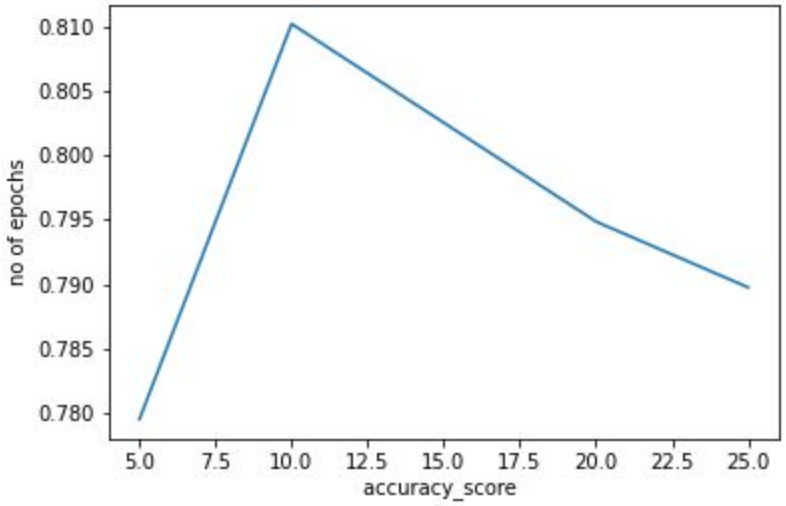


No of Hidden Layers vs F1_score :

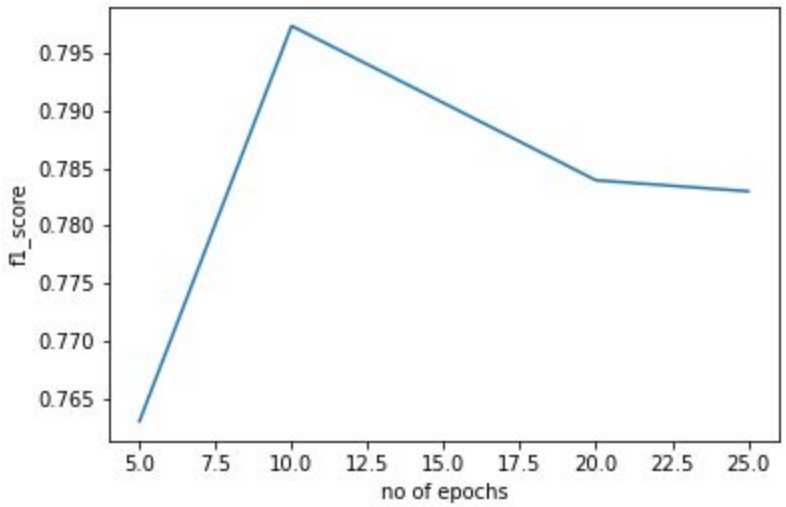


For experiment purpose, here considering the epochs constant.
From the above observation we can state that these two hidden layers are giving the best possible result.

No of epochs vs Accuracy_score :



No of epochs vs F1_score :



Classification report:-

	precision	recall	f1-score	support
0	0.83	0.80	0.81	30
1	0.72	0.80	0.76	45
2	0.67	0.80	0.73	15
3	0.78	0.75	0.76	52
4	0.90	0.81	0.85	53
accuracy			0.79	195
macro avg	0.78	0.79	0.78	195
weighted avg	0.80	0.79	0.79	195

Conclusion:-

There is no other suitable method for this task cnn gives the best possible result for the images data because of its capability to handle high dimensional data. And on test data this gives me an accuracy score of 1. This concludes that whenever we need to classify the images of high dimensionality data like images choose to use cnn. It reduces its dimensionality and gives best results possible. Though images have higher dimensionality they are equal to pixels present. So cnnis best possible choice.

How to run the code : - hardcoded the path of the train and test files just change that only.
