Assignment 2

Logistic Regression

With guidance, in order to get a better understanding on how Logistic Regression had an effect on the fold data's.

What tools were used and why

For this assignment, we used:

from sklearn.linear_model import LogisticRegression as lg

Logisitc Regression was used as that was the goal of this assignment.

Accuracy Score

This score was achieved by :

        train_acc = fitmodel.score(train_x,train_y)
        val_acc = fitmodel.score(val_x,val_y)
        test_acc = fitmodel.score(test_x,test_y)
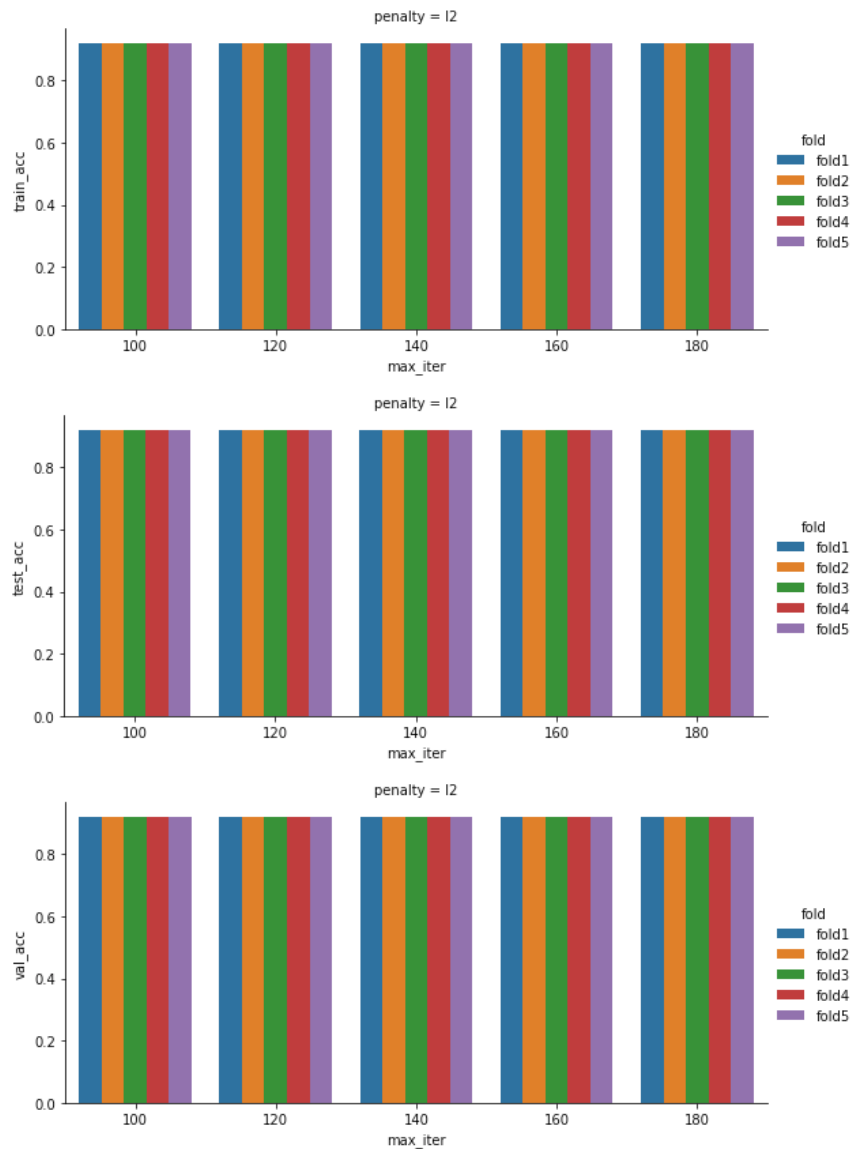
Logistic Regression Module

This module provides the fitting of data. Which will allow the model to provide a prediction, from given data that will fit to the model.

Metrics/Results

FOLD	ACCURACY VAL	TEST
1	0.918896	0.918918
2	0.917723	0.918897
3	0.919712	0.918734
4	0.919346	0.919346
5	0.919636	0.918918
AVG	0.9188807	0.9189178

Conclusion

In assignment 3, we were to implement a working model that should have the ability to predict effectively whether the red-green-blue values which corresponded with the skin colors. Using Logistic Regression would provide the most optimized approach due to the classifications. More precisely we are looking at two regions, in which the inputs would need to be separated into two "regions" of 'skin' and 'not skin' like we saw earlier on in the walk-through. Logistic Regression provides us the ability to be able to provide probabilities and classification of samples using continuous and discrete measurements.

Logistic Regression: Advantages

With the work done by this assignment, we can conclude that Logisitc Regression is very good for binary classifications. It provides a performance baseline in which, we are able to interpret, a

discrete outcome instead of a continuous. Which in turn will tell us either it's a yes or no type of answer. Unlike Linear Regression, Logistic Regression uses "maximum likelihood".

Logistic Regression: Disadvantages

Due to the nature of Logistic Regression and its basis, it also has flaws in non-linear problems. When the answers we are looking for aren't discrete types of problems.

Link to GitHub Repo

https://github.com/Cyrile11/CS4347