

ASSIGNMENT 3

UTA ID:1001956618

NAME : Shravani Reddy Voddula

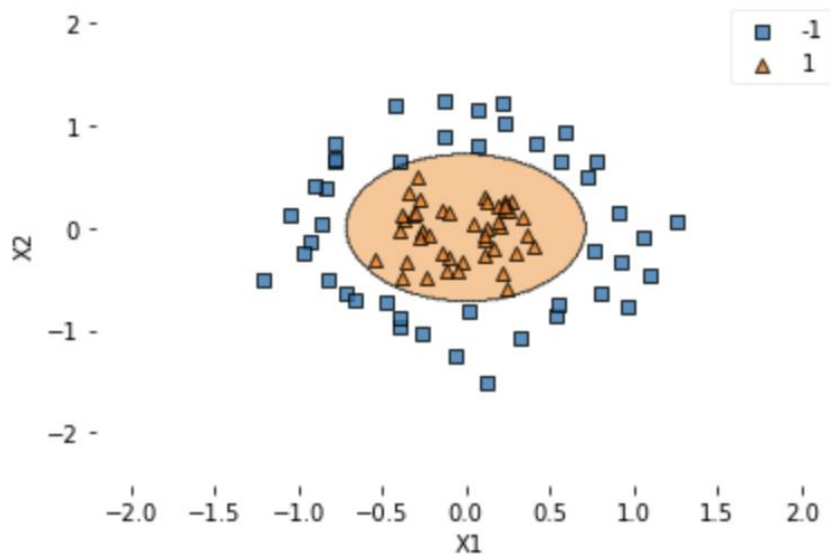
Non-Linear SVM:

As our professor mentioned I added few elements of the code to <https://github.com/ajdillhoff/CSE6363/blob/main/svm/smo.ipynb> and obtained the following results.

Non Linear SVM Without sklearn.svm.SVC

Accuracy=100%

PLOT:



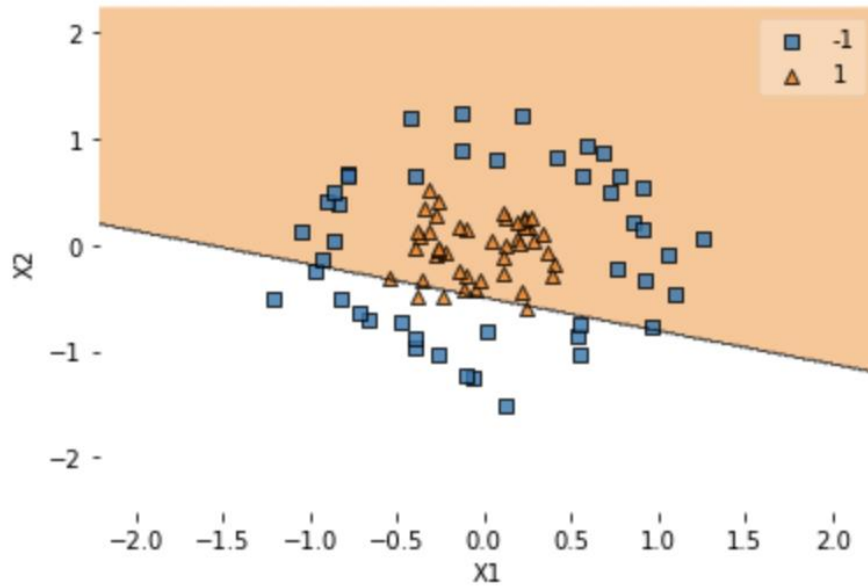
Y_actual= [1 1 1 -1 1 -1 -1 1 -1 -1]

Y-predicted= [1. 1. 1. -1. 1. -1. -1. 1. -1. -1.]

Linear SVM without sklearn.svm.SVC

Accuracy=60%

PLOT



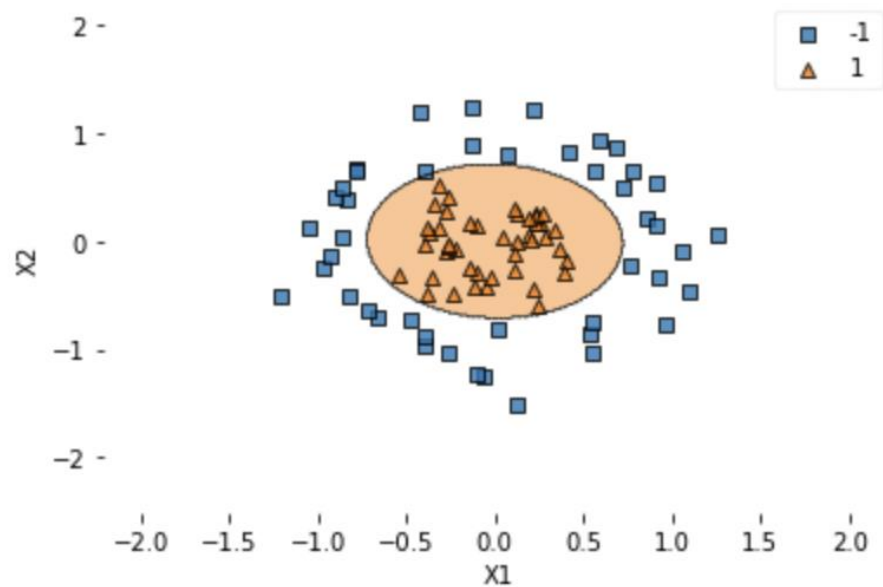
Y_actual [1 1 1 -1 1 -1 -1 1 -1 -1]

Y-predicted: [1. 1. 1. 1. 1. 1. 1. 1. 1. -1.]

Non linear SVM with sklearn.svm.SVC

ACCURACY=100%

PLOT:

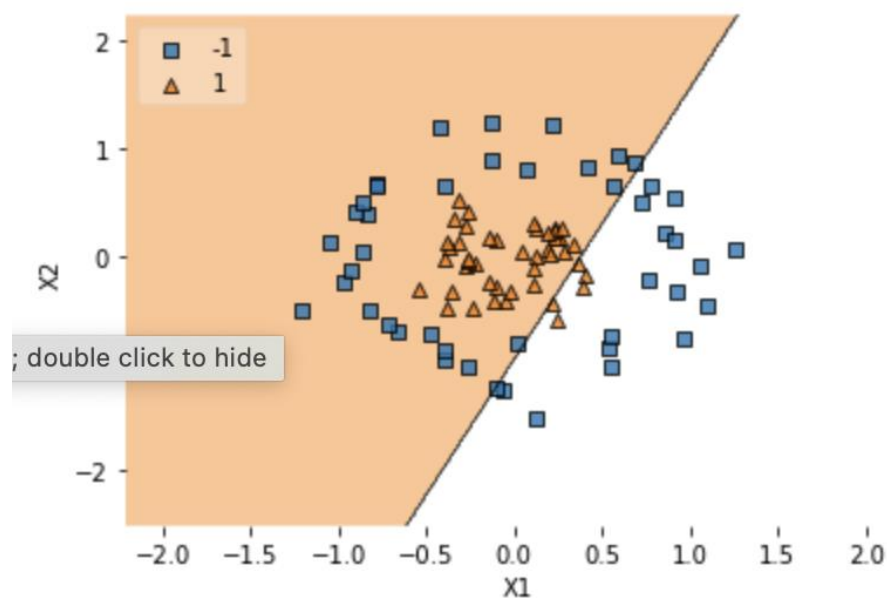


Y_ actual = [1 1 1 -1 1 -1 -1 1 -1 -1]

Y-predicted: [-1 1 1 -1 1 1 1 1 1 -1]

linear SVM with sklearn.svm.SVC

Accuracy:60%



Y_ actual = [1 1 1 -1 1 -1 -1 1 -1 -1]

Y-predicted: [-1 1 1 -1 1 1 1 1 1 -1]

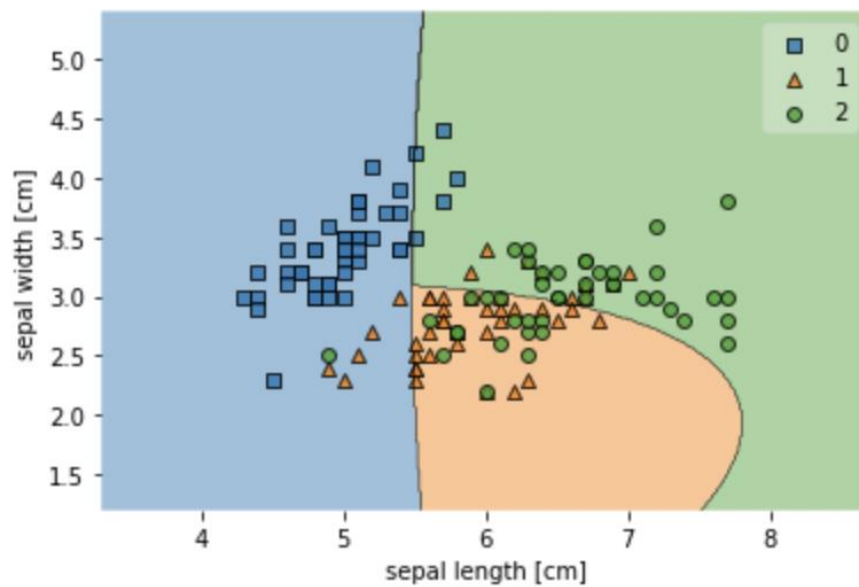
MULTI CLASS:

We used iris dataset for the implementation

Multi Class Non linear SVM without sklearn.svm.SVC

Accuracy:66%

Plot:



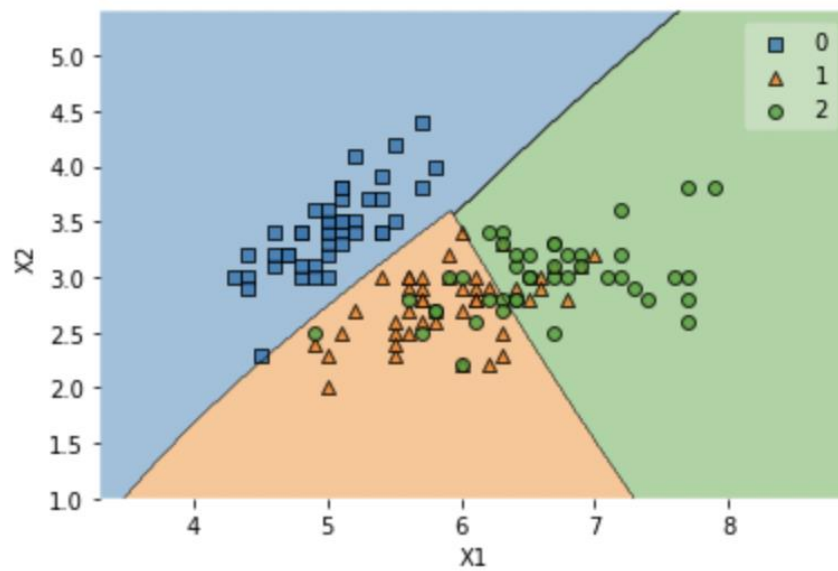
Y_predicted=[1 1 0 0 1 0 1 1 2 1 2 1 0 2 1]

y_actual=[2 2 1 0 1 0 2 1 2 2 2 1 0 2 1]

Multi Class Non linear SVM with sklearn.svm.SVC

Accuracy=60%

Plot:



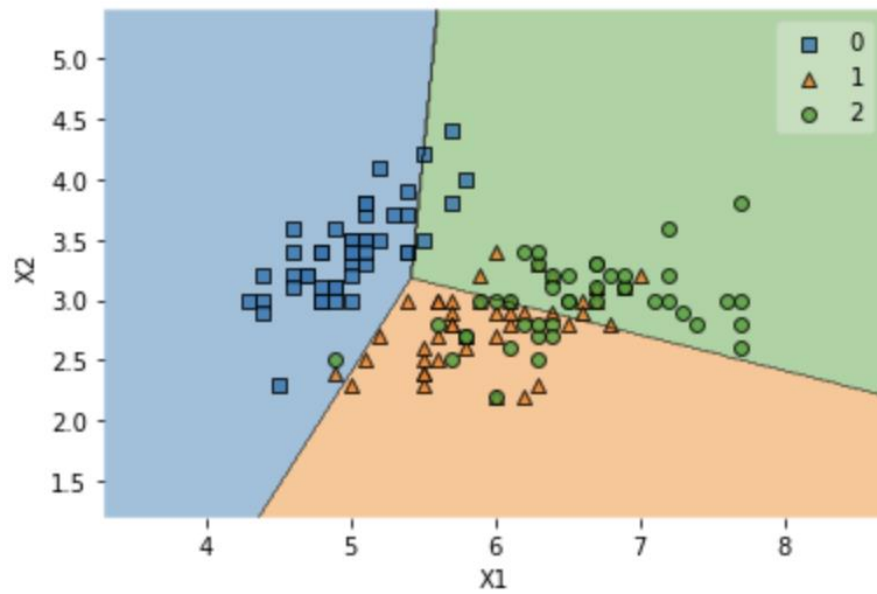
Y_ actual =[2 2 1 0 1 0 2 1 2 2 2 1 0 2 1]

Y_predicted =[1 1 1 1 0 0 2 2 2 2 2 0 1 2 0 2]

Multi Class linear SVM without sklearn.svm.SVC:

Accuracy:73%

Plot:



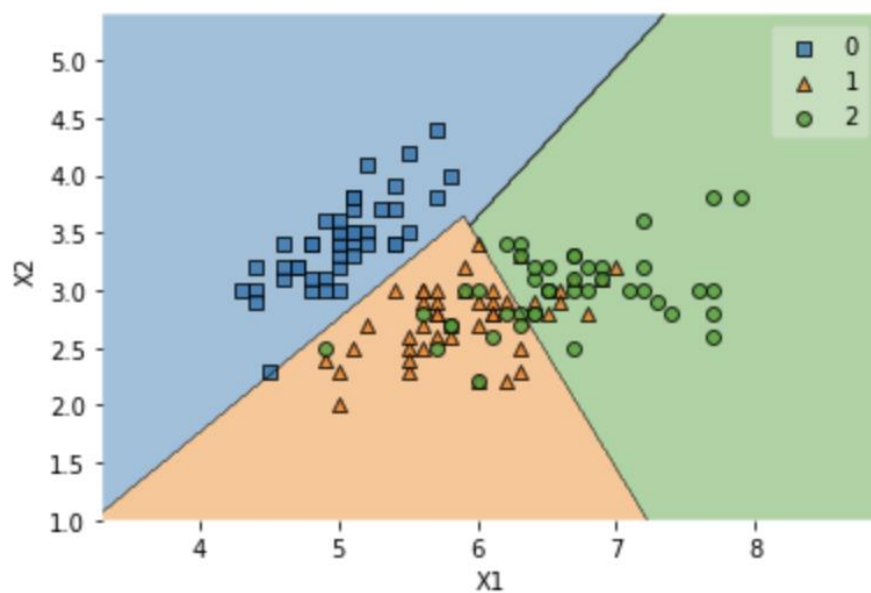
Y_actual [2 2 1 0 1 0 2 1 2 2 2 1 0 2 1]

Y_predicted=[[1 1 1 0 1 0 1 1 2 1 2 1 0 2 1]

Multi Class linear SVM with sklearn.svm.SVC:

Accuracy=60%

plot



Y_actual =[2 2 1 0 1 0 2 1 2 2 2 1 0 2 1]

Y_predicted =[1 1 1 1 0 0 2 2 2 2 2 0 1 2 0 2]

ACCURACY TABLE

	Our SVM	Predfined - SVM
Linear	60%	60%
Non linear	100%	100%
Multi-Class-Linear	73%	60%
Multi-Class-Non-Linear	66%	60%