The model that I created trains the algorithm on each of the features I created. The kernel function that I used was the Linear Function. I chose this kernel because after some research and countless tries, I could not get weights from the model using a polynomial or gaussian kernel. Therefore I went with the linear kernel as finding the weights were a requirement for this project.

I used the sklearn.svm package to train the algorithm and to calculate the weights. I also used this package to create the margin and hyperplane. I used the sklearn.metrics package to calculate the confusion matrix and accuracy, precision, recall, and F1 of the predicted model.

Plot of Margin and Hyperplane:
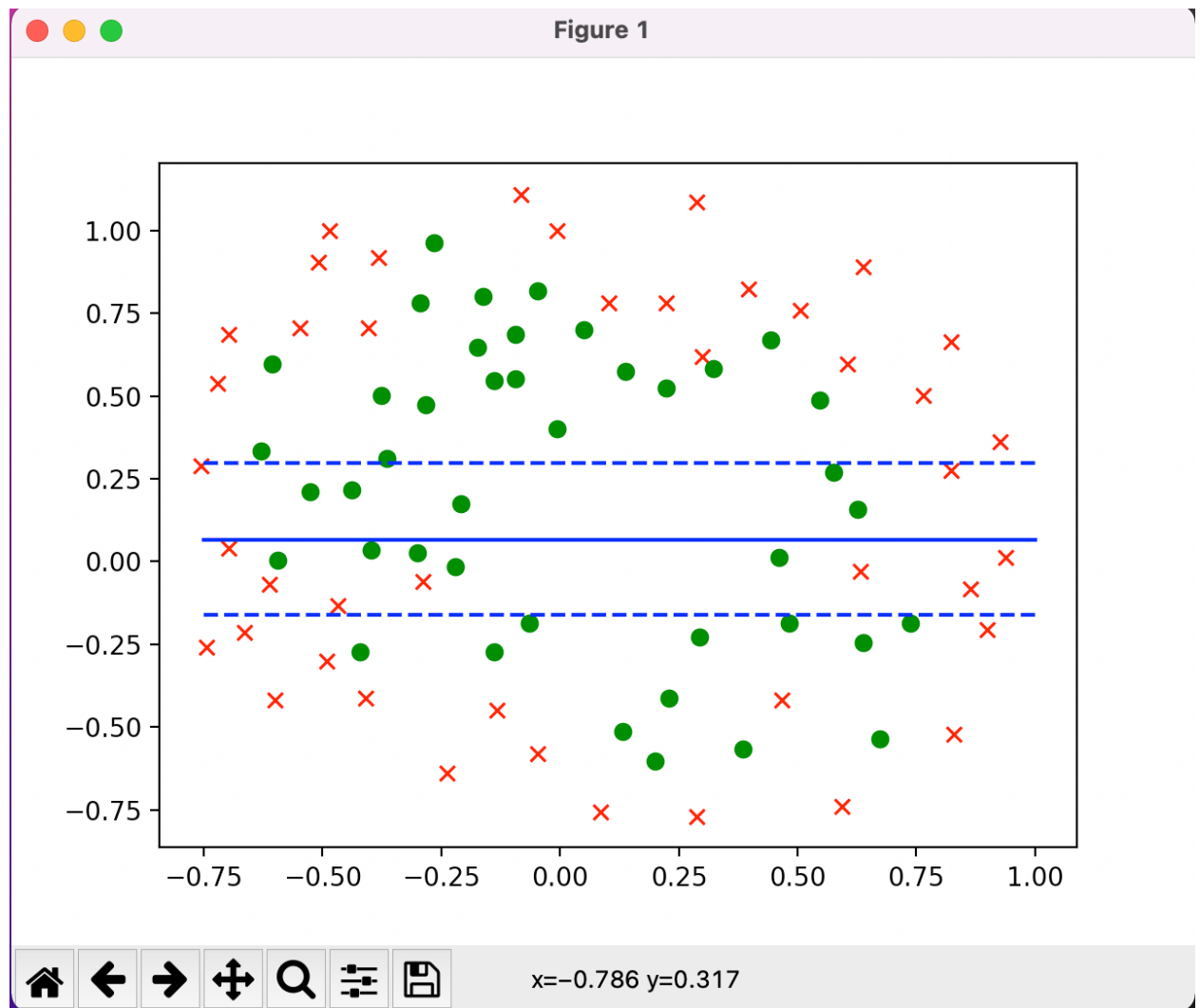
Confusion Matrix:

FP: 2

FN: 3

TP: 13

TN: 15

Accuracy: 85 %

Precision: 87 %

Recall: 0.81

F1: 0.84