# PERCEPTRON

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The goal of this activity is to be able to fit line equations that describes the distinct separation of the classes (different fruits) on the feature plot (Fig. 1).

I was able to do this through the perceptron algorithm which estimates the best weights to describe the separations.
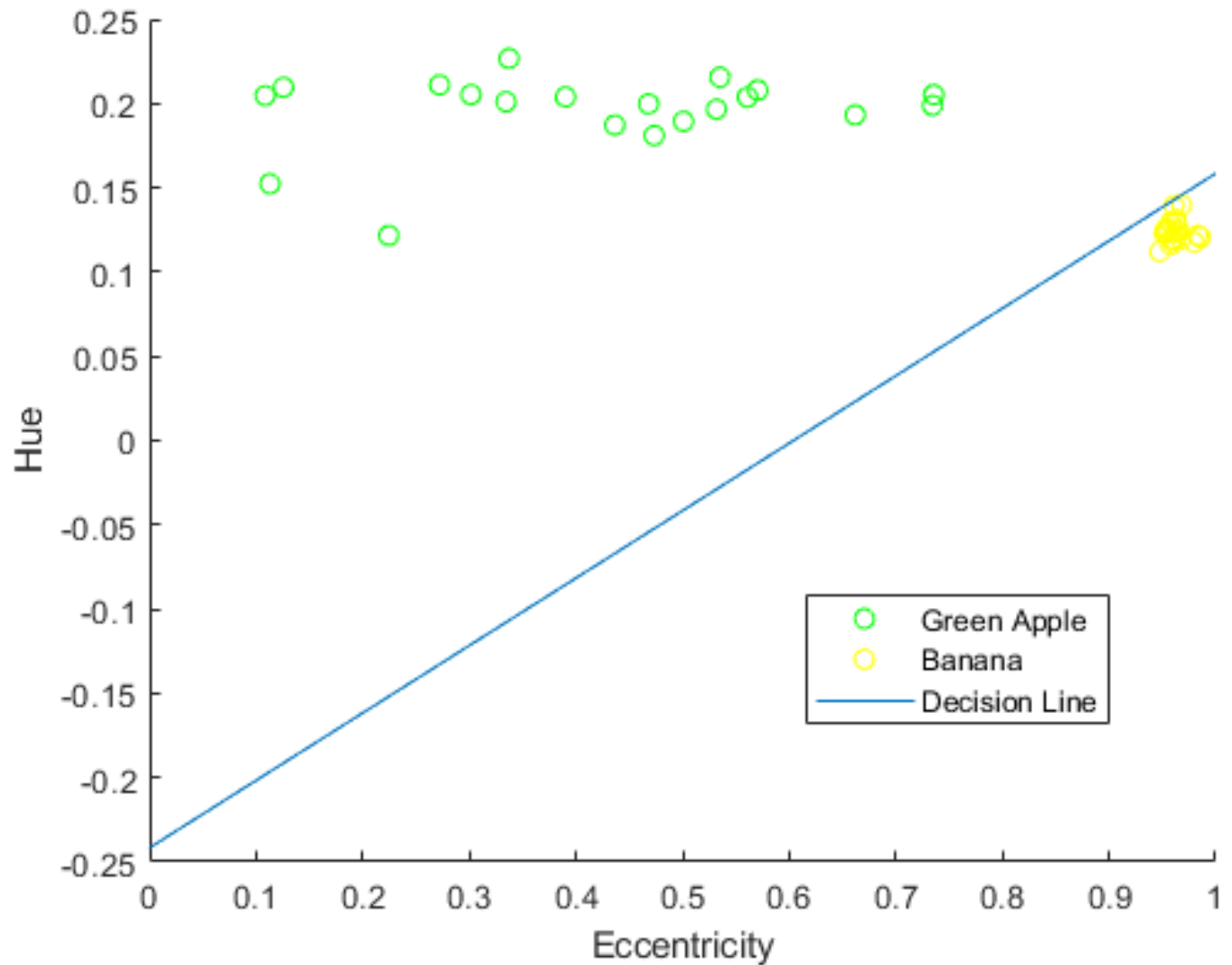
Figure 1. Feature plot taken from Activity 12 results.
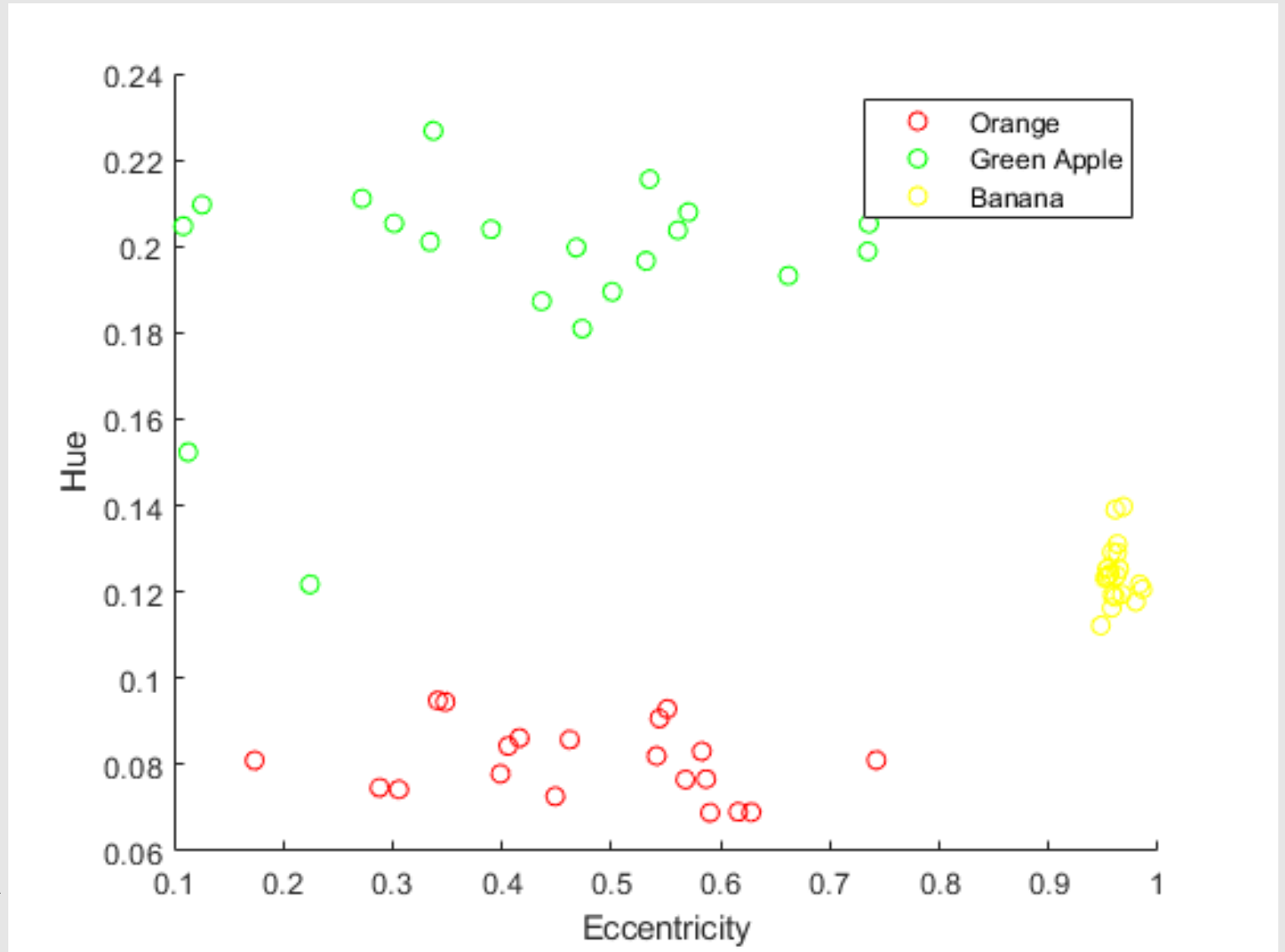
The final weights are :

w = [0.2063 -0.3416 -0.8536]

which describes the line
equation

$$y = 0.4001x - 0.2417$$

Figure 2. Feature plot of green
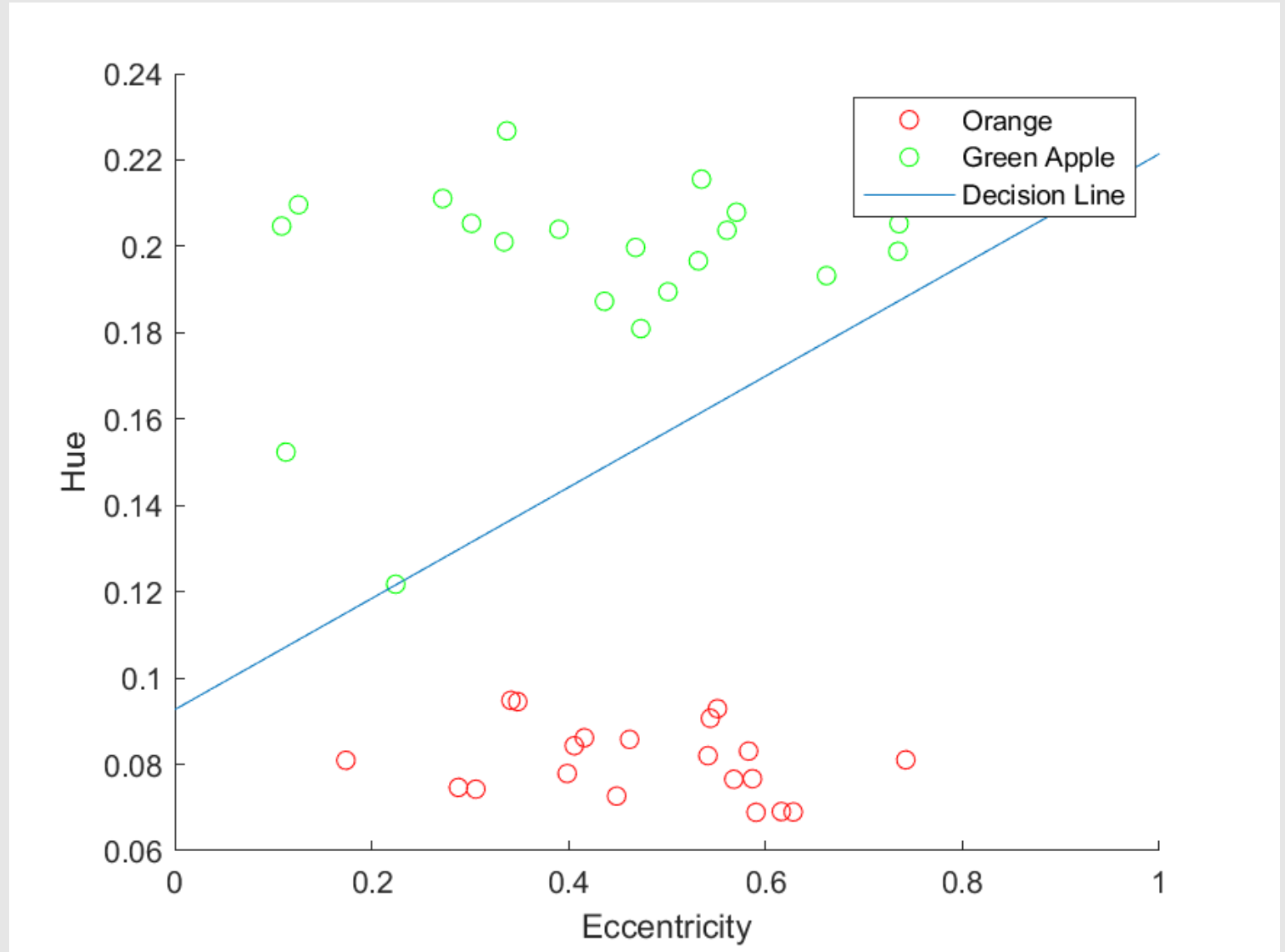apples and bananas with the
calculated decision line.

The final weights are :

$$w = [0.0020\ 0.0028\ -0.0214]$$

which describes the line equation

$$y = 0.1288x + 0.0927$$

Figure 3. Feature plot of green apples and oranges with the calculated decision line.
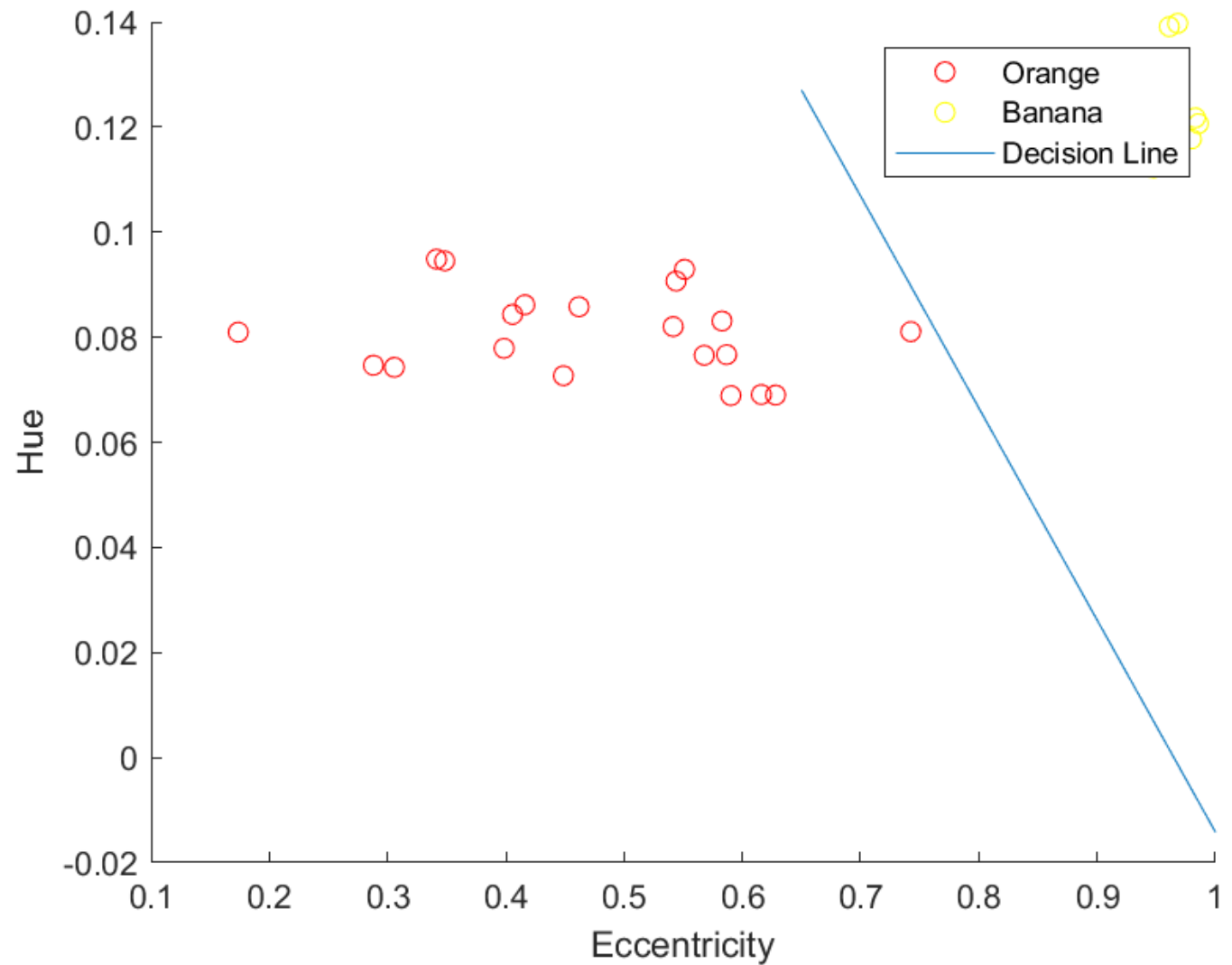
The final weights are :

$$w = [-0.1140 \ 0.1181 \ 0.2927]$$

which describes the line equation

$$y = -0.4035x + 0.3893$$

Figure 4. Feature plot of oranges and bananas with the calculated decision line.

I rate myself 10/10 for fulfilling the requirements of this activity. I thank LJ for the brainstorming sessions