#!/usr/bin/env python

# coding: utf-8

# In[1]:

import numpy as np

import matplotlib.pyplot as plt

from sklearn import svm

# In[4]:

X = np.array([[1,2],[5,8],[1.5,1.8],[8,8],[1,0.6],[9,11]])

y = [0,1,0,1,0,1]

# In[13]:

clf = svm.SVC(kernel='linear', C = 1.0)

clf.fit(X,y)

w = clf.coef\_[0]

print(w)

a = -w[0] / w[1]

xx = np.linspace(0,12)

yy = a \* xx - clf.intercept\_[0] / w[1]

h0 = plt.plot(xx, yy, 'k-', label="Non weighted div")

plt.scatter(X[:, 0], X[:, 1], c = y)

plt.legend()

print(w)

print("Prediction of target for 10.58,10.76 value")

t= clf.predict([[10.58,10.76]])

print(t)

plt.show()

print("Prediction of target for 0.58,0.76 values:")

t= clf.predict([[0.58,0.76]])

print(t)

plt.show()