

Assignment-3

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import pandas as pd
import numpy as np
import csv
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.neighbors import KNeighborsClassifier

X = []
Y = []

file = "data.csv"
csvfile = open(file, 'r')
read = csv.reader(csvfile)
read = list(read)
read = read[1:]

for row in read:
    for column in [0,1]:
        row[column] = int(row[column])
    X.append(row[0:2])
    Y.append(row[2])
print('X = ',X,'\nY = ',Y)

X_train, X_test, y_train, y_test = train_test_split(X, Y, test_size=0.20)

scaler = StandardScaler()
scaler.fit(X_train)
#print(X_test)
X_train = scaler.transform(X_train)
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X_test = scaler.transform(X_test)
testdata=[[6,6]]
testdata = scaler.transform(testdata)

classifier = KNeighborsClassifier(n_neighbors=3)
classifier.fit(X_train, y_train)

print("Output of KNN")
y_pred = classifier.predict(testdata)
print(y_pred)

print("Output of Weighted KNN ")
classifier = KNeighborsClassifier(n_neighbors=3,weights='distance')
classifier.fit(X_train, y_train)

y_pred = classifier.predict(testdata)
print(y_pred)

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Output:

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X = [[2, 4], [4, 2], [4, 4], [6, 4], [4, 6], [6, 2]]
Y = ['Negative', 'Negative', 'Positive', 'Negative', 'Negative', 'Positive']
Output of KNN
['Negative']
Output of Weighted KNN
['Negative']

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