import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

import seaborn as sns

from sklearn.model\_selection import train\_test\_split

from sklearn.metrics import accuracy\_score

from sklearn.neighbors import KNeighborsClassifier

from sklearn.svm import SVC

from sklearn.metrics import ConfusionMatrixDisplay

from sklearn.metrics import confusion\_matrix,ConfusionMatrixDisplay

df = pd.read\_csv('/content/sample\_data/mnist\_test.csv')

df

nine = df.iloc[4,1:]

nine.shape

nine = nine.values.reshape(28,28)

plt.imshow(nine,cmap='gray')

x = df.drop('7',axis=1)

y = df['7']

x\_train,x\_test,y\_train,y\_test = train\_test\_split(x,y,test\_size = 0.25,random\_state =42)

print(x)

print(y)

knn = KNeighborsClassifier(n\_neighbors = 5)

knn.fit(x\_train,y\_train)

model = SVC()

model.fit(x\_train,y\_train)

y\_predict = knn.predict(x\_test)

Y\_predict

accuracy = accuracy\_score(y\_test,y\_predict)

Accuracy

cm = confusion\_matrix(y\_test,y\_predict)

Cm

color= 'white'

matrix = ConfusionMatrixDisplay(confusion\_matrix=cm)

matrix.plot()

from sklearn.metrics import classification\_report

print(classification\_report(y\_test,y\_predict))