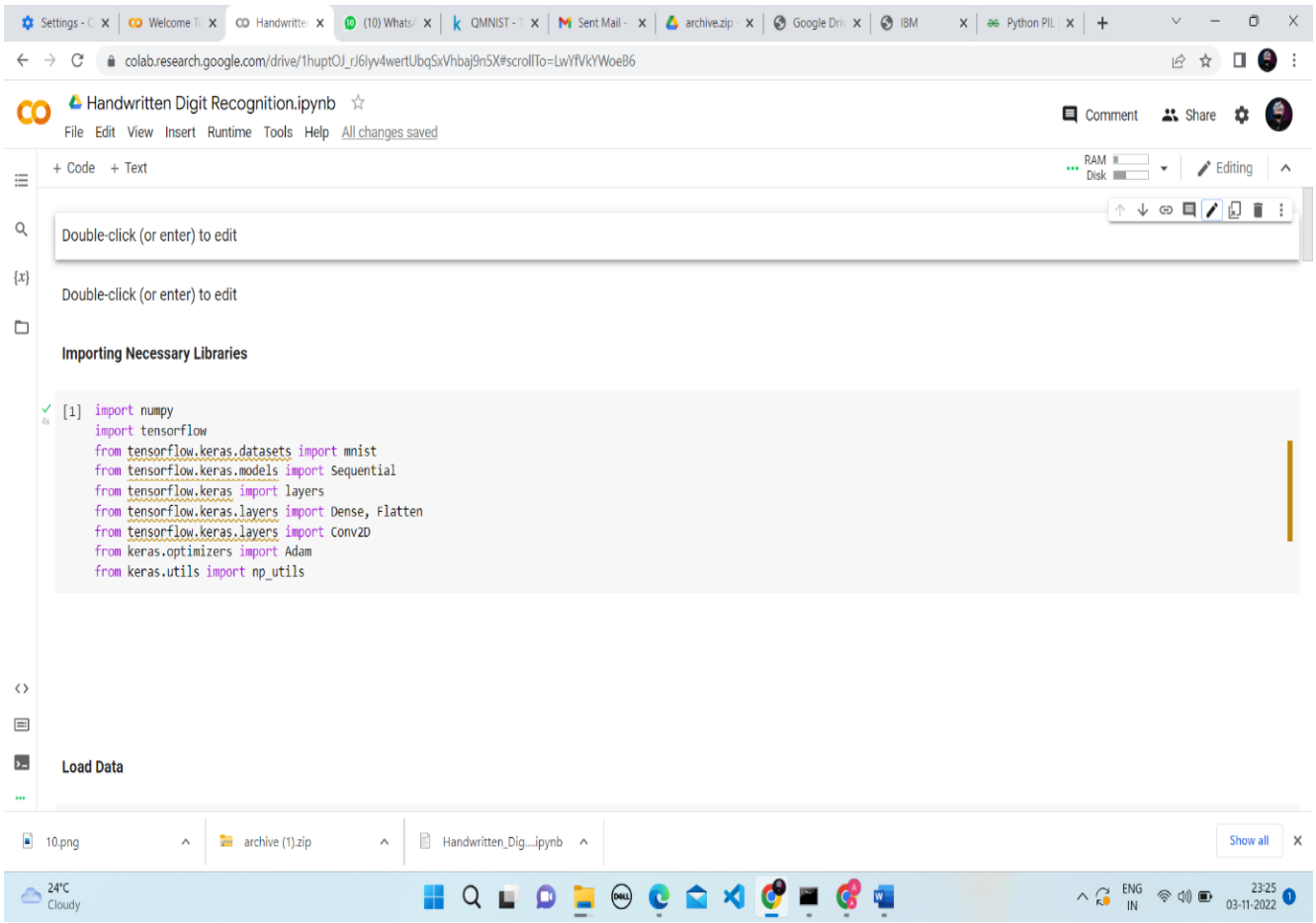
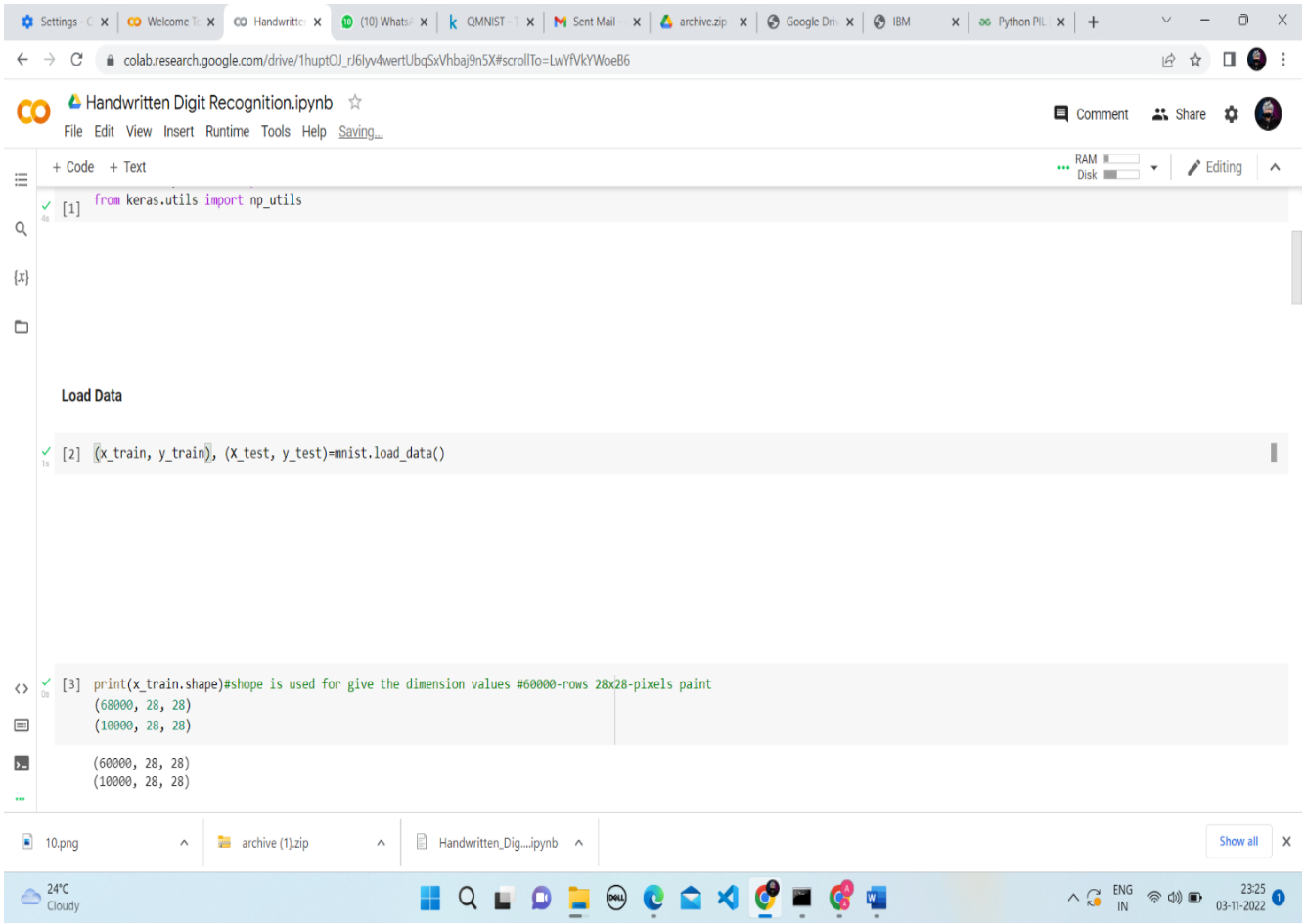
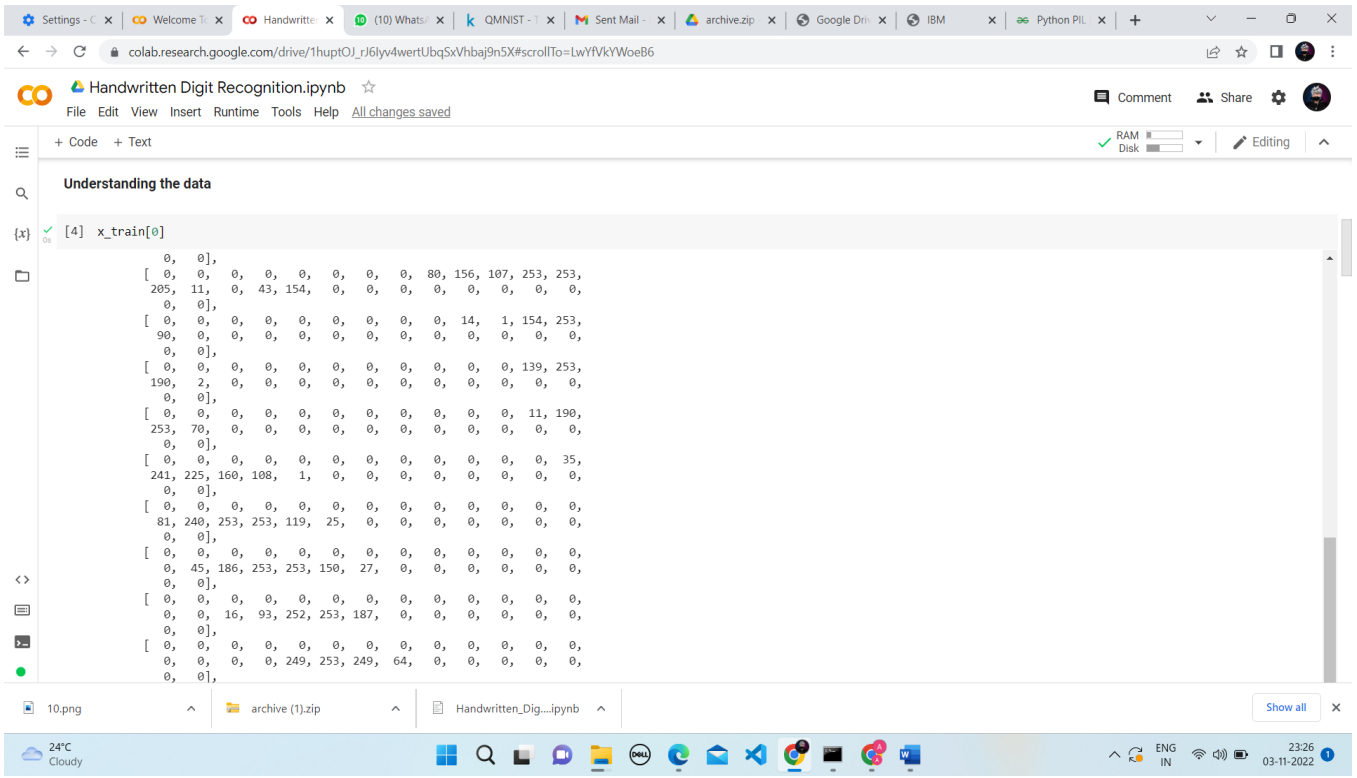
Project Development Phase
Sprint-1

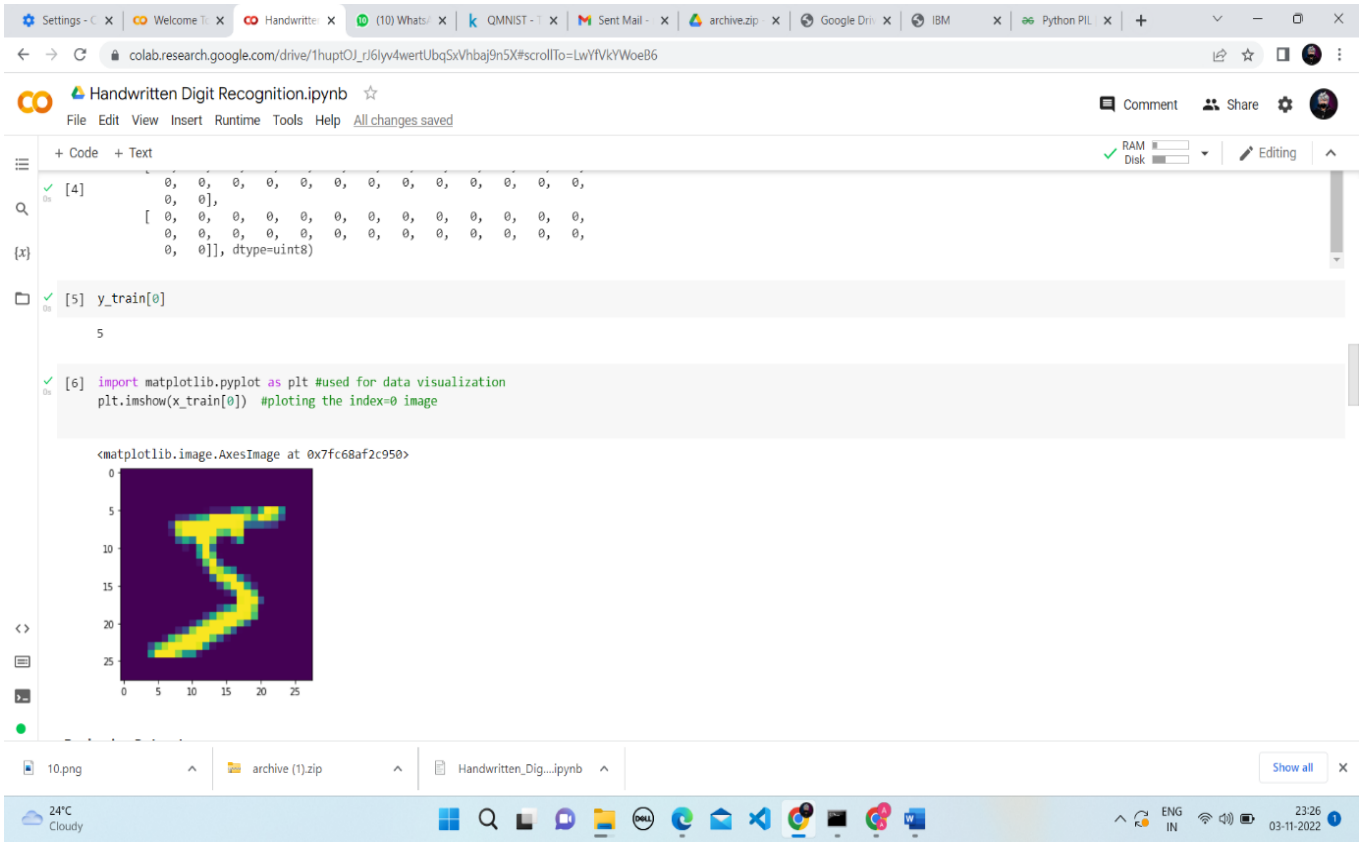
Date	3 November 2022
Team ID	PNT2022TMID40411
Project Name	A Novel Method for Handwritten Digit Recognition System

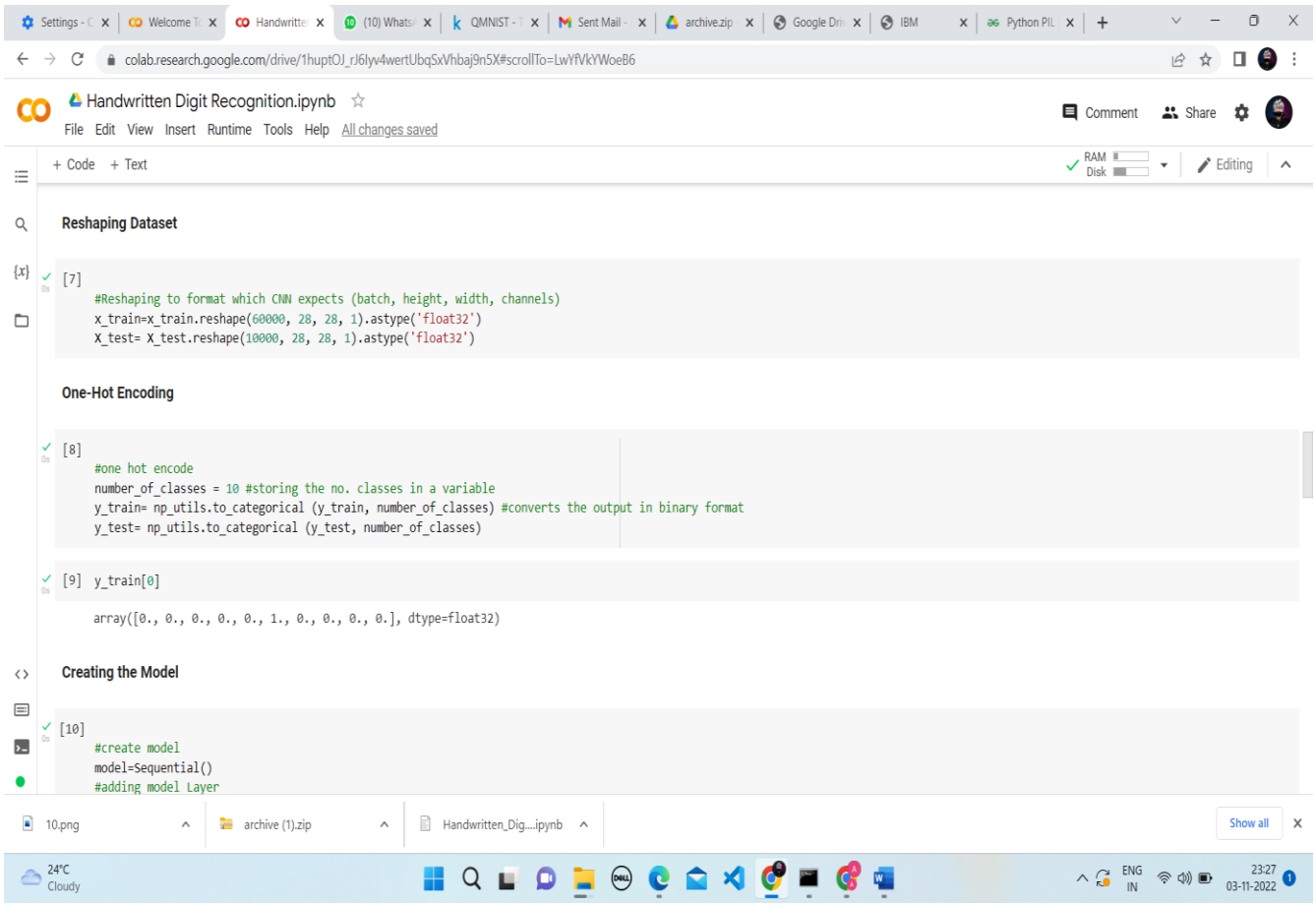


Dataset Link:
https://drive.google.com/file/d/1rH45JOMn2Gqme4ymXGQD8qtpFEgT2LL2/view?usp=share_link


colab.research.google.com/drive/1huptOJ_rJ6Iyv4wertUbqSxVhbaj9n5X#scrollTo=LwYfVkYWoeB6
Handwritten Digit Recognition.ipynb
File Edit View Insert Runtime Tools Help Saving...
Comment
Share
+ Code + Text
RAM
Disk
Editing
[1] from keras.utils import np_utils
Load Data
[2] (x_train, y_train), (X_test, y_test)=mnist.load_data()
[3] print(x_train.shape)#shope is used for give the dimension values #60000-rows 28x28-pixels paint
(68000, 28, 28)
(10000, 28, 28)
(60000, 28, 28)
(10000, 28, 28)
10.png
archive (1).zip
Handwritten_Dig....ipynb
Show all
24°C
Cloudy
ENG
IN
23:25
03-11-2022


Handwritten Digit Recognition.ipynb
File Edit View Insert Runtime Tools Help All changes saved
Comment Share
+ Code + Text
RAM Disk
Editing
Understanding the data
[4] x_train[0]
0, 0],
[0, 0, 0, 0, 0, 0, 0, 0, 80, 156, 107, 253, 253,
205, 11, 0, 43, 154, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0],
[0, 0, 0, 0, 0, 0, 0, 0, 0, 14, 1, 154, 253,
90, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0],
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 139, 253,
190, 2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0],
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 11, 190,
253, 70, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0],
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 35,
241, 225, 160, 108, 1, 0, 0, 0, 0, 0, 0, 0,
0, 0],
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
81, 240, 253, 253, 119, 25, 0, 0, 0, 0, 0, 0,
0, 0],
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 45, 186, 253, 253, 150, 27, 0, 0, 0, 0, 0,
0, 0],
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 16, 93, 252, 253, 187, 0, 0, 0, 0, 0,
0, 0],
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 249, 253, 249, 64, 0, 0, 0, 0,
0, 0],
10.png
archive (1).zip
Handwritten_Dig....ipynb
Show all
24°C Cloudy
ENG IN
23:26 03-11-2022


Handwritten Digit Recognition.ipynb
File Edit View Insert Runtime Tools Help All changes saved
Comment Share
+ Code + Text
RAM Disk
Editing
[4]
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0],
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0]], dtype=uint8)
[5] y_train[0]
5
[6] import matplotlib.pyplot as plt #used for data visualization
plt.imshow(x_train[0]) #ploting the index=0 image
<matplotlib.image.AxesImage at 0x7fc68af2c950>
0
5
10
15
20
25
0 5 10 15 20 25
10.png
archive (1).zip
Handwritten_Dig....ipynb
Show all
24°C Cloudy
ENG IN
23:26 03-11-2022


colab.research.google.com/drive/1huptOJ_rJ6Iyv4wertUbqSxVhbaj9n5X#scrollTo=LwYfVkYWoeB6
Handwritten Digit Recognition.ipynb
File Edit View Insert Runtime Tools Help All changes saved
Comment
Share
+ Code + Text
RAM
Disk
Editing
Reshaping Dataset
[7]
#Reshaping to format which CNN expects (batch, height, width, channels)
x_train=x_train.reshape(60000, 28, 28, 1).astype('float32')
X_test= X_test.reshape(10000, 28, 28, 1).astype('float32')
One-Hot Encoding
[8]
#one hot encode
number_of_classes = 10 #storing the no. classes in a variable
y_train= np_utils.to_categorical (y_train, number_of_classes) #converts the output in binary format
y_test= np_utils.to_categorical (y_test, number_of_classes)
[9] y_train[0]
array([0., 0., 0., 0., 0., 1., 0., 0., 0., 0.], dtype=float32)
Creating the Model
[10]
#create model
model=Sequential()
#adding model Layer
10.png
archive (1).zip
Handwritten_Dig....ipynb
Show all
24°C
Cloudy
ENG
IN
23:27
03-11-2022